

**PERSONS  
WITH DISABILITIES  
IN SOCIETY**

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and  
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**DEDICATED**

to

*the millions of persons whose indomitable spirits  
face disabilities with courage and serenity  
and to all those whose dedicated services  
enable the disabled to live a life  
worthy of human dignity.*

## *Foreword*

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SITARAM KESRI

कल्याण मंत्री  
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नई दिल्ली-110 001  
भारत  
MINISTER OF WELFARE  
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INDIA  
27th September, 1994

Dr. Jose Murickan S. J. and Shri Georgekutty Kareparampil have done a brilliant work in their book "Persons with Disabilities in Society". The authors have very systematically and critically analysed disability as a social problem. Given the magnitude of the disabled throughout the world, it is really a tough task to focus on the specific problems of the disabled, yet the authors have done a commendable job.

Disabled persons have traditionally been stigmatized by society. For long they have been subjected to systematic discrimination and neglect. The persons with disabilities must share the same rights as are enjoyed by all human beings - to care and learn, to work and create, to love and to be loved, and to enjoy as productive partners of society. But they live in societies that have not yet learned to protect their rights and where, too often, they are denied the opportunities and responsibilities that should rightfully be theirs.

The U. N. declaration of observing 1983-1992 as the Decade of the Disabled helped to generate a great deal of awareness about the problems of the disabled world-wide. The government of India joined as a signatory to the Proclamation on the Full Participation and the Equality of People with Disabilities in the Asian and Pacific Region, after the 48th Meeting of the Economic and Social Commission for Asia and Pacific held in Beijing in April, 1992. The period 1992-2002 has been declared as the Asian and Pacific Decade for the Disabled

Persons by the ESCAP. In keeping with the decision of the General Assembly of the UN, the 3rd December has been declared as the World Day for the Disabled in India as well.

The Sample Survey conducted in 1981 estimated 12 million persons having at least one or the other kind of disability. They constituted 1.8 per cent of the total population of India in 1981. No nation, particularly a welfare state like ours, can afford to ignore the needs and urges of such a large population. We have to tap and harness their latent talents and services for our all round and speedy development. There is an urgent need for their early rehabilitation through skill training and income generation by gainful employment. The employers have to be convinced that employing people with disability is not a matter of charity, but a sound economic proposition; for, studies have shown that people with disability not only show dexterity equal to that of their able bodied peers but are often more efficient. The private and public sectors need to be sensitised so that more job opportunities are generated for people with disability.

Despite the fact that rehabilitation facilities for people with disability have improved vastly in the past decade, we are still far behind in reaching out to the 10% of the disabled people in the country as estimated by the World Health Organisation. We are aware of the need to boost the services for people with disability to enable them to get easy access to rehabilitation facilities and economic independence. I am sure the setting up of the National Handicapped Finance and Development Corporation would go a long way to meet the credit requirement of the disabled persons who intend to set up income generating ventures.

While it is essential to provide all enabling facilities and incentives to people with disability, the root cause of disability need to be located, because prevention is better than cure. Immunization, proper pre-natal and post-natal care are very vital for bringing down the incidence of disability in our country. There is an urgent need to create and disseminate awareness on early detection and intervention in order to ensure that impairments do not become handicaps.

The United Nations has adopted rules for providing equality of opportunity to people with disabilities. The Govt. of India are a party to the formulation of these rules and hence it is our international obligation to observe them. We are contemplating to bring soon a

comprehensive legislation to promote equality of opportunities for the disabled in the fields of education, vocational training, employment and social and economic prospects, as well as to prohibit discrimination against any person on grounds of disability in education and employment. The Government would also be establishing a National Trust for the Welfare of the Persons with Mental Retardation and Cerebral Palsy in order to provide them with guardianship and foster care as well as to strengthen and support the welfare programmes of families, foster families, NGOs and the community. The Trust would enable the parents to bequeath their property to it and transfer the guardianship rights of their child to its care and protection.

I congratulate the authors for their arduous and rewarding labour. I am sure their work would prove a comprehensive treatise and a good reference book for the students, scholars, NGOs and the people working in the field of disability.

I also congratulate the UGC and the UNDP without whose assistance it would have been indeed difficult for the authors to come out with their valuable work.



(SITARAM KESRI)

## *Preface*

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The idea of writing a book on the Physically Handicapped emerged out in 1971, 10 years prior to the observance of the International Year of Disabled Persons by the International Community. In that year the authors submitted to the University Grants Commission of India, a proposal for preparing a book entitled 'Society and the Physically Handicapped' under the scheme of writing of university level text books by Indian authors. In 1972 the proposal was approved by the U. G. C. and the work was started in 1973.

Being a book based on secondary sources the authors had to review a wide spectrum of published literature in the field. In this process the authors were confirmed in their conviction that there was a need of bringing out a comprehensive book on the handicapped as the existing works were mostly focussed on particular aspects or specific categories of the disabled.

The manuscript was completed in 1980 and submitted to the U. G. C. In order to examine the manuscript the U. G. C. set up an editorial committee consisting of Mrs. Kamala V. Nimbkar, Editor, Journal of Rehabilitation in Asia, Mr. Lal Advani, Director, National Institute for the Visually Handicapped and Dr. Rajendra T. Vyas, Asia Director, Royal Commonwealth Society for the Blind. On the untimely demise of Mrs. Kamala V. Nimbkar, Prof. S.N. Ranade, Delhi School of Social Work was appointed by the U. G. C. to replace her.

On the basis of the recommendation of the Committee the U. G. C. approved the manuscript for publication in 1982. Since the U. G. C. was not in a position to grant financial assistance, the publication of the book was delayed till at last the United Nations Disabled Persons Unit, Centre for Social Development and Humanitarian Affairs came forward to finance it in 1992.

On the suggestion of the sponsor the title was changed to 'Persons with Disabilities in Society' and the size of the book reduced to two thirds of the original. In this process the authors reviewed the whole manuscript and updated it with the latest information on the subject.

We are much indebted to the University Grants Commission and the United Nations Development Programme for the financial assistance offered for the preparation of the manuscript and for its publication respectively. We express our deep gratitude to all those who helped us in realizing this project, particularly the organizations of and for the disabled, the professionals for their consultancy and the assistants for their secretarial services.

We sincerely thank Shri. Sitaram Kesri, Hon'ble Minister of Welfare for kindly writing the foreword to this book.

We are glad that the publication of the book is undertaken by the Kerala Federation of the Blind and the printing by St. Joseph's Press, Trivandrum.

We would be highly gratified if this work provides inspiration for greater commitment to all those engaged in the service of the disabled in our community and for the better integration of persons with disabilities in our society.

Trivandrum  
1 January 1995

**Dr. Jose Murickan S. J.**  
**Georgekutty Kareparampil**

## *Introduction*

---

More than 500 million people of the world suffer from some form of physical, sensory or mental disability. Often their lives are handicapped by physical and social barriers which hamper their full participation in society and the enjoyment of equal rights and opportunities.

Handicap is a function of the relationship between disabled persons and their environment. It occurs when they encounter cultural, physical or social barriers which prevent their access to the various systems of society that are available to other citizens. Thus, handicap is the loss or limitation of opportunities to take part in the life of the community on an equal level with others.

The problem of disability has an important social dimension in so far as the relationship between the disabled individual and his environment is concerned. More than the physical, sensorial or mental disability, it is the interaction with the environment which determines the effect of disability on a person's daily life. The United Nations and its various agencies have upheld and disseminated this basic principle, the acceptance of which has given new direction to the service for the disabled all over the world. The observance of 1981 as International Year of Disabled Persons has had an accentuating impact. The motto of IYDP "full participation and equality" has opened for the disabled a new horizon of hope. The concern aroused and the actions initiated in various parts of the world gained momentum during the Decade for the Disabled 1983-92. 'The World Programme of Action' concerning the disabled adopted by the United Nations General Assembly on 3rd December 1992 may be described as the 'Bill of Rights of the Disabled'.

The purpose of this Programme is to promote effective measures for the prevention of disability, for rehabilitation and the realization of the goals of 'full participation' of disabled persons in social life as well as development with 'equality'.

Many countries have taken important steps to eliminate or reduce barriers to full participation. Legislation has, in many cases, been enacted to guarantee to disabled persons the right to, and opportunities for, schooling, employment and access to community facilities, to remove cultural and physical barriers and to proscribe discrimination against disabled persons. There has been a movement away from institutions to community-based living. In some developed and developing nations, the emphasis in schooling is increasingly on 'open education' with a corresponding decrease in institutions and special schools. Methods of making public transport systems accessible have been devised together with efforts of making information accessible to sensory-disabled persons. Public education and awareness campaigns have been launched in numerous countries to educate the public to alter its attitudes and behaviour towards disabled persons.

Despite such efforts, equal opportunities for the disabled and the degree of their integration into society remains far from satisfactory in most countries.

This book is conceived as a fairly comprehensive work on the disabled. It deals with the interaction of the disabled with society and society's role in making them full fledged, participating and contributive members through medical care, education and rehabilitation. It analyses the medical, psycho-social, educational and vocational problems of the physically handicapped as well as the process of their rehabilitation keeping their social integration as the main focus. The various services available to the handicapped in India are reviewed and guidelines for future action indicated. It brings together the scattered information provided by specialized authors, journals and study reports on the handicapped into a cohesive and systematic treatise. The categories examined are the orthopaedically handicapped, the blind, the deaf and the speech handicapped. The book offers a sound theoretical base drawn from the most modern and authoritative sources for a better understanding of the problems of the handicapped. It is meant to be a university level text book providing professionally technical and practically useful information concerning the handicapped.

Topics covered by the book include:

- The difficulties the disabled persons encounter in adjusting themselves to their disability and accepting it as a reality in life.

- The process of adjustment of the disabled persons to their disability and to the social situation in which they live.
- The problems faced by the handicapped people in finding their rightful place in society.
- Role of society in integrating the disabled through education and rehabilitation programmes, the method of their implementation and its impact.
- The programmes and services rendered by governmental and voluntary agencies to enable the disabled persons to be fully rehabilitated in society.

The book is organized in three parts. Part I endeavours to analyze disability as a social problem. The magnitude of the problem in terms of numbers, inter-relationships of handicapped and non-handicapped sections of the society, definitions used to identify and categorise handicapped persons, medical as well as social causes of the disability conditions, are dealt with in detail in seven chapters.

The psycho-social aspects of the relationship between society and the disabled have been given utmost importance and comprehensively dealt with. The analysis clearly shows that persons with disabilities are not categorywise a different species; they are as normal as any other human beings. Any apparent difference in their psychological traits, limitation in intelligence or mental ability or deviance in behaviour is the result of their encounter with the environment, physical as well as social.

Part II comprises eleven chapters and deals with the principles and processes of rehabilitation and its medical, educational and vocational dimensions. Education of the four major groups and of the multiply handicapped is dealt with in separate chapters. Social integration of the disabled which is the ultimate goal of all rehabilitation programmes is carefully examined and analyzed in the last chapter of this part.

Rehabilitation programmes and services for the handicapped in India form the subject matter of Part III. Medical, educational, and vocational services as well as various concessions and facilities available to the handicapped in India are briefly reviewed. Guidelines for future action as evolved from the study are suggested in the last chapter of the book.

This book is meant to be a good reference and source material to all those working with the disabled, especially in developing countries like India. It is hoped that this work would provide adequate knowledge and valuable information to all those who are engaged in the development of programmes and services for the disabled regarding their physical, emotional, intellectual and social needs. It will enlighten them on the need for improved medical facilities for early identification, prevention, treatment and physical restoration of the disabled. The importance of better educational services to the disabled in special schools and through integration of disabled children in normal schools is effectively brought out. The need for systematic vocational training and providing remunerative employment to the disabled as a means of ensuring their social integration is emphasised. The authors hope that the book will have considerable impact on the national developmental policies and programmes for the disabled and make effective contribution to the better training of personnel involved in the service of the handicapped as well as to a positive change in the attitude and approach of society towards disabled persons.

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**PART I**

**DISABILITY – A PSYCHO-SOCIAL ANALYSIS**

## CHAPTER I

### **MAGNITUDE OF THE PROBLEM**

Persons with disabilities are those who suffer any kind of bodily impairment that interferes with the normal functioning of one or more of their organs or senses. The nature and extent of the impairment vary with individuals and the physically handicapped are categorised into different groups according to the type and extent of the defect. Based on the organ or sense involved, there are four major categories of handicapped persons: the orthopaedically handicapped or the crippled; the visually handicapped or the blind; the acoustically handicapped or the deaf and the orally handicapped or the dumb.

Physical disability is a deviation from the socially valued bodily characteristics of an individual in a given society. The presence of such individuals and their groups in a society would definitely give rise to special problems that the community at large has to deal with. Failure to cope with those special issues and demands would adversely affect not only the handicapped persons but even the non-disabled section of the community. Therefore a comprehensive study of the physically handicapped in relation to society and its various institutions becomes imperative.

The handicapped person needs to be understood better as an individual, as a member of a specific group, and as a member of the larger society. His attitude towards his own disability, to other disabled persons and to the members of his society as well as the attitude of society towards him are determining factors for the development of his personality and for his integration in society. His participation in the various social institutions through education, vocational training

and employment brings him to the main stream of social life and enables him to contribute to its welfare as a full fledged member. The purpose of this book is to bring out the complexities of this process of the mutual interaction of persons with disabilities and the society in its manifold dimensions.

This chapter attempts to assess the magnitude of the problem as revealed by statistical estimates and to situate it in the socio-cultural context.

## **STATISTICAL ESTIMATES**

### **Global Estimates**

In attempting to estimate the magnitude of the problem we are faced with the dearth and inadequacy of reliable data. No country in the world has succeeded to take a complete census of its physically handicapped population. Very few nations have adopted the system of registration of handicapped persons who are in need of special services. In 1957, the United Nations Rehabilitation Chief, Mr. Kurt Janson observed that about 12 to 13 per cent of the population of any given country suffer from a permanent or long term disability.<sup>1</sup> Surveys carried out in Asia, Europe and North America show that at least 7 to 8 per cent of the population in any given country were affected by permanent and substantial physical disabilities.<sup>2</sup>

Over the last few decades, there has been a considerable increase in the global estimates of the handicapped owing to several factors such as rise in world population, increase in accidents, increased survival rate of premature infants, advancement in pharmacology and surgery, enhanced survival rate of the handicapped, increased forceps trauma, increase in the average expectation of life, increased use of gonadal irradiation by X-rays, atomic irradiation and increase in drug addiction by men and women. R. Freedman observed that based on the difference between the birth rate and the death rate, the world population is increasing at the rate of 20 per thousand per year. With 2% increase, every year 70 million people are added to the existing world population, giving rise to a proportionate increase in the number of the disabled in the world.<sup>3</sup> It means that every year on an average about 2,800,000 such disabled are added to the existing number. According to Freedman the world population of the disabled in 1964 was 140 million. Based on this estimate the total population of the disabled in the world today would be 218.4 million.

The world population estimate of the disabled by U. N. expert Kurt Janson is still taken as a basis. The world population in 1991 was 4,439 million.<sup>4</sup> Therefore the present estimate of the disabled population would be 532.68 million to 577.07 million.

The World Programme of Action Concerning Disabled Persons adopted by the U. N. General Assembly in 1982 recognised the importance of statistics on disabled persons as a foundation for policy planning, implementation, monitoring, analysis and research. It emphasised that the member states should develop a programme of research on the causes, types and incidence of impairment and disability, the economic and social conditions of the disabled persons, and the availability and efficacy of existing resources to deal with these matters. It urged the statistical office, together with other units of the secretariate, the specialized agencies and regional commissions to co-operate with the developing countries in evolving a realistic and practical system of data collection based either on total enumeration or on representative samples, in regard to various disabilities. This would enable them to prepare technical manuals/documents on how to use household surveys for the collection of such statistics, to be used as essential tools and frames of reference for launching action programmes in the post-IYDP years with a view to ameliorating the condition of disabled persons.<sup>5</sup>

In response to the recommendations of the World Programme of Action concerning data collection and research on disability and disabled persons, the statistical office of the U. N. Department of International Economic and Social Affairs and Centre for Social Development and Humanitarian Affairs conducted case studies in five countries – Egypt, Iraq, Jordan, Lebanon and the Syrian Arab Republic – in 1983. The purpose of the study was to test the widely held assumptions that there are few data available for the study of disability in developing countries and that those data which are available are too complex, unreliable or incomplete to be useful. The objectives of the study were:-

- (a) to examine in each country the usefulness of existing data for estimating the prevalence and distribution of disability and its social and health consequences;
- (b) to develop and test techniques for utilizing national population census and survey data to provide indicators of disability and its determinants, characteristics and consequences, and of prevention and rehabilitation;

- (c) to examine methodological issues in the collection, dissemination and interpretation of disability statistics with a view to developing improved methodologies potentially applicable in all countries interested in the development of disability statistics, nationally and internationally.<sup>6</sup>

The following Tables give data for two of the five countries mentioned above.

**Table I**

**NUMBER OF IMPAIRED PERSONS PER 100,000 POPULATION, BY TYPE OF IMPAIRMENT AND SEX; URBAN / RURAL; EGYPT, 1960 AND 1976**

Type of impairment	1960						1976					
	Urban		Rural		Total		Urban		Rural		Total	
	M	F	M	F	M	F	M	F	M	F	M	F
<b>Sensory</b>												
Blind	251	220	392	465	338	373	84	53	124	83	106	70
Loss of sight in an eye	351	322	763	492	588	428	75	26	80	22	78	23
Deaf & Mute	59	44	90	58	78	53	68	32	30	12	46	20
Deaf	...	...	...	...	...	...	26	9	16	6	20	7
Mute	...	...	...	...	...	...	11	5	15	5	13	5
<b>Physical</b>												
Amputation of:												
one or both hands	36	7	44	11	41	9	22	3	42	3	33	3
one or both legs	52	9	48	15	50	13	29	3	26	4	27	3
<b>Mental</b>												
Mental retardation	...	...	...	...	...	...	51	14	16	7	32	10
Other	...	...	...	...	...	...	105	20	76	13	88	16
<b>Total</b>	749	602	1311	1040	1095	876	471	164	424	154	445	158

Source: Egypt, Department of Statistics and Census, 1960, Census of Population Central Agency for Public Mobilization and Statistics, Population & Housing Census, 1976.<sup>7</sup>

**Table II**

**NUMBER AND PERCENTAGE OF PERSONS WITH PHYSICAL IMPAIRMENTS; LABANON, 1981**

Type of physical impairment	Number	Percentage of impaired persons having the impairment
<b>Group I</b>		
<b>Sensory</b>		
Blind	1,576	8.6
Blind only	1,266	6.9
Deaf	2,720	14.8
Deaf only	317	1.7
Mute	4,434	24.2
Mute only	2,010	11.0
<b>Amputation</b>		
Loss of limb	1,051	5.7
Loss of limb only	979	5.3
<b>Combinations of the above</b>		
Deaf-mute	2,208	12.0
Blind-mute	90	0.5
Blind-deaf	70	0.4
Blind-deaf-mute	106	0.6
Other types of combinations	72	0.4
<b>Group II</b>		
Paralysis	6,852	37.4
Paralysis only	4,962	27.1
Rheumatism	2,130	11.7
Rheumatism only	700	3.8
Deformity	2,079	11.4
Deformity only	813	4.4
Other physical	1,353	7.4
Other physical only	542	3.0
Combinations of Group II	2,457	13.4
<b>Total number of impaired persons</b>	<b>18,321</b>	

Source: Lebanon, Office of Social Development, Department of welfare for the Handicapped, Centre of Social Training, Committee for the Enumeration and Classification of Handicapped in Lebanon, Survey for the Enumeration and classification of the Handicapped in Lebanon, 1980-1981 Final Report pp. 15-24; Hashem Husseini and Marwan Hour.<sup>8</sup>

## Estimates in India

During the period 1957 to 1967 several sample surveys were conducted in different parts of India which throw light upon the magnitude of the problem in this country.

A random sample survey conducted on behalf of Central Advisory Council for the Education of the Handicapped by the All India Occupational Therapists' Association in Bombay during 1957 was the first among them. A total of 430 families was visited but data were available for only 319 of them. A total of 2326 disabled persons were identified according to the following categories:

Blind or visually handicapped	83	(3 had only a speech defect)
Deaf	44	
Deaf mute	28	
Dumb	10	
Orthopaedically and neurologically handicapped	126	
Mentally ill and mentally retarded	55	

The survey gave a rate of 3.5 handicapped persons per 1000 of the general population: 0.9 visually handicapped, 0.4 deaf, 0.4 deaf-mute and dumb, 1.36 orthopaedically and neurologically handicapped, and 0.6 mentally ill or mentally retarded.<sup>9</sup>

In 1957 a sample survey of the physically and mentally handicapped persons was conducted by the Delhi School of Social Work in Greater Delhi area at the request of the Central Government. The sample population used was the 209 households found to have at least one handicapped member out of 113,853 such households surveyed earlier by the Delhi School of Economics. The total number of handicapped persons studied was 221.

The percentages in the different categories were: blind 38%; mute 6.33%; persons with other physical handicaps 25.33%; mentally handicapped 12.66%; and persons with multiple handicaps 7.70%.<sup>10</sup>

On the basis of the Bombay sample, the Director General of Employment for the Central Government estimated in December 1959 that there was a total of 8,832,000 handicapped persons in India. This would come up to 2.3% of the Indian population of 1956. The Delhi survey projected a total of 13,440,000 for the same year which works up to 3.5% of the Indian population.<sup>11</sup>

The Director of the institute of Social Sciences at Agra University organized a sample survey of the handicapped in Kanpur. A random sample of 2% of the houses in the area was covered by the interviewers. Out of 523 persons interviewed, 514 had one handicap and 9 had two handicaps, providing a total of 532 handicaps. The largest number of handicaps was orthopaedic (231 or 44%), followed by blindness (174 or 33%). Nearly half the handicaps were found in youngsters upto 18 years of age; in fact, a third of them came in the age group below 12 years.<sup>12</sup>

In 1963-64 the Association of the Physically Handicapped, Bangalore, conducted a survey of handicapped persons. The study included 184 orthopaedically handicapped persons—146 males and 38 females. The study revealed a high concentration of disabilities in the age group 11 to 15 (44 persons or 24%) for both males and females. 101 persons (55%) were below 25 years of age and 33 (18%) in the 16 to 20 age group.

In 1960, The Central Advisory Council for the Handicapped sponsored a survey of a smaller community in the village of Kelod with a total population of 5,000, about equally divided between males and females. Half the population had one or more defects or chronic diseases. About 7% of the disorders and defects were found to be congenital in origin. Diseases and defects of the eye had high incidence.

#### Rate per 1000 population

Blind and visually handicapped	8.00	
Orthopaedic and neurological	6.40	
Deaf (plus deaf and mute)	5.90	(80 db and above)
Minor speech defect	1.40	

The overall incidence of the physically handicapped was reported to be 21.7 per 1,000.

A survey of the physically handicapped in Maharashtra State in both rural and urban areas, was conducted during 1960-61 by the Director of the Bureau of Economics and Statistics. The field work consisted of interviews by the trained investigators of the Bureau of a selected sample of households from the coastal, inland, inland central, and inland eastern districts, including 288 villages and 192 urban blocks in Maharashtra State.

It was estimated that out of a total of 7,027,594 households in the State, there were about 77,000 households having at least one physically handicapped member. Of these, 70,000 or about 90% were rural households.

The figures estimated for the various categories of the handicapped were:

Blind	:	28,000 (35% of the total physically handicapped)
Deaf	:	10,000
Dumb	:	10,000
Lame	:	12,000
Leprosy affected	:	20,000
Crippled	:	4,700

The Nagpur Association for Rehabilitation of Children with orthopaedic disabilities (NARCOD) undertook a survey in 1966. It included 42 wards of the city of Nagpur comprising 11% of the population. The medical screening of pupils in 25 primary schools provided the following data on types of handicaps discovered.<sup>13</sup>

Orthopaedic and Orthoplastic	39
Poor vision and conditions leading to visual defects	147
Poor hearing and conditions leading to hearing defects	129
Speech defects	146
Dental Defects	22
Poor school progress	54
Poor health due to other reasons	53
Total	590

A 1966 estimate indicated the number of children between 6 & 14 years of age in the country as a whole as follows:

Blind	447,000
Deaf	223,500
Orthopaedically handicapped	500,000
Mentally Handicapped	1,500,000 to 1,800,000

In 1967, the rehabilitation unit of the Medical College, Trivandrum, in collaboration with the Loyola College of Social Sciences, Trivandrum, conducted a census survey of the handicapped in Trivandrum city.<sup>14</sup> It revealed that out of a total population of 3.8 lakhs, 4,800 were disabled.

**Table III**

**DISTRIBUTION ACCORDING TO TYPE OF  
DISABILITY AND SEX**

<b>Disability</b>	<b>Persons</b>	<b>Male</b>	<b>Female</b>
Mental Retardation	161	85	76
Blindness	495	216	279
Deafness	264	135	129
Disorders of speech	193	138	55
Paralysis	425	212	213
Deformities	523	328	195
Chronic diseases	2,255	1,094	1,161
Combination of disabilities	335	170	165
<b>Total</b>	<b>4,651</b>	<b>2,378</b>	<b>2,273</b>

Taylor & Taylor (1970) observed that while estimates of the numbers of handicapped persons vary, there is usually closer agreement on the number of the blind than on others as indicated by figures provided by two Government sources.

Blind	4,000,000	4,000,000
Deaf	1,250,000 to 1,500,000	2,000,000
Orthopaedically handicapped	2,500,000 to 3,000,000	3,000,000 to 14,000,000
Mentally handicapped	4,000,000 to 10,000,000	6,000,000 to 10,000,000

In 1974 a comprehensive survey of physically handicapped was conducted by the Revenue Department of the Government of Tamilnadu. The survey revealed that there were about 2,53,000 physically handicapped persons including orthopaedically handicapped, blind and deaf.<sup>15</sup>

The 1981 census had collected information on totally blind, totally crippled and totally dumb persons but did not cover other disabilities.

According to the survey the disabled population in India was 1,118,948.<sup>16</sup>

<b>Category</b>	<b>Urban</b>	<b>Rural</b>	<b>Total</b>
Blind	54,350	424,307	478,657
Crippled	58,960	304,640	363,600
Dumb	36,237	240,454	276,691

During the International Year of Disabled Persons the Ministry of Social Welfare, Government of India took the initiative to survey the extent of disability in India. At the Ministry's request, the National Sample Survey Organisation conducted a countrywide Sample Survey on disabled persons to arrive at reasonably accurate estimates of the incidence and prevalence of disability in the country.

The survey covered almost the entire area of the country including 5,409 sample villages and 3,652 urban blocks. All the States and 5 Union Territories participated in the survey. The survey covered 3 types of disabilities viz., visual disabilities, communication disabilities and locomotor disabilities.

The survey arrived at an estimate of 12 million persons having at least one or other disability which constituted about 1.8% of the total population of 680 million.<sup>17</sup> About 10% of those physically disabled are reported to have more than one type of physical disability. Considering each type of disability separately, those having locomotor disabilities constituted the maximum number (5.43 million) followed by those with visual disabilities (3.47 million) and hearing disabilities (3.02 million) and speech disabilities (1.75 million).

The distribution of the total disability by type of disability and by their rural, urban and sex-wise break up is given in the following Table:

**Table IV****NO. OF PERSONS DISABLED (in 000's)**

Type of disability	Total	Rural	Urban	Male	Female
Locomotor	5,427	4,342 (80.00)	1,085 (19.99)	3,493 (64.36)	1,934 (34.64)
Visual	3,474	2,908 (83.71)	566 (16.29)	1,442 (41.51)	2,032 (58.49)
Hearing	3,019	2,477 (82.05)	542 (17.95)	1,654 (54.79)	1,365 (45.21)
Speech	1,754	1,366 (77.88)	388 (22.12)	1,125 (64.14)	629 (35.86)
Physical (at least one of the above)	11,939	9,672 (81.01)	2,267 (18.99)	6,796 (56.92)	5,143 (43.08)

It may be seen from the above that, (i) prevalence of disability was more in the rural areas (about 81%) than in the urban areas (about 19%), (ii) that it is more among males (57%) than among females (43%).

The survey also estimated the number of persons who became disabled during the year preceding the date of the survey as follows:

**Table V****NO. OF DISABLED (in 000's) DURING THE YEAR PRECEDING THE DATE OF SURVEY**

Type of disability	Total	Rural	Urban
Locomotor	366	279	87
Visual	249	201	48
Hearing	106	85	21
Speech	25	18	7

It may be seen from the above that the incidence of the disability in the preceding year constituted 6.4%, 6.9%, 3.4%, 1.3% in the rural areas and 8.0%, 8.5%, 3.9%, 1.8% in the urban areas respectively of the total prevalence of locomotor, visual, hearing and speech disabilities.

## **SOCIO-CULTURAL ASPECTS**

### **Impairment, Disability and Handicap**

A distinction may be made between the 3 concepts: impairment, disability and handicap.

Impairment is a permanent or transitory psychological, or anatomical loss and/or abnormality; for example a missing of effective part, tissue, organ or "mechanism" of the body such as an amputated limb, paralysis after polio, myocardial infarction, cerebrovascular thrombosis, restricted pulmonary capacity, diabetes, myopia, disfigurement, mental retardation, hypertension, perceptual disturbance.

Disability: Impairment may cause functional limitations which are the partial or total inability to perform those activities necessary for motor, sensory, or mental functions within the range and manner of which a human being is normally capable such as walking, lifting loads, seeing, speaking, hearing, reading, writing, counting, taking interest in and making contact with surroundings.<sup>18</sup> A functional limitation may last for a short time, a long time, be permanent or reversible. It should be quantifiable whenever possible. Limitations may be described as "progressive or regressive". Disability is defined as an existing difficulty in performing one or more activities which, in accordance with the subject's age, sex and normative social role, are generally accepted as essential, basic components of daily living, such as self-care, social relations and economic activity. Depending in part on the duration of the functional limitation disability may be short-term, long-term or permanent.

Medically, disability is physical impairment and inability to perform physical functions normally; legally, disability is a permanent injury to body for which the person should or should not be compensated.

The disability can be divided into 3 categories depending on the duration:

(i) Temporary total disability is that period in which the affected person is totally unable to work. During this time he may receive orthopaedic, ophthalmological, auditory or speech or any other medical treatment.

(ii) Temporary partial disability is that period when recovery has reached the stage of improvement so that the person may begin some kind of gainful occupation.

(iii) Permanent disability, applies to permanent damage or loss of use of some part/parts of the body even after the stage of maximum improvement by medical treatment has been reached and the condition has become stationary.

A handicap arises from the cumulative effects of the disability and the personal and social consequences which have a detrimental effect on the individual's functional level.<sup>19</sup> The effect of a person's physique on his behaviour is more indirect than direct, being mediated via social evaluation, and the individual's response to this cultural judgement.<sup>20</sup> There is no one to one relationship between disability and handicap. A physical disability is a deviation from the socially accepted norms of bodily characteristics. It consists of the objectively defined impairment of structure and function. This deviation though primarily physical in nature has its repercussion on the individual and the society in which he lives because the handicapped individual cannot fulfil many of the tasks in the socially accepted manner. In other words, physical deviation leads to deviant behaviour. The individual is faced with adjustment problems. His feeling of inadequacy and anxiety combined with insecurity and frustration results in certain extreme modes of behaviour such as withdrawal, introversion, aggressiveness etc. Whether or not these unhealthy feelings, behaviours and personality maladjustment would take place in the case of a particular individual will depend on the society's attitudes and behaviour toward him.

## **Disability and Personality disorganisation**

The individual is the microcosm of the social macrocosm, a small part of a large whole. The individual is socialized in the course of his growing up and in the process achieves the status of a person.<sup>21</sup> The person's life organisation may be defined as that pattern of attitudes, values, purposes, goals and roles which grow out of his social experience and through which consciously or unconsciously, he hopes to make his life meaningful. These rules are the embodiment of a given person's norms and values. In deviating from the expected group behaviour the deviant may weaken the group ties and thus cause social disorganisation. The person who consistently deviates from many group norms becomes disorganised himself.

The average individual has a strong emotional need to participate in a number of groups. From infancy on, he is continually

striving to attain the security that comes from such status. His position in the family, his adjustments to his peer groups, his heterosexual development, all reflect the desire to belong to different groups and occupy a desirable status in each. Any situation threatening his position in a system of inter-personal relations brings about anxiety, which in turn produces individual disorganisation. When personal disorganisation becomes intensified, this anxiety is often so acute that the individual expresses it in certain undesirable behaviour.<sup>22</sup>

### **Anxiety and Deviant behaviour**

The deviant individual is more vulnerable to anxiety than the average person. He is more threatened by the ordinary demands of his culture. High levels of anxiety resulting from such threats reduce his ability to cope realistically with his environment, and he tends to react impulsively, compulsively, rigidly, constrictedly, and fragmentarily. Such reactions result in a high incidence of socially inappropriate self-defeating, and blind-alley solutions to many of life's problems. The individual develops defenses which unnecessarily restrict his activity, maintain his aspirations at a low level, and induce a minimal self definition. The defense mechanisms serve to minimise the threat of failure and reduce anxiety.

The stigmatised individual sometimes tries to "pass" as normal, sometimes he withdraws from competition, and sometimes he becomes either defensive or aggressive concerning his stigmatising characteristic. All of these reaction patterns are likely to be accompanied by status anxiety.<sup>23</sup>

### **Disability and Self concept**

A person's level of aspiration is intimately related to his self-concept. The kind of a person he considers himself to be is an important determinant of what he thinks he is capable of doing, what he expects himself to do, and what he tries to achieve. A person's self-concept is, in turn, largely a product of other people's evaluations of him. <sup>24</sup>

One's general culture, the important groups of people in one's life and even the significant people with whom the developing self is in contact, all contribute something to one's self-concept. Individuals can be more handicapped by their self-concept than by the disability itself.<sup>25</sup>

The problem of establishing realistic levels of aspiration in the social, personal adjustment, educational and occupational areas is much more complex. It not only involves the individual himself, particularly his self-concept but also his family, school and community – indeed his whole society. The point of crucial impact of all these social influences is the individual's self-concept, which is largely a distillation of other people's evaluations of him. Each person comes to conceive of himself as adequate or inadequate as he sees himself reflected in the evaluations of others.<sup>26</sup>

Because so many disabled people's lives tend to revolve around their disabilities rather than their abilities, their self concepts are often unrealistically low. Consequently their self expectations, levels of aspiration, and general motivational levels are unnecessarily diminished. Recognising this fact, many people are motivated and encouraged by others to deny the fact of their disability. When an entire culture puts a high premium on a given ideal state, there is a great deal of reinforcement of behaviour which conceals, minimizes, or denies the existence of deviations from that ideal.<sup>27</sup> To associate with the normal on their own terms, to act normal, to compete with the normal, then becomes the ideal pattern of one's life. The person with a disability observes that the rewards in this world go, not to the person who accepts those limitations which are seemingly dictated by his condition, but to the individual who either refuses to accept the disability as a handicap or who strives for the cultural ideal in spite of his condition.

## **Disability and Social isolation**

The 'self-feeling' related to the inadequate assumption of expected responsibilities operates in a vicious circle. The person who is chronically anxious about his role tends to be inadequate in his performance which further increases his anxiety.

Handicapped individuals often tend to be isolated with regard to their social contacts. Status in the family, neighbourhood and the work group is important, and for many, the possibility of achieving or maintaining such status is impaired.<sup>28</sup>

The individual feels isolated if he is not a part of things. This isolation reflects social disorganization that has taken place in the past and is still going on. The isolated person suffers from a lack of those relationships which are at once primary, personal and emotional. Secondly, impersonal and rational relationships exist on all sides but

these apparently fail to provide the satisfaction so necessary for personal stability.

Social isolation and individual disorganization operate in an augmenting and reciprocal fashion.<sup>29</sup> The maladjusted individual produces further social maladjustments. No one lives in a social vacuum and each person influences others; that is, each acts on the other and in the process both become more pronounced. The person who is unable to assume his roles properly sets up a chain reaction of social disorganization. Each person interacts with others, notably with the members of his family and his immediate associates. Thus the lonely and introverted child may develop a rich fantasy life to compensate for his lack of intimate contact with his parents and playmates.

### **Disability and Limited life experiences**

The person with a disability is more likely to engage in fewer and simpler activities and to function in a more limited area. Hence the life experiences of handicapped persons are limited. This disadvantage combined with higher levels of anxiety often result in a decreased flexibility of behaviour and ideation and a less coherent approach to life situations. This restriction is dictated partially by the nature of his disability, but it is also partially the result of social attitudes and cultural expectancies. When a child has many things done for him, when he does not have to use his own initiative, and when his social relations are limited and stereotyped, he has less opportunity and motivation for free and adventuresome ideation and activity. When a child, disabled or not, gets used to more simplified and easier approaches to life's problems, he is not motivated to master the complexities of a more expanded world.

The limitation of experiences imposed by disability is an index of the degree to which society has devised and provided compensatory educational, vocational and social experiences for these people. There is considerable evidence that the social and personal compensatory and restrictive mechanisms available to the disabled child are often either underestimated or neglected. The result is that the secondary handicaps become greater than the basic disability requires.<sup>30</sup>

### **Disability, Deviation and Society**

Deviancy is not a problem that resides solely in an individual; rather it is an event that occurs in a given family, community,

sub culture and society. Deviancy can be understood only with reference to the social reactions it evokes and its meaning to the individual deviant. Just as people with different stigmas must face similar problems and adjust to them in similar ways, the problems of a family with a disabled is an instance of a universal experience, i.e. how the family copes with unexpected disappointment and trauma. Family crises, frustrated ambition, and occasional high levels of stress are experiences common to most families. The behaviour of the deviant is shaped by the actions and attitudes of others. The adjustments of the family of a disabled child can either limit and distort or encourage and facilitate the child's potentiality for growth.<sup>31</sup>

When working with the handicapped, it is easy to focus attention so completely on the defective individual that we forget he is a member of a family and that the family may be as much a casualty as is the handicapped member. The dominant cultural patterns of society, the sub-culture in which the individual has membership, and the local community where he resides - all have their impact on the handicapped individual.

## **Reactions to Disability**

Some of the more common reactive patterns to the advent of a defective child into a family are: realistic coping with the problem; denial of the reality of the handicap; self-pity; ambivalence toward or rejection of the child; feelings of guilt, shame and depression; and patterns of mutual dependency.<sup>32</sup>

The presence of a handicapped child in the family constitutes an additional stress. Defensive reactions are likely to occur more often and to a greater degree in such families than in families where all members are reasonably normal. There are powerful social and personal forces motivating a parent to deny evidences of the disability of the offspring. The cultural stereotype of the ideal child, the parents' expectation that their offspring will successfully play the roles that society and his parents assign to him, the parents' hopes that their child will attain or surpass their own accomplishments - all these contribute to their "it just - can't be so" reaction when the child is apparently defective. Because parents identify themselves with their children, participate in their successes and failures, bask in their reflected glory, and are belittled by their shortcomings, they inevitably experience a loss of self esteem when one of their offspring is less than expected. A defect in the child is partly that of the parent.<sup>33</sup>

The non-disabled majority tend to maintain a certain social distance, often treating the disabled as outsiders. Many normal people feel uncomfortable in the presence of a disabled individual. They find it very difficult to accept and mingle with the disabled as they do with other people, and since they have the greater prestige and power, they can restrict the opportunities of the handicapped. The handicapped are often forced either to associate with each other or become socially isolated. They are frequently segregated— physically, psychologically and socially. The disabled person, sensing social discrimination gravitates to his own kind who can accept him without reservation. And he resents his group identification even though he feels more comfortable there.<sup>34</sup>

### **Disability and Social stigma**

This defensive mechanism on the part of the disabled is the result of social prejudice, discrimination, segregation and overall stigmatisation. The terms “prejudice”, “discrimination” and “segregation” are related but not similar. Prejudice is a pattern of hostile attitude by which an individual is placed in a particular category and judged accordingly. Discrimination refers to overt acts committed against individuals and minority groups because of the prejudice of the dominant minority. Segregation is a special form of discrimination whereby the minority group is denied access to such institutional facilities of the larger society as schools, hotels, restaurants, recreational facilities and transportation. Prejudice is thus a state of mind where discrimination and segregation are specific acts or series of acts. Prejudice is the root of discrimination and segregation and provides the major motivating force for stigmatization.<sup>35</sup>

Discrimination implies, denial of opportunity, unequal treatment, and exclusion from the main channels of economic and social life.<sup>36</sup> It is in the economic sphere that discrimination against the physically handicapped is found to be more overt and serious. Their economic security is often threatened by the frequent refusals of work opportunities in many areas of employment. It is an observed fact that handicapped persons who are economically independent are more accepted in society than the dependent ones. While it is true that the vocational outlets for the disabled may be realistically circumscribed, the restrictions are often extended to areas where the limitations are not inherently confining. Unrealistic requirements close the doors of employment to many of the disabled.

The social effects of physical disability tend to create social distance between the disabled and their families on the one side and the community on the other. This distance is often expressed by the non-acceptance of the handicapped in social functions, religious services, educational programmes, work places, marital relationships leading to social and economic isolation. This may often result in non-social, and even anti-social attitude on the part of the disabled.<sup>37</sup>

Segregation of handicapped persons for the purposes of education, vocational training and protection should not be considered as manifestations of prejudice. Nevertheless such segregated training programmes deprive the disabled persons of the opportunity of mingling with the larger society and of getting full acceptance in the community. Increased acceptance of the principle of integration in the rehabilitation programme for the physically handicapped is bound to bring about this new orientation.

### Footnotes

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25. Ibid. p. 36.
26. Ibid. p. 40.
27. Ibid.
28. S. D. Gokhale, op.cit. p. 213.
29. Ibid.
30. Charles W. Telford, James M. Sawrey, op. cit. p. 37.
31. Ibid. p. 97.
32. Ibid. p. 101.
33. Ibid. p. 102.
34. Ibid. p. 46.
35. S. D. Gokhale, op. cit. p. 211.
36. Kenneth Jernigan "Blindness-Discrimination, Hostility & Progress" - *N. A. I. B. Second All India Convention of the Instructors of the Blind*, May 25 to 28, 1968.
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## DEFINITIONS

The terms physically disabled and physically handicapped refer to those members of the community who have some physical limitations. Several authors have attempted to define these terms in different ways based on different criteria. Similarly various countries have adopted definitions differing from one another. Kamala V. Nimbkar observes that the term 'handicapped' varies in meaning and significance, not only in different countries but within any one country, according to the purpose for which the definition is applied or for which it is desired to classify such persons.<sup>1</sup>

The reasons for these differences are the following:

- (i) There is no clear-cut demarcation between the so-called "able bodied" and "disabled".
- (ii) The title "disabled" conceals behind it a loosely connected heterogeneous group of many disabilities, which affect different individuals in different ways. Their range varies from a slight and partial disability like the amputation of a finger, which may have no effect at all on the routine life of an individual, to the most severe and total disability, like complete blindness or the loss of both extremities, which produces pronounced changes in the pattern of life and work of the individual.
- (iii) Definitions of disability have been introduced for various purposes and, as such they have been based on various criteria. No single standard, therefore, exists in the world in order to evaluate disability.

Usually the terms physically disabled and physically handicapped are used interchangeably. But strictly speaking these two terms have specific meanings: "In modern rehabilitation, a physical disability is considered to be an impairment of an anatomical nature, which may, or may not, constitute a handicap. A handicap is the combined effect of physical, mental and environmental obstacles caused by the disability." <sup>2</sup>

There are several definitions of physically disabled. We shall enumerate them under four heads: viz., Medical, Educational, Vocational and Sociological.

1. **Medical.** A physical handicap refers to human limitations, irrespective of whether disability is attributable to disease, injury or inheritance. "Whatever may be the cause, physical disability will lead to a limitation of physical function, whether locomotor, sensory or affecting special organs." <sup>3</sup>
2. **Educational.** A child may be considered handicapped, if his physical condition prevents full participation in childhood activities of a social, recreational, educational and vocational nature. <sup>4</sup>

Handicapped children are those between the ages of three and eighteen belonging to those groups which are blind, partially seeing, deaf, hard of hearing, orthopaedically handicapped (including cerebral palsied) and mentally deficient (or retarded), who require special educational facilities.

3. **Vocational.** A disabled person is one who, on account of injury, disease or congenital deformity is substantially handicapped in getting or keeping suitable employment or work. <sup>5</sup>

The Vocational Rehabilitation Act, 1954, U.S.A., defines a physically handicapped individual as "One who is under a physical or mental disability which constitutes a substantial handicap to employment, but which is of such a nature that vocational rehabilitation services may reasonably expect to render him fit to engage in a remunerative occupation." <sup>6</sup>

4. **Sociological.** According to Dr. Kessler, "The definition of physical handicap must be necessarily social and economic rather than medical or anthropological. It defines the status of the individual in society." He adds: "For our purpose, we shall confine our

interpretation of the term to those individuals who have a physical defect, obvious or hidden, which limits their physical capacity to work or evokes an unfavourable social attitude.”<sup>7</sup>

The Dictionary of Sociology defines a handicapped person as “possessing a physical defect which reduces one’s efficiency in performing one’s personal and social obligations according to a socially determined standard. Since the degree of defect and the test of social adequacy vary with the individual and the community, no hard and fast definition of handicapped is possible.”<sup>8</sup>

The term physically disabled includes different categories of physical deformities or limitations. They can be broadly divided into two: (1) orthopaedically handicapped, (2) sensorily handicapped. The sensorily handicapped consists of the visually handicapped or the blind, the acoustically handicapped or the deaf and the speech handicapped or the dumb. Each of these categories has a number of sub-groups depending on different criteria. They will be detailed in the next chapter.

### **Orthopaedically Handicapped**

The Orthopaedically Handicapped are those who are disabled by impairments, which interfere with the normal use of limbs, bones, muscles or joints, resulting in difficulties in physical movements such as walking, co-ordination, and speech. This may be caused by disease, accident, or ailment of the locomotor apparatus. Such a heterogenous category of disability includes individuals who are alike in being below average in physical ability. Beyond this, their similarities become fewer and fewer because of the wide variety of disabling conditions that occur.

Within this broad classification of the orthopaedically handicapped we will find an infinite variety of degrees and types of handicap from a slight deformity in the forearm or an amputated little finger to a state of incapacity of all the four limbs and poor control of the head and neck muscles. There are those who have a slight limb and those who are paralysed from the waist down and have no control over their lower limbs except by the use of their back and abdominal muscles when the legs are in braces.<sup>9</sup>

Though cerebral palsy is basically a neurological condition, it is usually included among the orthopaedic defects and is ordinarily so

classified for educational purposes. This is because of the severe nature of the physical involvement in cerebral palsy.

### **Visually Handicapped or the Blind.**

The term "the visually handicapped" includes all persons handicapped of vision, ranging from total blindness to useful sight. The dictionary meaning of the adjective "blind" is "sightless", that is, one without sight. Literally this was true in the ancient world. But it is no more so in modern society. Today there are included among the blind not only those within the dictionary definition, but also a very large number of persons whose sight is so restricted that it constitutes not only a visual disability but also an economic liability. This places within the modern category of the blind a seemingly increasing number of persons, and establishes blindness as a major social problem which even in this day is not intelligently understood or efficiently handled.<sup>10</sup>

The medical definition of blindness is "absolute sightlessness, congenital or adventitious". Popularly it implies that condition in which sight is so diminished that any occupation requiring the use of the eyes is out of the question.

According to economists, blind is "one without sight sufficient to achieve economic independence, so that the person afflicted cannot engage in any occupation requiring the use of the eyes under ordinary conditions". From the economic point of view, blindness means "being without sight as a means to economic independence"; and from the social standpoint, "blindness means being without sight, as a means of holding one's own in society".

From the educational point of view, blindness means "inability to acquire education in the usual way by means of sight" or the inability to read the ordinary ink-print book after corrections and refractions have been made by the use of glasses.<sup>11</sup>

The American Medical Association defines blindness in two ways, one for general purposes and the other for economic and employment purposes. For the general purposes, it defines total blindness as "inability to perceive light, or lack of light perception", while economic blindness is defined as "absence of ability to do any kind of work, industrial or otherwise, for which sight is essential".

Great Britain has two definitions for blindness, one for the adults and the other for children. An adult blind is one who is "so blind

as to be unable to perform any work for which eyesight is essential". Children are considered sightless if they are "too blind to be able to read the ordinary school books used by children". In Germany "any person who, with the help of suitable glasses cannot find his way in strange places or cannot count outstretched fingers at a distance of one metre", is considered blind.<sup>12</sup>

According to Berthold Lowenfeld, the visual impairment covered by the term blindness extends from total blindness to a visual acuity defined as follows: "Central visual acuity of 20/200 or less in the better eye, with correcting glasses; or central visual acuity of more than 20/200 if there is a field defect in which the peripheral field has contracted to such an extent that the widest diameter of visual field subtends an angular distance no greater than 20 degrees". The Snellen Chart measurement of 20/200 indicates that an object that can be perceived by the normal eye at a distance of 200 feet must be brought close to 20 feet in order to be discerned by the visually handicapped person. The specified field defect means that the eye when focussed at reading distance discerns clearly no more than the area of about an ordinary book page, although in this limited field of vision the eye may have anything up to normal central visual acuity. Any person who has either a loss of visual acuity as above defined, and estimated by medical authorities as an 80% loss, or a field defect of such serious nature, is considered as blind for economic purposes.<sup>13</sup>

The first ophthalmologist who succeeded in establishing a scientific measurement of visual acuity was the Dutch Doctor Herman Snellen.

It is now being recognized that defining blindness in terms of ophthalmic measurements, even when most scientifically determined, is not always accurate or fair. In the first place, a measurement of visual acuity attained on the basis of the Snellen Chart is not adequate, a fact which Dr. Snellen pointed out, for that formula applies chiefly to distant vision and is more accurate in the upper range of sight. In many cases, near vision is the critical factor, certainly for admission to schools for the blind. In arriving at an acceptable definition, near vision must be given the same scientific consideration that is now given to distant vision.

A second factor that must not be overlooked is the ability of a person to use his residual sight, or visual efficiency. Too many visually

handicapped persons are classified as blind on the basis of the Snellen tests who by "using their brains" need not be considered blind. "A first class brain can make very good use of an imperfect eye." A third factor that is fundamentally related is the need of more consideration of the kind of work that can be successfully performed with limited vision. More effort to find such fields of occupation might considerably reduce the number now considered economically blind. The wide variance to be found in these human factors militates against the effectiveness of determining blindness by ophthalmic measurements and calls for a more flexible type of definition.<sup>14</sup>

As Gabriel Farrel points out in working toward an adequate definition of blindness, consideration must be given to: (1) the actual amount of residual sight in terms of both distant and near vision; (2) the extent to which it can be used without detrimental effects; (3) the ability of the person to use efficiently his remaining vision; and (4) the amount of sight that is essential for the person involved to earn his livelihood or to acquire an education. These requirements presume that every provision for sight restoration or correction has been explored and exercised. Perhaps no one definition of blindness can ever be adequate and the recommendation of the American Medical Society in 1933 that there be several definitions may have to be accepted.

The World Council for the Welfare of the Blind at its Assembly in Paris in August 1954, after careful consideration of the need for uniformity, proposed three criteria for defining blindness: (1) total absence of sight; (2) visual acuity not exceeding 3/60 or 10/200 in the better eye with correction; and (3) serious visual limitations up to an arc subtending 20 degrees. The Council stressed the 3/60 requirement as basic and members were instructed to urge their governments and agencies to adopt that as an important first step.

The definition of blindness accepted by Government of India for award of scholarships is as follows:-

- (a) Total absence of sight;
- (b) Visual acuity not exceeding 6/60 or 20/200 (Snellen) in the better eye with correcting lenses;
- (c) Limitation of the field of vision subtending an angle of 20 degrees or worse.

## Acoustically Handicapped or the Deaf

In common parlance the term 'deaf' is used to refer to two groups, those who are completely deaf and those who are partially deaf or hard of hearing. Scientifically the term 'acoustically handicapped' would be a better nomenclature as it can include persons with all levels of deafness or loss of hearing.

The word deaf signifies a person whose hearing is impaired beyond repairing. There is no chance of such a person hearing even with the help of a hearing aid. The hearing loss of such people is above 75 decibels. Those who can hear when shouted at or can hear when using a hearing aid are called hard of hearing and not deaf.<sup>15</sup>

The former group is composed of those who became deaf before learning to talk. The latter group, namely, the hard-of-hearing, can be divided into two categories: the first is constituted by those who become hard-of-hearing through accident or disease, but are able to hear a little. The second category refers to the totally deaf who have acquired this auditory deficiency after learning to talk. Both these categories are not generally dumb. As they have or retain some forms of speech, they are classified as the hard-of-hearing. Not all deafness is of the same degree.<sup>16</sup>

For the purpose of special education, the deaf and the hard-of-hearing are usually differentiated. These two subgroups are not homogeneous, and consequently each subgroup is further classified. Such subgroups are often based on the degree of hearing impairment, the cause of the deficit, or on the age of the person at the onset of the disability.

Like other forms of disabilities deafness can also be defined both quantitatively and qualitatively (psychological, educational and social). The quantitative definitions typically indicate auditory disability as the degree of hearing loss measured audiometrically in terms of decibels (db). (Hearing loss refers to the deficit in the better ear in the speech range of frequencies). The following definitions and categorization condensed from Streng et al (1958), are representative of this type.

*Class 1.* Mild losses (20 to 30 db). People with hearing losses in this range learn to speak by ear in the ordinary developmental way, and are borderline between the hard of hearing and the normal.

- Class 2.* Marginal losses (30 to 40 db). People with such losses usually have some difficulty in hearing speech at a distance of more than a few feet and in following group conversation. Speech can be learned by ear.
- Class 3.* Moderate losses (40 to 60 db). With amplification of sound and the assistance of vision, people with hearing in this range can learn speech aurally.
- Class 4.* Severe losses (60 to 75 db). People with hearing losses in this range will not acquire speech without the use of specialized techniques. Such people are considered to be "educationally deaf". They are borderline between the hard-of-hearing and the deaf.
- Class 5.* Profound losses (greater than 75 db). People with hearing in this range seldom learn language by ear alone, even with maximum amplification of sound.<sup>17</sup>

People in classes 1, 2, and 3 are considered to be hard of hearing, while those in classes 4 and 5 constitute the deaf.

According to Merrill Rogers, deafness needs to be defined on the basis of a whole complex of variables which may interact with each other to varying degrees.

Some of the variables which are important in defining deafness and in describing the deaf population are:

- (1) **The degree of loss.** This is the traditional psycho-acoustical variable for measuring deafness. The degree of loss usually is measured in decibels. The deaf individual can be described in terms of his degree of loss and awareness and response to sound.
- (2) **Age of onset of deafness.** The age at which an individual loses his hearing is of crucial importance in the educational process and in his psycho-social and vocational adjustment. Two individuals might have exactly the same hearing loss as measured in decibels with an audiometer, yet if one individual were born deaf and the other became deaf at the age of 15, there would likely be profound differences between them in such factors as educational achievement, language development, and speech development.

- (3) **Method of communication used by the deaf individual.** There is variation among deaf persons in the methods by which they communicate with each other and with hearing persons. Some deaf persons rely almost exclusively on speech and speech-reading for communication. Others use mostly the language of signs. Still others depend largely upon the use of finger spelling. Probably the majority of the deaf use various combinations of these methods. It is probable that the method of communication used has significance for the vocational guidance and adjustment of any deaf individual.
- (4) **The deaf person's attitude towards his deafness.** The reaction of the deaf person to his deafness has important implications for his psycho-social and vocational adjustment. He may react by striving to become a member of the hearing community and refrain from participation in the deaf community. He may react in exactly the opposite manner and shun participation in the hearing community. He may endeavour to function as well as possible in both the deaf and the hearing communities.

Merril Rogers further observes that these are only a few in the complex of variables which must be considered when attempting to describe the deaf population. Each of the variables should be considered as a continuum along which deaf persons may be distributed. It is difficult, therefore, to discuss or to describe the "typical" deaf person. Individuals who are termed deaf may vary widely in degree of hearing loss, in age of onset of hearing loss, in methods of communication used, in their attitudes towards their deafness, and in many other factors.

Rogers conclude that in spite of the wide variation among deaf persons on the dimensions described, it is possible to list some factors which probably are common to most deaf individuals and which might serve to some extent as being descriptive of the deaf population. Deaf persons have in common the fact that they have hearing losses severe enough to produce serious disorders of communication. These disorders of communication coupled with the age at which deafness occurs as well as with other factors produce a need for special educational and rehabilitation procedures. Deaf persons also have in common the fact that they are coupled to the world visually.

Government of India has accepted the following definition of deafness for the purpose of granting scholarships: The deaf are those

in whom the sense of hearing is non-functional for the ordinary purpose of life. Generally a loss of hearing at 70 decibels or above at 500, 1000 or 2000 frequencies will make residual hearing non-functional.

## **Speech Handicapped or the Dumb**

There have been a few attempts to define speech impairment quantitatively. The commonly accepted definitions of speech defects are all largely functional in nature. Three components seem to be common to most current answers to the question: What is defective speech? Speech is considered to be defective when the manner of speaking interferes with communication, when the person's manner of speaking distracts attention from what is said, or when speech is such that the speaker himself is unduly self-conscious or apprehensive about his way of speaking. In other words speech is defective whenever the deviant manner of speaking interferes with communication, calls undue attention to itself, or cause the speaker concern to such an extent that special educational or remedial measures are deemed necessary.

According to Jon Eisenson from the point of view of the listener, any child who speaks so that attention is distracted from what is being said to the manner or its production may be considered to have defective speech. The amount of distraction and the degree and significance of the defect may vary. Objectively, a child's speech is significantly defective when the amount of distraction is sufficient to make it difficult for him to communicate readily with a normal listener. A normal listener is one whose hearing, visual perceptive abilities, intelligence, expectations and motivations make it possible for him to wish to and able to understand what the speaker is attempting to communicate.

Specifically, speech may be considered defective if it is characterised by any one or more of the following:-

1. It is not readily audible.
2. It is not readily intelligible.
3. It is vocally unpleasant.
4. It is visibly unpleasant.
5. It is laboured in production or lacking in conventional rhythm and stress.

6. It is linguistically deficient.
7. It is inappropriate to the individual in terms of his age, sex and physical development.
8. The speaker responds to his own speech as if one or more of the above were present.<sup>18</sup>

Speech defects are frequently divided into four major types:

1. Defects of articulation (sound production).
2. Defects of phonation (voice production)
3. Defects of rhythm (stuttering and cluttering).
4. Language disfunctions (delayed speech and aphasia).

For practical purposes, a second type of classification may be considered. This classification is based on categories of individuals with speech defects rather than on speech defects themselves.

1. Defects of articulation, including omissions, distortions, or substitutions of speech sounds.
2. Defects of voice, including those of quality, loudness, pitch, variety, or adequate duration.
3. Defects of rhythm, including stuttering (stammering) and cluttering.
4. Delayed speech development.
5. Cleft-palate speech
6. Cerebral palsied speech.
7. Impairment of previously developed language function (aphasias).
8. Speech defects associated with defective hearing.<sup>19</sup>

A detailed discussion on the various types of speech defects is beyond the scope of this chapter and will form part of the next chapter.

## Footnotes

1. Kamala V.Nimbkar *Towards A Fuller Life*, Department of Social Welfare, Govt. of India, 1967, Introduction p.3.
2. Kurt Janson, op. cit. p.20.
3. Harold Blame, "The Purpose and Full Content of a Rehabilitation Service," in *Modern Methods of Rehabilitation of the Adult Disabled*, United Nations, p.14.
4. Samuel M. Wischik and Romaine P. Mackie, "Adjustment of the School Programme for the Physically Handicapped Child," *American Journal of Public Health*, Vol.39, No.8, Aug. 1949, as quoted by the Board of Education of the City of New York in *Helping the Physically Limited Child*, p.3. cf. Usha Bhatt op. cit. p.6.
5. Kamala V. Nimbkar, op. cit. p.4.
6. Usha Bhatt, op cit. p.5.
7. Henry H. Kessler, *Rehabilitation of the Physically Handicapped* pp.12 - 13.
8. John W. Mc Connel, in *Dictionary of Sociology*, edited by Henry Pratt Fairchild, p. 139, cf. Usha Bhatt. p.6.
9. Kamala V. Nimbkar "Nature and Extent of the Problem", *Towards A Fuller Life*, p.105.
10. Gabriel Farrel, *The Story of Blindness*, p.196.
11. R. M. Halder, *Society and the Visually Handicapped*, p.22.
12. Rajendra T. Vyas "The Blind - Nature and Extent of the Problem", *Towards A Fuller Life*, Department of Social Welfare, Govt. of India, 1967. p. 13 - 14.
13. Berthold Lowenfeld, "The Blind", *Psychological Aspects of Physical Disability*. p. 179.
14. Gabriel Farrel, op. cit. p. 206.
15. "Who are the Deaf," *Mook-dhawani*, March to August, 1968: Vol. 1, No.2., p. 5.
16. R. M. Halder, op. cit. p. 6.
17. Streng et al, *Hearing Therapy for Children* (2nd, rev. Ed.) New York: Grune & Stratton, Inc. 1958, cf. Charles W. Telford, James M. Sawrey, op. cit. p. 330.
18. Jon Eisenson, "The Nature of Defective Speech," cf. William M. Cruickshank, *Psychology of Exceptional Children and Youth*, pp.184-185.
19. *Ibid.* pp. 185-186.

## CHAPTER III

# CAUSES AND TYPES OF PHYSICAL DISABILITIES

An investigation into the causes of disabilities is beneficial both to the disabled individual and to the society at large. It provides the basis for planning rehabilitation services for the afflicted persons and for formulating and administering adequate measures for the prevention of the impairment.

While socio-economic rehabilitation is the ultimate goal, an understanding of the causes and types of disabilities and diseases is the first step towards the solution of the problem.

The causative factors of disabling conditions are manifold and varied. They may broadly be classified into:

- (A) Hereditary;
- (B) Congenital; and
- (C) Adventitious (Acquired)

Each of these factors is again attributable to a number of contributory causes.

In the first instance we will analyse the general causes of various disabling conditions. In the subsequent sections of this chapter we will deal with the specific causes of orthopaedic disabilities, blindness, deafness and speech handicap.

## **General Causes**

### *(A) Hereditary*

In the mind of the common man, a great confusion prevails regarding the nature of hereditary defects. Common man normally mixes up the terms hereditary, congenital and familial. The fact, however, remains that the three terms are quite different from one another. A defect which is congenital (that is, present at birth) or familial (running in a family) may not be hereditary at all. A hereditary defect is one that passes down from generation to generation because of some sort of disturbance in the working of inherent gene mechanism. It is, however, noteworthy that a particular condition may be hereditary and yet, it may not manifest itself at birth, or for many years to come, or might not have appeared before in the individual's immediate family. This may appear paradoxical in view of the implication that a hereditary defect passes on from one generation to the other. But it does happen in mutation, that is, when rare recessive genes are pooled together or when new black genes come into being.

We know that recessive genes produce their full effects only when they flow in a double dose, from both the parents. But there are dominant genes also, which manifest themselves by direct transmission from either of the parents, in a single dose. This discovery has now led to a revolutionary change in our outlook on the nature of hereditary defects. There was a time when it was believed that every characteristic was either strictly hereditary or environmental. But, today we know that very few diseases or disabilities are purely hereditary. Behind every defect, both hereditary and environmental factors operate. Hereditary defects are comparatively infrequent, in spite of the common belief to the contrary.

Regarding the incidence of hereditary defects in India, unfortunately, we have very little factual data. Among the Hindus, who form a majority of the Indian population, the practice of exogamy, which debar an individual from marrying within his immediate circle of kith and kin (*SAGOTRA* and *SAPINDA*) may, perhaps, be the governing factor in minimising the incidence of hereditary defects.

### *(B) Congenital*

Congenital defects are those that are present at birth. Not all congenital defects are hereditary. Most of them are the result of

infections, nutritional deficiencies, chemical factors and other environmental conditions. The following are some of the causes for congenital deformities as enumerated by Dr. Usha Bhatt.

(a) **Maternal Malnourishment:** Recent research has demonstrated that more important than the genetic factor is the pre-natal environment of the embryo. The first eight weeks are very important for the structural development of the embryo, as most of the congenital malformations of a non-hereditary nature are established during this period. If maternal starvation takes place during the earlier period of gestation, the embryo dies, but if it were to occur at a later stage, i.e. organo-genetic period, malformations take place. If certain nutritives, such as vitamins and minerals, are omitted from the diet of the expectant mother, congenital defects may appear. For example, lack of iodine results in cretinism, whereas lack of vitamin 'A' invariably results in defective eyes, and in some cases, in cleft lip and palate.

(b) **Maternal Infection:** Rubella and German measles in the first two months of pregnancy may cause congenital defects, such as, microcephalia, deaf-mutism, hydrocephalia, cataract, etc. Other maternal infections may be mumps, chicken-pox, scarlet fever etc.

(c) **The Rh Factor:** Parent Rh blood incompatibility is also responsible for congenital disorders.

(d) **Disease:** It has been found that amongst the offspring of diabetic mothers, there is a higher incidence of congenital defects like club foot, claw hand, missing fingers, etc.

(e) **X Rays:** Radiation has an adverse effect on the embryonic growth. It was, incidentally, Murphy,<sup>1</sup> who first drew attention to this fact. In a group of 75 children born to mothers whose pelvis was irradiated during pregnancy, 16 were microcephalics and, in all 28 showed some defect or other of the central nervous system.

(f) **Chemical Agents:** Certain congenital deformities are also due to an erroneous use of certain high potency chemical agents or ingredients.

(g) **Glandular Disorders of the Mother:** The effects of endocrine disorders in the pregnant woman are not fully known, but hypo-functioning of her thyroid gland is associated with cretinism in the infant.

(h) **Mechanical Factors:** A few congenital defects can be traced to abnormal pressure or other mechanical factors. The abnormal position of the foetus may result in club foot, club hand or dislocation of wrists and knees.

*(C) Adventitious (Acquired)*

The term 'acquired defects' includes many conditions. The defects may be acquired due to (a) birth injuries; (b) pathological condition and diseases; (c) accidents; (d) nutrition deficiencies, (e) defective postures, (f) consequences of war, (g) poverty, and (h) other causes.

(a) **Birth Injuries:** Many of the brain disabilities result from birth injuries. Premature birth, caesarean birth, long and difficult labour, precipitate birth, haemorrhage, improper use of forceps and of anaesthetics and drugs, such as morphine, may result in severe brain injuries like brachial palsy or cerebral palsy. Difficult labour in Eastern countries due to ignorance and incompetence of midwives may account for cerebral palsy and other brain injuries which in the West, are usually caused by the above mentioned factors.

(b) **Pathological Conditions and Diseases:** Infectious diseases like whooping cough, measles, scarlet fever, meningitis, encephalitis, tuberculosis of bones and joints, small-pox and poliomyelitis are likely to result in physical disabilities.

(c) **Accidents:** In most of the Western countries permanent disablement as a result of industrial and highway accidents, outnumber war casualties. In the last World War the United States of America registered a total of 17,000 service amputees, during the four years of its participation. But during the same period in America a total of 120,000 civilians suffered amputations, of which 44,000 were due to industrial accidents.

*(1) Industrial Accidents:* Industrial accidents are caused by three main factors:

(i) Lack of adequate safeguards about the machines; (ii) External factors such as poor ventilation, bad lighting arrangements, insufficient room, unclean conditions and unusual temperature; (iii) Individual or human factor known as accident proneness.

In India, the number of industrial accidents is increasing due to rapid expansion of industries.

(2) *Traffic Accidents*: The incidence of this group of accidents is rising by leaps and bounds with the growth of roadways, railways and airways. An expert in the field, Dr. Leslie G Norman of London, estimates that there are 100,000 deaths on the roads of the world every year and for every death there are 30-40 light injuries and 10-15 serious injuries.<sup>2</sup>

Records of traffic accidents in developed countries like U.S.A., Canada, Great Britain, Australia etc. are of alarming numbers.

The incidence of traffic accidents in Indian cities has also increased considerably during the last four decades. Unplanned cities with narrow roads and poor traffic control arrangements have been responsible in increasing the number of road accidents. Railway accidents and other accidents such as falling from trees, house tops etc., also cause disabilities.

(d) **Nutrition Deficiencies**: Nutritional deficiency leads to low resistance against diseases, which may ultimately result in disablement. The problem of nutrition resolves itself into two parts: (1) Production of sufficient quantity of food to meet the basic needs of the population; and (2) Raising the standard of living. In India, dietary and nutrition surveys made from time to time have recorded both quantitative and qualitative deficiency.

(e) **Consequences of War**: In the West, war is the largest single factor responsible for causing permanent disablement not only to combatants on the battlefield but also to civilians who are forced to bear the hazards of war. The number of those permanently disabled and suffering from the consequences of war runs into millions. It has been estimated that 25 per cent of the world population is even now suffering from the scars of the World Wars. India was one of the fortunate countries that were not directly involved in the two wars. So the number of our war disabled due to the World Wars was low. However we had our toll of war disabled as a result of our encounters with China and Pakistan.

(f) **Poverty**: Poverty with ignorance and disease, forms a most formidable trio. Poverty results in disablement and disablement leads to poverty.

(g) **Other Causes:** In addition to those mentioned above, illiteracy, shortage of medical personnel, want of requisite institutions, traditional fatalism of the masses and fear of the surgeon's knife etc., are some of the causes contributing to physical disabilities.

After examining the general causes of physical disabilities we shall now investigate the specific causes of different categories of physical disabilities and their types.

## **Orthopaedic Disability**

### *(A) Hereditary*

Some of the abnormalities which are transmitted as dominants are: brachyphalangia, polydactylism, claw hands, spider hands, fused fingers, double joints, cleft palate, cleft lip etc. Abnormalities which are transmitted in a recessive mode are: club foot, dislocation of hip, spina bifida, Friedreich's spinal ataxia etc. It is interesting to find that some of the anomalies such as cleft lip and cleft palate are transmitted in both the dominant and recessive ways.<sup>3</sup>

### *(B) Congenital*

The most common among congenital defects are: hare lip and cleft palate, webbed fingers, club foot, bow leg, dislocation of the hip, missing bones and amputations.<sup>4</sup>

### *(C) Adventitious (Acquired)*

(a) **Birth Injuries:** As has been mentioned earlier in this chapter brain injuries at the time of birth result in such defects as brachial palsy or cerebral palsy.

(b) **Diseases:** The classical causes of crippling are cerebral palsy, poliomyelitis and tuberculosis of the bones and joints. Other widely prevalent conditions are: rheumatism, arthritis, paraplegia, hemiplegia and osteomyelitis. Some diseases which are rare but significant are: multiple sclerosis and muscular dystrophy.<sup>5</sup> We shall now briefly examine each of these diseases or conditions.

(1) *Cerebral Palsy:* Cerebral palsy is perhaps the most important single cause of a large number of orthopaedic disabilities. A considerable number of children who are orthopaedically handicapped

have suffered from early brain damage to the motor area of the brain. This damage results in motor disturbances and incoordination of various degrees of severity. People exhibiting these motor disturbances as the result of brain damage are said to be suffering from spastic paralysis.

Spastic paralysis or cerebral palsy was first described by Little in 1843. Hence it has been referred to as "Little's disease".

Cerebral palsy has been defined as "a motor defect present or appearing soon after birth and dependent on pathological abnormalities in the brain".<sup>6</sup>

Fay described cerebral palsy as "any abnormal alteration of movement or motor function arising from defect, injury, or disease of the nervous tissues contained in the cranial cavity".<sup>7</sup>

'Cerebral' means anything connected with the brain, whereas the word 'palsy' indicates lack of control of muscles or joints. 'Cerebral palsy' is a term used to designate any paralysis, weakness, incoordination, or functional aberration of the motor system resulting from brain pathology. It is perhaps unique among crippling conditions in that, it may include all the functions of the brain. It may not only represent a motor handicap but may also include sensory and mental deviations as well. Visual, auditory and speech defects, and epilepsy are some of the other accompaniments of this brain disorder.<sup>8</sup>

**Causes:** Causes of cerebral palsy are mainly (i) ante-natal factors, accounting for 30 per cent of the cases. Some of these factors are: intra-cerebral haemorrhage of the foetus, maternal and foetal anoxia, parental Rh incompatibility, infection of the mother during pregnancy with rubella or syphilis, maternal diabetes, and maternal gonadal irradiation, (ii) natal factors, associated with birth itself accounting for 60 per cent of the cases. They are: oxygen deficiency, haemorrhage or precipitate birth, (iii) post-natal factors, accounting for 10 per cent of the cases. They are: infections like meningitis or encephalitis, head-injury due to accidents, drugs, neoplasms and vascular diseases.

**Types:** The following are the six main types of cerebral palsy:

(i) spastic, (ii) athetoid, (iii) ataxic, (iv) tremor, (v) overflow, (vi) rigidity.

Wyllie has suggested a sixfold classification according to the number and manner in which the limbs are involved:

- (i) Congenital symmetrical diplegia, paralysis in all limbs.
- (ii) Congenital paraplegia, in which only the legs are involved.
- (iii) Quadriplegia or bilateral hemiplegia, in which the disturbance is greater in the arms than in the legs.
- (iv) Triplegia, a very rare condition in which three limbs are involved.
- (v) Hemiplegia, in which both limbs on the same side are involved.
- (vi) Monoplegia, an extremely rare condition in which only one limb is affected. <sup>9</sup>

(2) *Poliomyelitis*: Poliomyelitis, one of the commonest diseases of childhood is a leading cause of orthopaedic disabilities among children.

The cause of poliomyelitis in man is a virus so small in size that it can be detected only by the use of the electron microscope. There are three recognised strains: Lansing, Brunhilde and Leon. Each of these strains has its own characteristics. Consequently the immunity which may result from exposure to one strain may not confer immunity to the other two types.

Those who develop the disease are for the most part, children. About 75 per cent of those reported annually as having polio are between 1 and 15 years of age. The remainder are usually in an age group from 16 to 40.

There are three types of poliomyelitis: (i) spinal, (ii) bulbo-spinal and (iii) bulbar. This disease has three phases: (i) acute, (ii) convalescent, and (iii) residual.

The general symptoms of poliomyelitis infection are sore throat, nausea and vomiting, headache, fever and drowsiness. Stiffness of back and neck are more specific signs. Pain associated with movement of the body occurs and, still later, paresis or paralysis of voluntary muscles may take place. Usually several days elapse before the clearly defined paralysis of muscle groups which are going to be

involved, takes place. This is a very brief description of the typical 'spinal' polio.

Some individuals will be found to have more involvement of their upper extremities, the muscles of respiration, the muscles of swallowing and speech. They have the 'bulbo-spinal' type of polio and the involvement is centered maximally in the motor neurons of the upper portions of the cervical cord and extending up to the bulbar portions of the brain. When such involvement occurs, the muscles of the chest, the diaphragm, the shoulders, arms, and hands are affected. Many of these patients become the 'respirator' inhabitants during a portion of their illness.

A third and smaller group has 'bulber' polio. It is characterised by the maximum involvement of the 'higher centres' or the vital centres of the brain, plus the 7th, 10th and 12th cranial nerves and some involvement of the meninges. This group has the most severely involved patients and the mortality of polio is to be accounted for as deriving mainly from this group and the 'bulbospinal' type.<sup>10</sup>

(3) *Tuberculosis of bones and joints*: Tuberculosis of bones and joints usually results in orthopaedic disability, because it affects the joints and causes loss of motion. In the spine, it causes rigidity or stiffening, loss of motion and, if untreated, hunchback. In many of the western countries, its incidence has been considerably lowered by vaccination and public education. In India, and other Asian countries, pulmonary tuberculosis as well as tuberculosis of bones and joints still continue to rage wild. The spread of the disease is favoured by insanitary and overcrowded conditions obtaining in cities and malnourishment due to poverty.

(4) *Arthritis and Rheumatism*: In the West, arthritis is the most disabling of all chronic diseases. Arthritis means inflammation of joints and of all other structures around the joints. The causative factors may be bacteria, injury or metabolic disturbance. It is most common in those individuals who have passed their middle age.<sup>11</sup>

Chronic arthritis is of many types, such as: rheumatoid arthritis, ankylosing spondylitis, gouty arthritis and osteoarthritis.

Rheumatoid arthritis is a systemic disease affecting primarily the connective tissues with joint inflammation dominating the clinical and pathological cases. Early in the disease, the patient may experience

fatigue, anorexia, weight loss, stiffness and fever. This is followed by joints involvement, often symmetrical, with pain on motion, tenderness, swelling, heat and redness. Hands, wrists, knees, ankles and feet are commonly affected. Subcutaneous nodules may appear over pressure points (for example, just distal to the elbows). Range of motion is almost always limited in one or more joints. It may vary from slight and correctable in early cases to severe with contractures and fixed deformities in the advanced cases.

Ankylosing Spondylitis or Rheumatoid Spondylitis (known as Marie-Strumpell disease) is a chronic form of arthritis which affects the spine and sacroiliac joints, but may also involve peripheral joints, especially shoulders and hips. Early symptoms, usually aching and stiffness, appear in the low back. The sedimentation rate is elevated but tests for rheumatoid factor are negative. X-ray changes are seen earliest in the sacroiliac joints which show condensation of bone; later there is narrowing of articular space and finally bony fusion. Calcification of the paravertebral ligaments results in the 'bamboo spine' appearance in X-rays.

Gouty arthritis or Articular gout is a metabolic disorder characterized by increased serum uric acid resulting from an inborn error of metabolism or secondary to another disease such as polycythemia vera or leukemia. It occurs mostly in the third, fourth and fifth decades, predominantly in men, and constitutes a small percentage of all patients with arthritis.

Hypertrophic arthritis or osteoarthritis is the result of mechanical wear and tear of the human system consequent upon old age. It affects weight bearing joints, particularly knees, hips and lumbar spine, and the distal interphalangeal joints of the fingers. The cervical spine and shoulders may also be involved. It affects both men and women, and of all rheumatic conditions it is the least disabling and most static. Symptoms, which come on in middle age or later, are predominantly joint pain and stiffness.

(5) *Hemiplegia*: It is a crippling condition in which there is a paralysis of one side of the body from head to toe. It may be the result of an injury of the brain or some degenerative diseases like arteriosclerosis, severe organic heart disease or hypertension. More than half the cases have vascular origin. The condition is more prevalent among males than females. In severe cases, however, it is

accompanied by speech or hearing defect, blunted memory, loss of equilibrium, of space perception and of sensation, and personality changes.<sup>12</sup>

(6) *Paraplegia*: Paralysis of both lower limbs is called paraplegia. Some parts of the trunk may also be involved in the paralysis, and in some cases sensation in these parts may also be affected. The paralysis is caused by damage to the spinal cord, and this damage may be the result of a gunshot wound, a fracture dislocation of the spine, acute inflammation such as transverse myelitis, or a disease of the nervous system such as anterior poliomyelitis, to mention a few of the many conditions which may produce the nervous lesion. The lesion of the spinal cord produces motor paralysis from the site of the lesion downwards and loss of other essential functions, such as sensory, vasomotor, bladder, intestinal and sexual.

The type of paralysis may vary in nature, and in degree. The specific disability will depend upon the site and extent of the pathology in the nervous system.

The site of the injury to the spinal cord is of major importance. If the transverse lesion is at the fifth segment in the neck region, all four limbs of the patient are paralysed (quadraplegia). When the level of lesion is this high, the patient breathes by his diaphragm alone, and may not survive. In some cases, however, and especially when the lesion is slightly lower, the patient survives, but is markedly restricted, so that problems in rehabilitation become serious, and vocational possibilities remain limited.<sup>13</sup>

(7) *Multiple sclerosis*: Multiple sclerosis, also known as disseminated sclerosis, is one of a rather large group of chronic diseases of the central nervous system. In multiple sclerosis one finds many areas in the brain and spinal cord, scattered indiscriminately throughout the central nervous system, in which myelin (a fatty sheath which in normal healthy individuals covers the nerve fibres) has been dissolved or destroyed.

The process by which this dissolution or destruction is accomplished is not known. However it causes either complete stoppage of these nerve impulses - thus producing paralysis of the parts of the body innervated by these nerves - or the impulses pass through the affected nerves either enfeebled or altered, so that those

parts of the body innervated by such nerves perform their functions in a disturbed fashion.

Double vision, staggering and inability to keep one's balance, numbness of parts of the body, tremor, nystagmus (involuntary movements of the eyeball), extreme weakness, speech difficulties, emotional disturbances and bladder troubles are common first symptoms of multiple sclerosis.<sup>14</sup>

The three principal characteristics of multiple sclerosis are: (i) neural dysfunction caused by multiple lesions in segmental patches of the white matter of the cord and brain, (ii) complete or partial reversibility of many of the lesions at different stages of the disease and (iii) permanent damage leading to permanent dysfunction when the myelin is replaced by scar tissue. The real cause of the disease is still unknown and no effective treatment has yet been developed.<sup>15</sup>

(8) *Muscular Dystrophy*: Muscular dystrophy or atrophy means that the muscles are not nourished properly or have some impairment of the nerve supply that causes weakness and disability.

(c) **Amputations**: Amputation means cutting off of a limb or other projecting part of the body. Amputations may be caused by: (1) peripheral vascular insufficiency and gangrene; (2) thrombosis and embolism; (3) trauma; (4) thermal injuries; (5) congenital deformity; (6) malignant tumours. Most of the upper extremity amputations are attributable to industrial accidents, whereas a large number of lower extremity amputations are caused by traffic accidents and vascular diseases.<sup>16</sup>

(d) **Postures**: Bad posture is often a cause of physical disability. The commonest of all defects associated with poor posture is curvature of the spine. It has been found that poor posture is caused by general debility, malnutrition, fatigue, repeated and prolonged infections, such as adenoid and tonsil infections, deformities which are caused by rickets, poliomyelitis and bone T.B., defective vision and audition, wearing badly-fitted clothes, sitting too long in uncomfortable chairs, and sleeping in a sagging bed.<sup>17</sup>

## **Blindness**

Blindness is due to causes: (a) hereditary, (b) congenital, and (c) adventitious including disease, accident, injury, insanitary conditions and absence of proper medical and surgical attention.

## (A) Hereditary

The incidence of hereditary blindness is much less compared to blindness caused by other factors. The exact extent cannot be easily determined. Nevertheless it calls for close attention, since it is transmitted from one generation to the other not only in the direct line but also in indirect or collateral lines. Moreover most of the effects of heredity on blindness are apparent in the later stages of life. Dr. L.H. Carris considers the following eye diseases as causing hereditary blindness. (1) Anophthalmos and Microphthalmos; (2) Buphthalmos; (3) Albinism; (4) Family degeneration of cornea; (5) Aniridia, and Coloboma Iridus; (6) Ectopia Lentis; (7) Cataract; (8) Retinitis Pigmentosa; (9) Atrophy of the optic nerve; (10) Glaucoma; (11) Nystagmus; and (12) strabismus and Ophthalmoplegia Extrema and ptosis.

According to him marriages of couples, one or both of whom suffer from any of the eye-diseases listed above, transmit blindness in various degrees to the next generations directly or collaterally.

## (B) Congenital

The congenital diseases are cataract and glioma. The symptom of cataract in the baby's eye is a whitish spot in his pupil. The babies' pupils are always black. Glioma resembles the cat's eye, seen in the night. This occurs in very early life. Though it is uncommon, it is very serious. The only cure is the removal of the eye, otherwise the life of the child is in danger.

Infection of the eye at the time of birth caused by the germ of one of the venereal diseases is very common in India. This disease is technically known as Ophthalmia Neonatorum or babies' sore eyes. The use of a solution of 1 per cent silver nitrate soon after the birth of a child is most effective.

## (C) Adventitious (Acquired)

Under this category are included various types of blindness acquired after birth due to diseases, malnutrition, injuries or accidents etc. Small-pox, diarrhoea and diabetes are common diseases causing blindness. German measles or rubella in pregnant women results in congenital cataracts and loss of sight in different degrees. Venereal

diseases like syphilis and gonorrhoea lead to visual impairment in the affected persons and in their children.

(1) *Malnutrition*: Malnutrition and consequent vitamin A deficiency in children are serious causes of blindness. Xerophthalmia and night blindness are two such conditions.

(2) *Diabetic Retinopathy*: With more effective controls for diabetes an increasing number of affected persons are living to advanced ages and develop diabetic retinopathy. This is recently the most rapidly growing cause of blindness. Currently 15 per cent of all new cases of blindness are of diabetic etiology.

(3) *Retrolental Fibroplasia*: Retrolental Fibroplasia, is a major cause of blindness in the West. It is a disease of the retina in which a mass of scar tissue forms behind the lens of the eye. Both eyes are affected in most cases and it occurs chiefly in infants born prematurely who receive excessive oxygen in incubators.

(4) *Sympathetic Ophthalmia*: Sympathetic Ophthalmia refers to the condition in which blindness of one eye, through injury or disease, causes blindness of the second eye too. The popular misunderstanding that this is an eye disease, caused by contact or association with the blind is not scientific.

(5) *Glaucoma*: Glaucoma is the most dangerous of all the eye diseases, and is found most often in middle aged people. It is caused by the inability of fluids to drain out of the eye. This exerts increasing pressure on the large nerve which is responsible for the sight of the eye. Proper treatment, if given at once, will release the pressure and save the sight. The warning signs of Glaucoma are: headache, pain in the eyes, and often lights appear to be surrounded by coloured rings. Another sign, though one which is more difficult to recognise, is that although things straight in front of the eyes can be seen clearly, objects at the side are seen much less clearly. Whenever there is any suspicion of Glaucoma there must be no delay in going to an eye hospital or consulting an eye specialist. The delay of even a few hours may make all the difference between sight and blindness.<sup>18</sup>

(6) *Trachoma*: Trachoma is an infectious disease caused by a germ which spreads through direct contacts by fomites, flies etc.. Children between one and three years of age are the most susceptible group. However those below the age of 10 are not often spared.

Trachoma is usually associated with conjunctivitis i.e. inflammation of the mucous membrane which lines the eyelids and covers the front part of the eye ball. If the inflammation is not cured within 2 or 3 days, specialised treatment must be resorted to because it needs skilled treatment to get rid of the germs of trachoma which are very resistant. Otherwise scars may form on the inner surface of the eyelids. These scars, by contracting, alter the shapes of the lids, so that the eyelashes, which should hang straight down, turn inward and injure the delicate surface of the eye. Then sores are formed and the sight is permanently damaged. An operation will restore the eyelids and lashes to their proper position, but to be successful it must be done before the eye is injured.<sup>19</sup> Insanitary conditions and lack of personal hygiene resulting from poverty and ignorance are largely responsible for the spread of this infection.

(7) *Cataract*: Cataract is the major cause of blindness all over the world. Cataract is a slow process where the clear lens in the eye becomes opaque.<sup>20</sup> This is an eye trouble which is usually found in older people. It is not dangerous unless it is complicated by other diseases. When a cataract forms, the lens has a milky look, and clear sight is no longer possible. The cataract can be cured by operation at any time when poor sight gives trouble in getting about or earning one's living. When a cataract has been removed by operation the sight will be restored although glasses will be needed to see things at a distance and close at hand.<sup>21</sup>

(8) *Refractive Errors*: (i) *Myopia or shortsightedness* is a refractive error in which, because the eyeball is too long in relation to its focussing power, the point of focus for rays of light from distant objects (for example parallel light rays) is in front of the retina. Thus to obtain distinct vision the object must be brought nearer to the eyes to take advantage of divergent light rays (those from objects less than 20 ft. away). This defect can be rectified by the use of concave lenses.

(ii) *Hyperopia or longsightedness* is a refractive error in which, because the eyeball is short or the refractive power of the lens weak, the point of focus for rays of light from distant objects (parallel light rays) is behind the retina; thus accommodation to increase the refractive power of the lens is necessary for distant as well as near vision. They can see distant objects more clearly than objects close at hand. This defect can be rectified by the use of convex lenses.

(iii) Astigmatism is yet another error of refraction which is due to the failure of the eye structure to focus all of the rays of light at the same point owing to an irregularity in the curved surface of the cornea, the front covering of the eyeball. This condition may occur with either far or near sight.

(9) *Solar Eclipse*: Eyesight of many young ones is lost by gazing at a solar eclipse with unprotected eyes. On account of the extremely high temperature of the enclosed sun, the rays emanating from it destroy the sensitive mechanism of the unprotected eye.<sup>22</sup> The National Society for Prevention of Blindness has strongly admonished people against watching the eclipsed sun with naked eyes.

## **Deafness**

The causes of deafness also can be classified into three main groups, (A) Hereditary, (B) Congenital and (C) Adventitious.

### **(A) Hereditary**

These include otosclerosis, predisposition to early degeneration of the auditory nerve, and anatomical malformations. Otosclerosis is a familial biological defect that causes a bony sclerosis between the footplate of the stapes and the oval window. The eventual result is a fixation of the stapes and a conductive type hearing loss. The process undoubtedly, begins in utero but usually symptoms (hearing loss and sometimes tinnitus) are delayed until the third decade. It is more common in women than in men.

Predisposition to early degeneration of the auditory end organ is seen in children of various ages from shortly after birth to five or six years of age. For some unknown reason and without apparent cause, these children show varying degrees of inner-ear hearing loss which may progress to severe impairment.

Anatomical malformations may vary from a slight defect of the external ear to a complete absence of the entire otic mechanism.

### **(B) Congenital**

Virus diseases, notably Rubella in the first trimester of pregnancy, to a lesser extent, mumps and influenza, may cause severe inner-ear impairment. Any severe acute illness, particularly if

accompanied by a high fever, is likely to injure the cochlear nerve endings prenatally.

*(C) Adventitious (Acquired)*

The adventitious causes of deafness are many and varied. They are classified into seven main groups as follows. The type of hearing loss associated with each condition is also indicated.

<i>Cause</i>	<i>Type of Loss Sensorineural (perspective or conductive).</i>
1. Brain conditions:	
Meningitis	Sensorineural
Encephalitis	Sensorineural
Tumors, vascular circulatory diseases	Sensorineural, central
Concussion, central auditory area damage	Sensorineural, central
Fracture of the temporal bone	Sensorineural or conductive
2. General Infectious Diseases:	
Scarlet fever	Both
Measles	Sensorineural
Mumps	Sensorineural
Pertussis	Sensorineural
Varicella	Sensorineural
Influenza	Sensorineural
Pneumonia, virus and pneumococcic	Sensorineural
Typhoid fever	Sensorineural
Diphtheria	Sensorineural
Syphilis	Sensorineural
Common cold	Both
Any disease causing high fever	Sensorineural

- |  |               |
|--|---------------|
| 3. Infections of the Ear:                          |               |
| External Otitis                                    | Conductive    |
| Otitis media, acute and chronic                    |               |
| Non-suppurative                                    | Both          |
| Suppurative  | Both          |
| Serous   | Conductive    |
| Mastoiditis, acute and chronic                     | Conductive    |
| 4. Physical Agents:                                |               |
| Impacted cerumen                                   | Conductive    |
| Foreign-body impaction                             | Conductive    |
| Trauma, accidental                                 | Both          |
| Noise-exposure                                     | Sensorineural |
| Barotrauma   | Both          |
| Excessive growth of lymphoid tissue in nasopharynx | Conductive    |
| Surgical interference                              | Both          |
| 5. Toxic Agents:                                   |               |
| Quinine  | Sensorineural |
| Aspirin (salicylates)                              | Sensorineural |
| Streptomycin                                       | Sensorineural |
| Dihydrostreptomycin                                | Sensorineural |
| Hydrostreptomycin                                  | Sensorineural |
| Neomycin   | Sensorineural |
| 6. Miscellaneous:                                  |               |
| Functional   |               |
| Psychogenic  |               |
| Hysteria   |               |
| Malingering  |               |
| 7. Advancing Age (Presbycusis)                     | Sensorineural |

## Types

Two types of deafness are commonly observed: (a) conductive and (b) perceptive or nerve deafness. A combination of both the types of deafness is also not uncommon.

## Speech Handicaps

Speech defects are caused by a wide variety of *organic* and *functional* (social and psychological) factors.

The *organic causes* include cleft palate, maldevelopment of other parts of the mouth and jaw, dental irregularities including missing or maloccluded teeth, muscular paralysis of the larynx, brain damage (in cerebral palsy and aphasia) and nasal obstruction.

*Functional* causes include failure to learn adequate speech, fixations, regressive speech patterns, and general personality and emotional disturbances.

Many speech specialists do not find the dichotomy between organic and functional a very useful one. Speech difficulties which are originally strictly organic in origin usually acquire a large functional component as a result of the way the person reacts to the difficulty. Prolonged functional disorders may have organic consequences. Although it is possible for organic disorders to remain on that level with relatively little functional component, and for functional disorders to continue without any specific organic components, they rarely do so. Most speech defects have both functional and organic components.<sup>23</sup>

## Types of Speech Defects

Speech defects are frequently divided into four major types:

1. Defects of articulation (sound production).
2. Defects of phonation (voice production).
3. Defects of rhythm (stuttering and cluttering).
4. Language dysfunction (delayed speech and aphasia).

For practical purposes, a second type of classification may be considered. This classification is based on categories of speech-defective individuals rather than on speech defects. For example, a

cerebral palsied child may show defects of language delay, voice and articulation. Most children with cleft palates have defects of articulation as well as of voice. With this in mind, the following classification should be found useful:

1. Defects of articulation, including omissions, distortions, or substitutions of speech sounds.
2. Defects of voice, including those of quality, loudness, pitch, variety, or adequate duration.
3. Defects of rhythm including stuttering (stammering) and cluttering.
4. Delayed speech development.
5. Cleft-palate speech
6. Cerebral palsied speech.
7. Impairment of previously developed language function (aphasias).
8. Speech defects associated with defective hearing. <sup>24</sup>

### Footnotes

1. D. P. Murphy, *Congenital Malformations*, cf. Usha Bhatt, op. cit. p. 36.
2. Dr. Leslie G. Norman, "On the Road," in *World Health*, Magazine of the World Health Organization Jan-Feb. 1962, p. 24 cf. Usha Bhatt, op. cit., p. 47.
3. *Ibid.* pp. 33-34.
4. *Ibid.* p. 35.
5. *Ibid.* p. 38.
6. Yannet, H., "The Etiology of Congenital Cerebral Palsy," *J. Pediat*, XXIV (1944), 38-45, cf. Charles W. Telford, James M. Sawrey, op. cit. p. 364.
7. Fay, T., "Desperately Needed Research in Cerebral Palsy," *Cerebral Palsy Review*, XIV (March-April, 1953), pp. 4, 11,13,15, cf. W.M. Cruickshank, G. Orville Johnson, *Education of Exceptional Children and Youth*, p. 430.
8. Usha Bhatt, op. it. p. 39.
9. Wyllie, W.S., "Cerebral Palsies in Infancy" in *Modern Trends in Neurology*, ed. A. Feiling. London, Butterworth & Co., (Publishers) Ltd., 1951. cf. Charles W. Telford, James M. Sawrey, op. cit. p. 366.

10. Usha Bhatt op. cit. p. 40.
11. Ibid. p. 43.
12. Ibid.
13. Stanley Berger, "Paraplegia," James M. Garret, *Psychological Aspects of Physcial disability*, pp. 46-47.
14. Molley R. Harrower, "Psychological Factors in Multiple Sclerosis," cf. James F. Garret, op. cit, p. 68.
15. Usha Bhatt, op. cit. p. 46.
16. Ibid. p. 49.
17. Ibid, p. 50.
18. Health News Service, "The Care of Eyes in Grown up Life," reprinted from the Journal of the Christian Medical Association of India, *Blind Welfare*, Vol. II., December 1960, No. III, pp. 27-28.
19. Ibid.
20. Dr. G. Venkataswamy, "Causes of Blindness in India," *Blind Welfare*, April 1976, No. 1, Vol. XVIII, p. 9.
21. *Health News Service*, op. cit. pp. 27-28.
22. Mohan Lal and Uday C. Gupta, "Prevention of Blindness," *Towards a Fuller Life*, Dept. of Social Welfare, Govt. of India, p. 21.
23. Charles W. Telford, James M. Sawrey, op. cit. pp. 394-395,
24. William M. Cruickshank, op. cit. pp. 185-186.

## CHAPTER IV

# PSYCHO-SOCIAL DIMENSIONS OF PHYSICAL DISABILITY

Human person is a complex entity composed of two distinct phenomena, the physique and the psyche, commonly called body and mind. They are always interdependent and indivisible. Their mutual influence and interaction form the basis of human action. The constant interplay of body and mind takes place invariably in a social setting, which in turn exerts influence on the actor provoking reactions in him and modifying his behaviour. It is both common knowledge and scientific theory that a person's mental life and emotional reactions are influenced by his physical condition as well as his social and physical environment. Psychology as a science deals with the mental and emotional life of an individual. Social psychology concerns itself with human behaviour in the context of social environment. The subject matter of this chapter is the psychological aspects of physical disability.

Our discussions will primarily be within the theoretical frame work of the two disciplines, somatopsychology and social psychology. Understanding the psychology of the handicapped means gaining insight into their behavioural reactions, feelings and attitudes as favourable or unfavourable to their personal growth and social integration.<sup>1</sup>

That every handicapped individual should be stimulated to greater self-realisation and greater social contribution, should be the ultimate goal of every one concerned with the disabled persons. The achievement of this goal can be hastened if parents, teachers, social workers, occupational therapists, orthopaedic surgeons and others

who devote their lives to his welfare and rehabilitation, have a clear knowledge of the psychology of the handicapped.<sup>2</sup>

## **Relationship between Psyche and Behaviour**

Our endeavour in this chapter is to explore the extent to which and the ways in which a physical disability affects or determines the mental processes and behaviour of a person. A scientific enquiry into this problem necessarily entails a general discussion on the possible relationship between physique and behaviour. Such a study is important in that it can lead us to certain general principles which would serve as a theoretical frame of reference for a better understanding of the behavioural pattern of the physically handicapped.

Lee Meyerson observes that all of us in everyday life tend to make judgements about people in terms of their physique and evaluate their physique in terms of their behaviour.<sup>3</sup> The Sanskrit saying: "Yatha Akruithi Thatha Prakruithy" is still a guiding principle in our society in evaluating people and their behaviour. It is a matter of common observation that the same kind of behaviour may be found in people who have widely differing physiques, and individuals who have the same kind of physique behave in widely differing ways. Here it is not easy to disentangle the threads of cause-reaction-effect. However Meyerson poses the question whether there is any invariable relationship between physique and behaviour and if so what would be the different ways of discovering it. Opinions differ on this issue and for the sake of clarity and comprehension, we shall examine them one by one.

### *1. Physique and Behaviour seem to be unrelated*

It is evident that normal variations in specific aspects of physique such as the length of fingers, toes, lips or tongue are not critical factors in behaviour. Similarly, it is obvious from impressionistic evaluation of the whole physique that individuals who engage in similar behaviour may come in all shapes and sizes. Groups of writers or lawyers or psychologists or realtors are not noted for their physical similarity.

On the other hand it is common observation that athletes as a group excel in physique such groups as bankers or shopkeepers. It is as if nature's law that men, as identified by their physique, behave differently from women. Moreover there are a number of

research findings which show a positive correlation between certain aspects of physique and certain kinds of behaviour. For example, children who are physically larger in height and weight tend to show leadership, popularity, social success, and good adjustment more frequently than smaller children.<sup>4</sup> The correlations obtained are usually low, but they are positive in relating "good" physique to "good" behaviour; and some of the correlations are statistically significant.

## *2. Physique seems to determine Behaviour*

Since the time of Hippocrates, 2500 years ago, thoughtful and observant men have believed that there is a systematic and intrinsic connection between physique or body-type and personality. The connection has been variously conceived to be genetic or biochemical or physiological so that once the body-type was established, predictable behaviour necessarily followed. Evidences do not corroborate the idea that the same genes or biochemical conditions that influence the development of body-type also directly influence personality and behaviour; correlations obtained from normal populations between physical type and psychological type almost invariably have been too low to be used for any prediction.

The most promising modern constitutional typology in somatopsychology was developed by Sheldon and associates. They have described three components of structural variation and three basic components of temperament. They reported a correlation between these body types and temperaments. However the findings of these authors have been criticized on the grounds that the criteria for the temperament ratings were often expressed in physical terms. Nevertheless such a theory of somato types may eventually add to our knowledge of intrinsic relationships between physique and temperament.

Physique may also directly determine behaviour in ways that do not require assumptions about body-type. Lack of necessary endocrine products, for example, may affect both physical and psychological development, although there is little evidence that normal variation in endocrine secretion is related to personality.

Sexual maturity and interest in the opposite sex ordinarily develop together. A person may be sexually mature, however, without being interested in the opposite sex and a sexually immature child may be highly interested in sexual contact with adults.<sup>5</sup> The presence

of the appropriate physique may not necessarily require a particular kind of behaviour and the absence of appropriate physique may not prohibit behaviour.

### *3. Behaviour seems to determine Physique*

White individuals who uncover their bodies to the sun develop red or brown skins. Individuals who practise the sport of weight lifting develop large biceps. In recent years great emphasis has been placed on functional or psychosomatic disabilities. It is now well known that the way in which a person thinks and feels may affect his physique. A soldier who runs away from the cries of his wounded buddies may develop "psychogenic" deafness. High-powered executives who function under great pressure for long periods of time are more likely to develop peptic ulcers than individuals who lead calmer lives.

### *4. Behaviour and Physique may be simultaneously determined by a Third Variable*

The untreated congenital hypothyroid child simultaneously develops cretin physique and behavioural sluggishness. Both deafness and mental deficiency in a child may be residuals of an attack of meningitis. Development of secondary sexual characteristics and becoming interested in the opposite sex may result from the injection of sex hormones. Some of these relationships have a 'must' characteristic so that direct and accurate prediction from physique to behaviour is possible eg., no cases have been reported of untreated congenital hypothyroid children who did not simultaneously manifest cretin physique and behavioural sluggishness. Other relationships, however, like those in the previous classifications refer to statistical probabilities. Meningitis may or may not cause deafness and mental deficiency. It can also produce these two defects simultaneously.

### *5. Behaviour is a Function of Person interacting with his Environment - $B = f(PE)$*

It is now obvious that this is the only formulation that will adequately account for the evidence available. Behaviour is never the product of the person or of the environment alone. It is not certain, however, that knowledge of this formula greatly increases our understanding or our ability to predict and control behaviour in the

*individual case.* To study all the aspects of a person, all the aspects of the environment and all the aspects of interaction between the two is clearly an impossible task. We may limit the field to more manageable dimensions by concentrating not on an understanding of all behaviour, but rather on the modest aim of understanding what kind of behaviour results when a person has a particular physique. Even more specifically, we wish to find some way of ordering and understanding the behaviour of individuals whose physique is "exceptional" in a negative way - i.e., the behaviour of individuals whom we call physically disabled.

## **Relationship between Disability and Behaviour**

The time old proposition that a disability per se is directly responsible for behaviour, no longer stands the test of evidence. Nevertheless it is a widely accepted fact that any physical disability is accompanied by some sort of psychological disturbances. Whether the source of these disturbances is in the disability itself or in the person or some other factor is a question that needs serious consideration. Meyerson points out that "except for certain specific behavioural limitations that are directly tied to physique, placing the source of behaviour either in the disability itself or in the person is neither helpful nor true."

### *Role of Culture*

Behaviour of a physically disabled person is, to a great extent, governed by the value, culture places on his disability. Therefore Meyerson proposes the theory of cultural relativity of disability as a basis for a better understanding of the behaviour of physically disabled persons.

### *Distinction between Disability and Handicap*

In the first place a distinction may be made between disability and handicap. According to Hamilton a disability is an impairment having an objective or medical aspect, while a handicap is an impairment in a particular kind of social and psychological behaviour. Such a distinction makes explicit the common observation that children with identical physical impairments may behave in radically different ways and children who behave in essentially similar ways may have widely differing physiques. Whether it is of maximum utility in

understanding the behavioural data is not certain. It may be of value to postulate that neither disability nor handicap is "objective" in the sense that they are simply descriptions. Perhaps what we could safely affirm is that variations in physique exist; but "which variations will be considered disabilities, impairments, or handicaps is strictly relative to the expectations of the culture in which the person lives, the tasks that are required of him, and the meaning the person himself and others may assign to the variation." <sup>6</sup>

### *Variations in Physique leading to Limitation in Ability*

Small feet of four inches from heel to toe for an adolescent female is a feature of beauty in the Chinese culture which would be cherished by her husband and which enables her to walk with the light and mincing step that is appropriate for a woman. On the contrary such a variation in the structure of the foot in the case of an American girl would be a disability which makes it impossible for her to conform to the norms of her culture and walk and behave as an American girl ought to walk and behave. On the other hand a girl with a large feet may be an "ideal" in the American culture while she will be considered seriously disabled by the Chinese.

Another example from Chinese culture is instructive. It is said that when a powerful man approached the peak of his power, he closed his hands into fists and allowed his fingernails to grow through the palms to the other side. Physically such a person was in a position similar to that of a bilateral hand amputee, but we cannot say that he was handicapped or disabled. He was in a highly desirable and envied position. He had the ability to live without caring for himself or lowering himself to any kind of labour. In western culture, which values purposeful activity, such a "deformity" would be a horrible disability.

We can bring in ever so many examples of cultural relativity of this sort from different cultures. Such examples lead us to the conclusion that a person cannot be considered to have a disability without specifying the situation in which he is expected to behave. "Disability is not an objective thing in a person, but a social value judgement. A society makes a disability by creating a culture in which certain tools are required for behaviour. Variations in physique by themselves have little psychological meaning outside of the frame of reference in which they are evaluated".<sup>7</sup>

Meyerson further discusses this point on the basis of analogies between primitive and modern culture, and with intracultural examples from modern societies. He points out that it may be fruitful to think of physique, and the abilities that are associated with particular variations in physique, simply as *tools for behaviour* and draws the following generalizations; a disability exists only when a person lacks an adequate physical tool for behaviour and this lack is perceived by the culture in which the person lives as making the person less able than his fellows. If a particular tool is not differentiated or required by a culture, its lack or impairment in a person cannot be a disability. If the tool is differentiated and valued by a culture but conflicts with a "higher" physical, social and psychological ability, the lack or impairment will not be perceived as a disability.

### *Variations in Physique leading to Socially Imposed Handicaps*

There are some variations in physique that could create a handicap only socially. Those variations do not directly impose limitations on the abilities that are required by the culture in which the person lives, but they are perceived by the majority as being undesirable. The social discrimination and prejudice against women, Negroes and members of the other minority groups who can be distinguished by their physiques are examples, not of disabilities but of socially imposed handicaps. The handicap is not in the body nor in the person but is a function of the society in which the person lives. This is true also of handicaps that arise from physical standards. These standards often seem as arbitrary and nonsensical as the killing of redheaded infants.

It is evident that social expectations which have the force of standards will influence behaviour. A person who has a socially approved physique will be treated differently and will be expected to behave differently than persons whose physiques deviate from the social ideal. Obviously, therefore, the self-image of the person will also be affected. It is difficult to escape becoming the person that others believe one to be. In large measure the self is created by social interaction with others. No person can develop a wholesome personality if he encounters only derogatory attitudes.

It cannot be claimed that the physically disabled are exceptions to these generalizations. It is not correct to state that the physical limitations we have called *disabilities* invariably call forth universal

social expectations. The roles assigned to the disabled and the behaviour expected from them are not fixed. In Turkey blind men are preferred as readers of the Koran, for their prayers are believed to be more welcome to God than the prayers of others. A blind Catholic cannot become a priest. If the person with a disability has sufficient prestige and status, the desirability of his role may be so great that his disability will be imitated. Princess Alexandra, who became the wife of Edward VII, walked with a limp. At the time she married, a fad spread among thousands of women on the European continent so that they walked with the special, prestigious, limping gait known as the Princess Alexandra Walk.

Hanks and Hanks have shown that individuals with physical variations that are perceived as disabilities are assigned different roles in different cultures.<sup>8</sup> They may be treated as pariahs or as economic liabilities; they may be tolerantly utilized, granted limited social participation, or just left alone. These variations in assigned role, social treatment, and behavioural expectations are not functions of the disability. Instead, the Hanks hypothesize the adverse treatment of the disabled as a function of low productivity or unequal distribution of goods in proportion to the size of the population, the maximizing of competitive factors in achievement and the evaluation of criteria for achievement in absolute ways rather than relative ways.

These are promising hypotheses that appear to agree with the available evidence. Whether or not they are true or whether other hypotheses are equally tenable are problems for further investigation. It would be of great help to know why and how variations in physique lead to the imposing of social limitations or handicaps. However, the origin of social behaviour is a problem that cannot be discussed here. It is sufficient for our present purpose simply to note that variations in physique, with or without ability limitations, may lead to social emulation, social approval, or social limitation.

It is society, far more than the condition of the body, which determines what a person will be permitted to do and how he will behave. All cultures place values on certain aspects of physique, although different aspects of physique may be differentiated as important in different cultures and different values may be assigned to the same variations. Nevertheless, certain generalizations may be made:

1. Physique is a social stimulus.
2. It arouses expectations for behaviour.
3. It is one of the criteria for assigning a person to a social role.
4. It influences the person's perception of himself both directly through comparison with others and indirectly through others' expectations of him.
5. Comprehension of the kind, extent, and degree of socially imposed handicaps on persons with atypical physiques is basic to an understanding of the somatopsychology of physical disability.

### *Variations in Physique leading to Emotional Handicaps*

Some variations in physique do not produce ability limitations nor do they instigate social handicaps. They may be seized upon, however, and utilized by the person as a defense against facing other problems. For example a girl may fixate on a small facial mole and moan that it is ruining her life. If only she did not have the mole boys would like her better; she'd be less irritable; she'd get along better with her parents; she'd be able to study better because she would not need to worry about whether other children were looking at her, laughing at her, and criticizing her. There is clearly no ability limitations. In addition her friends may honestly say that the mole is so small, few people even notice it or if they do, more frequently than not, it is considered an attractive "beauty mark". Nonetheless the girl refuses to be comforted. If she seems unfriendly, irritable, and inconsiderate to others it is "because" the mole on her face makes her so. A similar situation may be encountered in individuals who have normal variations in physique that are socially undifferentiated or not assigned social meaning.

Physique for such individuals has unique personal meanings that are entirely unrelated to ability limitations or to social handicaps. Moreover, it is questionable whether there is any direct relationship between the variation in physique and the emotional handicap. The body in these cases is simply the excuse for, not the cause of, psychological maladjustment. These cases which are essentially

psychiatric in nature do not come within the framework of somatopsychology.

It is unquestionable that normal variations in physique and physical disabilities are sources of psychological disturbances for some children. It is equally unquestionable that similar variations and disabilities in other children are not sources of psychological disturbance<sup>9</sup>. Workers in somatopsychology may differ as to the reasons why the same physical variation leads to emotional disturbance in one child and not in another, but there is universal agreement that variations in physique need not necessarily lead to emotional handicaps.

Except for the psychiatric cases, the following generalizations seem reasonable:

1. No variations in physique requires psychological maladjustment.
2. If an emotional handicap exists in a person who has a physical disability, it does not stem directly from the disability but has been mediated by social variables.
3. The mediation between physical status and psychological behaviour occurs in the following way:
  - (a) The person lacks a tool that is required for behaviour in the culture in which he lives, and he knows that he lacks it.
  - (b) Other individuals perceive that he lacks an important tool and devalue him for his lack.
  - (c) The person accepts the judgement of others that he is less worthy (or to the degree that he is a product of his own culture, he judges himself as less worthy) and devalues himself.

The (a) (b) (c) sequence is a unit. If (a) or (b) does not occur, (c) does not occur. If (c) does not occur, there is no emotional handicap.

### *Variations in Physique leading to a Combination of Disability and Handicaps*

Disability, social handicap, and emotional handicap have been isolated in order to show that they are distinct, though related phenomena. We must here note that different combinations are the rule rather than the exception.

The analysis in itself, however, helps to account for the great variation in behaviour that may be observed in people who vary in physique. Knowing the components of a combination and their inter-relationships especially in the light of cross-cultural contexts, enables us to begin to understand diverse phenomena that previously were obscure and incomprehensible.

We can begin to understand not only the major question of how it is that two similar individuals with similar disabilities can behave in different ways, but also such apparently diverse phenomena as why the behaviour of a child who is blind may change when he understands for the first time that he is blind, and why the task of telling the child is so traumatic for parents.

Moreover, the analysis points to some of the critical variables that affect the behaviour of those who have been judged to be disabled. If we are faced with behaviour that is undesirable, it is possible to discern what needs to be changed. We need no longer conceal our ignorance under the guise of respecting individuality. It may be true that "each person is different," but it is neither true nor helpful to "explain" all reactions to disability in terms of characteristics and unchangeable functions of the disability itself or of the persons.

In actual practice, within a culture that has established standards for physique which seem right and natural, it is difficult for the somatopsychologist to step outside of his own ethnocentrism. Meyerson cites the instance of a young man who became maladjusted on account of his inability to conform to the demands of his culture.

Ever since he was a small boy, Edward G. knew that he wanted to be a policeman. When he was 21 years old, he took the Civil Service Examination for patrolman, and he passed the mental and physical tests with flying colours—except for one item. He was 5 feet 3½ inches tall, and the regulations said that a policeman had to be 5 feet 4 inches tall.

Edward was desolate. Although he knew that it was not true, he claimed that a mistake had been made in measuring him, and he demanded a remeasurement of his height.

For three days Edward remained in bed and had his friends pull on his legs and his head so that he was stretched out to the fullest possible inch. Then, thirty minutes before he was due to be

remeasured, Edward persuaded a friend to hit him a sharp blow on the top of the head with a piece of wood. The blow raised a lump of considerable size.

Edward immediately raced to the examination and had himself measured. The stretching of the previous few days together with the bump on his head was more than enough to raise his stature to the required 5 feet 4 inches, and he was sworn in as a policeman.

Edward was a good policeman. In three years' service he received several commendations and one award for bravery in capturing an armed robber. One day, however, he was called out to march in a parade lined up with other policemen, who also, were supposed to be of minimum height. By comparison, it could be seen immediately that Edward was perceptibly shorter than the others. A "split and polish" officer measured him on the spot and found that he was now only 5 feet 3 inches tall. Two weeks later, Edward was no longer a policeman.

Dismissal from the police force was a great shock. Some of the people Edward had dealt with in the line of duty now taunted him; others laughed. Edward became more and more convinced that he was no good, not useful for anything. If anyone called him "shorty," he flew into a rage. If he couldn't reach something on a high shelf, he was morose for days. "If only I were taller," he said again and again.

At last report Edward was in a "nursing home". He was no psychotic, but neither was he mentally well. Severely maladjusted is probably the term that best describes him.<sup>10</sup>

## **A Scientific Approach to the Understanding of the Behaviour of the Physically Handicapped**

The existing knowledge of how disabilities and handicaps are created is not adequate. Every culture has developed a value system of its own in relation to variations in physique. Changing the negative attitude of a culture towards the disabled would entail centuries of systematic effort. Meanwhile we have to face the practical problem of helping "the handicapped" to live with some measures of usefulness and happiness.

It is obvious that disabled children as a group tend to have more frequent and more severe psychological problems than others. Why does this occur, and what can be done about it?

As is clear from our earlier analysis it is not enough to say, "Mohan is blind; therefore he has severe problems of adjustment". His blindness has to be understood in the context of the culture in which he lives where people pity those who cannot see. The blind are perceived as dependent individuals who must be taken care of and who cannot compete for many of the most desirable goals in life. Mohan as a member of his own culture, tends to see himself in this way. He perceives clearly the low esteem in which he, as a blind person, is held, the prejudice and discrimination that are raised against him, and his lack of status in society. He agrees that he is a less worthy person than those who can see. In this perspective we should say "Mohan is blind and has severe problems of adjustment; he feels himself inferior".

From the above, it is evident that often the social problem is the critical variable and not variations in physique. Some of those who shrink from the physically deformed are aware that a person is not responsible for how he looks and that avoidance is ethically unjustified. The repugnance that they experience is often explained as an instinctive, natural, and helpless feeling. This justification does not seem to be true. On the other hand there is every reason to believe that attitudes toward variations in physique are learned. It often happens that variations that are perceived with horror in one culture are accepted without emotion in another culture. Similarly within a culture there are many individuals who do not feel the culturally sanctioned emotions. Furthermore, many who do experience emotional distress on first exposure to a particular disability can also adapt themselves to the new situations.<sup>11</sup> For example a student horrified at the sight of disabled children at a school for the handicapped changes quickly into the experienced therapist who is only faintly aware of differences in physique but keenly aware of differences in personality.

Disability appears to be as much a problem of the non-disabled majority as it is of the disabled minority. Maladjustment in "normal" individuals with respect to physical disability is widespread. However, we cannot change our society overnight, and social attitudes often present problems that can be dealt with only indirectly.<sup>12</sup>

It appears that a dead end has been reached. If disability is relatively fixed and society is relatively inflexible, that leaves with only the person. In as much as the source of behaviour is not in the person in any psychological, meaningful sense, what can be done?

## *Theory in Somatopsychology*

Meyerson points out that in somatopsychology it is evident that despite considerable research effort, only limited progress has been made in answering the basic question of how physique may be related to behaviour. Examination of the literature shows that considerable progress has been made in other fields, such as medicine, in coping with the problems of disability. In somatopsychology there is still much discussion of the same problems that were seen to be crucial 100 years ago. Meyerson critically reviews and evaluates the different ways of answering the problem by means of "naming explanations", "historical explanations" and "empirical or correlational explanations," used by somatopsychology.

### **Naming Explanations**

In an explanation of this nature, the behaviour is first described, then a name is assigned to the behaviour, and finally the behaviour is explained by the name. In other words, things are because they are. They act as they do because that is their nature. For example, heavy objects have the essential nature of heaviness; that is why they fall to earth. A sail boat moves because it is a sail boat and that is its nature. Obviously explanations of this kind lose sight of the relevant relationship of things or phenomena. Only when we say that an object falls because of its relationship to the earth and a boat moves because of the relationship between the area of its sails and the strength of the wind do we provide a real explanation to these two phenomena.

The same naming phenomenon occurs in somatopsychology on a more sophisticated level. For instance, a certain person is deaf and he engages in the behaviour that may be classified or described as being suspicious of others. If one attributes the cause of suspicion in the case of a deaf person to his deafness itself it is just a naming explanation and not a scientific explanation on which generalization can be made. The real reason may be that a deaf person does not know what other people are talking about him and he feels anxious about it. Naming of behaviour often yields a satisfying feeling that the behaviour has been explained. Actually nothing has been explained. A word has been substituted for an observation of behaviour.<sup>13</sup>

## Historical and Contemporaneous Explanations

Historical explanation leads from the present to the past. For example a child is limping because he had polio when he was five years old. Such an explanation overlooks many relevant facts. Limping can be the result of other diseases or accidents; all children who had polio will not limp. The fact that the child had polio is a past event. The child does not have polio now, but only a residual from the polio. It is not possible to influence past events but only the factors that are operating in the present. Contemporaneous explanation leads from the present to the future. Again let us consider the limping child. A physician may offer a contemporaneous explanation by saying that if nerves  $x$ ,  $y$  or  $z$  are destroyed the muscles in the legs that are innervated by these nerves will atrophy and the child will limp. This explanation is independent of any particular child and of any particular disease. It holds without exception in every case. Any injury that destroyed nerves  $x$ ,  $y$  or  $z$  will produce the same behaviour. Control of this behaviour is not possible, but knowledge of the relevant context between nerves and muscles and limping guides future investigation. "Is there some way of regenerating these nerves? Is it possible that other intact nerves may be attached to the affected muscles?" In short, historical explanations lead to excuses. Contemporaneous explanations lead to continuous investigation.

Meyerson points out that rehabilitation of the disabled is presently plagued with this problem. Few researchers in somatopsychology are as yet thinking in terms of contemporaneous field-contextual descriptions. Almost all explanations are in terms of naming, assigning qualities to the individual, or tracing history.

It is necessary only to see a deaf child who talks and a blind child who is not dependent to realise that historical explanations do not explain. From the standpoint of contemporaneous explanation children who have physical disabilities may tend to show certain kinds of psychological behaviour, not because of their histories but because of the psychological forces that are presently acting. If these forces can be understood and controlled, behaviour will be amenable to change.<sup>14</sup>

## Empirical or Correlational Explanations

Empirical method is basic to science. There are two ways of employing the method. One way is to make observations or conduct

experiments to test a working hypothesis or a theory. A second way is to try to build up an explanatory theory from the observations. The first way is more generally used and is more productive. The second way has sometimes been characterized as a determined attempt to obtain knowledge from ignorance. The difficulty with the second way is the risk of human reason being misled when the relevant context is not known.

For example, there is a statistically significant relationship between sight and intelligence. Blind children as a group, earn lower I.Q.'s than children who see. There is nothing wrong with such a statement as a description, but it is misleading if it is used as a cause effect explanation or as a means of prediction for the individual case. It cannot be said that blind children obtain lower I.Q.'s because they are blind. There are some blind children who test at the genius level. If the I.Q. of a particular blind child is explained in terms of his blindness, there is no way of explaining the high I.Q.'s of other equally blind children. A given correlation or empirical relationship is meaningless aside from the theory that is used to explain it. The most adequate theory will account for the negative cases in terms of the same concepts that are used to explain the positive cases.<sup>15</sup>

Thus Meyerson points out the inadequacies of these types of explanations in establishing a scientific theory which would serve as a basis for prediction.

### *Some Concepts in Somatopsychology*

Social Psychologists are not concerned with physical disability per se, but with the behaviour that is associated with or appears to result from physical disability. The emphasis is on behaviour. Psychological concepts, therefore, are required. We shall examine two such psychological concepts which permit the ordering of social-emotional behaviour. These are the concepts of "new psychological situations" and "overlapping psychological roles." These ideas were formulated by the late Kurt Lewin. Elaboration and application to the physically handicapped were made by Roger. G. Barker and associates. The following discussion is based mainly on their work.<sup>16</sup>

### **New Psychological Situations**

Let us consider the case of a girl just going to be married. She is at the threshold of a new psychological situation. Obviously she is

faced with two alternate situations: on the one hand, her lovely home with beloved parents, loving brothers and sisters and happy memories of childhood; on the other hand, sweet expectations of a bright family life with a loving husband, children, a new home and new experiences which any girl of her age would like to have. In order to enter the new situation she has to leave the existing one. This arouses a conflict in her mind. Both the situations have attractive and repulsive characteristics in relation to each other. The home in which she was born and brought up provides her with a sense of security leaving no room for anxiety or embarrassment. Relationship and behavioural patterns are well structured and known. The new home situation is alien to her. Considerable degree of uncertainty and anxiety overwhelm her thoughts. The relationships are unfamiliar and the behavioral patterns call for adjustment.

Any person, adult or child, handicapped or non-handicapped, confronting a new social psychological situation, will have to pass through experiences similar to those described above.

In such a situation relationship and behavioural patterns are unstructured and unknown for the person entering it. The only attraction for him is a hope that some positive goal or source of satisfying an inherent urge or social need is present there.

#### *Characteristics of a New Psychological Situation*

The following are some of the characteristics of a new social psychological situation.<sup>17</sup>

1. In a new psychological situation the location of the goal (what it is and where it lies) and the ways and means of achieving it are unknown.
2. The new goal has its own attractiveness and repulsiveness.
3. The goal and its circumstances would appear to change in relation to the change in the outlook and attitude of the person.

From these characteristics it would be possible to make certain predictions about the behaviour of a person facing a new psychological situation.

1. He will manifest a wandering, vacillating, unstable, trial and error behaviour. Since the situation of the goal and the means of achieving it are unknown, behaviour cannot be parsimonious. It

must be tentative and cautious. The person will be alert to small cues. He will be easily influenced by peripheral stimuli. Behaviour will change as the person's perception of the situation changes. If it appears that he is getting closer to the goal, he will do more of what he has been doing. If it appears that he is moving away from the goal, he will change his behaviour. Early behaviour will be cautious, but if it is unsuccessful, it will be followed by more extreme behaviour.

2. Frustrations will accompany repeated trial-and-error behaviour. Emotionality and disruption would be manifested by the person as a result of frustration.
3. The person will be in conflict. He will attempt simultaneously to reach the goal in the new situation and to withdraw to the safety of the old situation. The conflict will be intensified if the goal is highly attractive and the old situation relatively unattractive. Conflict will be intensified further if induced forces, external to the person, block the return to the old situation or strengthen the factors making the new situation attractive.<sup>18</sup>

It is now possible to make some 'if-then-always' statements: A person will enter a new social psychological situation if the social-psychological forces acting upon him toward the new situation are greater than the forces away from it. If a person enters a new psychological situation, frustration and conflict, and the emotionality and behaviour disruption that accompany frustration and conflict, will occur. There are no exceptions. It is true for adults as well as for children. It is true for the physically normal as well as for the physically handicapped.<sup>19</sup>

### *Application to the Disabled*

Now we are in a position to understand why the physically disabled, as a group, tend to have more frequent and more severe problems of adjustment. They are more frequently placed in new psychological situations which place severe, traumatic demands upon them. When a person is placed in a new psychological situation, he must behave according to the demands of the situation. People who incur physical disabilities do not become different kinds of people as a direct physical or physiological function of the disability. They remain the same kind of people but now, by reason of their disability, they may be placed in different life situations. Especially, they may be

placed much more frequently than able bodied persons in new social psychological situations. Their behaviour will change according to the frequency and the degree of "newness" in the situations they encounter.<sup>20</sup>

The behaviour of a physically disabled person who is not maladjusted may be understood in the same terms and placed on the same continuum. Such individuals, for reasons which remain to be more fully described, are not in new psychological situations.

It may be speculated that some disabled persons successfully avoid new psychological situations. Other disabled persons may be in positions of special status or power. For example the situation of a blind college lecturer, who is in a position of authority where he can demand the attention of his class is markedly different from the situation of a blind college student. The lecturer commands a superior position by virtue of greater knowledge and his power to give or to withhold grades. To a great extent he can arrange the class to suit himself, taking full advantage of his oral skill overriding his limitations in writing or drawing on the blackboard.

In this instance the blind lecturer is not in a new psychological situation and cannot be expected to show the behaviour that results from new psychological situations. If he is equally powerful or skillful in other life situations, he will be a blind man who is not maladjusted, and we can readily understand why he is not emotionally disturbed. He would not be an unexplainable exception.

The personal characteristics and the past history of different disabled individuals, of course, may result in a superficially different behaviour in the new situations.<sup>21</sup> Some individuals may be self-conscious, some may withdraw, some may seem to be aggressive. These behaviours, however, are only phenotypically different. Genotypically, they may all be ordered to the "cautiousness" that is required by the new psychological situation.

One great value of this concept is that it leads immediately to methods of control over situations and behaviour. If it is undesirable for the physically disabled to be maladjusted, one remedy would be to reduce the "newness" of their life situations.

From the foregoing analysis it is clear that the critical variable is no longer the physical disability, with which psychologists and

sociologists cannot deal, but the "newness" of the social and psychological situation. Disabilities have psychological effects not because it is in the nature of disabilities to require certain behaviour but because they force the person more frequently into new social psychological situations.<sup>22</sup>

### *Some Dynamics of New Psychological Situations*

The situation of a blind student may be taken as an example. In contrast to the well-ordered structure that may be created by a blind professor, the situation of a blind student may become new whenever an instructor writes on the blackboard. The psychological effects of this situation depend upon whether the student is required to face it or adapt himself to it.<sup>23</sup>

If the instructor says, "These two words, phenotypic and genotypic, which I have written on the board are important. You must remember them", the situation is not new for the blind student. He can remember the concepts without seeing them written. The goal of remembering is within an old and familiar situation. His blindness will cause no emotionality, no frustration.

If the instructor draws a diagram and then says, "The diagram shows only what I have just told you. You need not remember it." The situation may be new, but the blind student is not required to enter it.

On the other hand if the instructor says, "This diagram is basic. You must be able to reproduce it. I will ask for it in the next examination" and if the student does not know how to reach the goal of learning to reproduce the diagram, the situation is new and the student must enter it. The strength of the force acting on the student in the direction of the new situation is directly proportional to the attractiveness of the goal, i.e. the student's aspiration to attain it. The greater the aspiration, either directly for knowledge or indirectly for the ability to give a correct answer on the examination sheet and thereby obtain a high grade, the greater the emotionality and behavioural disruption that will occur.<sup>24</sup>

Obviously the same analysis is possible for other kinds of physical or social situations and other kinds of physical disabilities.

It is now possible to discuss individual differences in a meaningful way. Not all blind individuals react emotionally when another person draws on the blackboard. Some blind people don't go to college in the first place and thereby avoid the many traumatic, new social and psychological situations in which blind students may be placed. Among those who do go to college, some, by reason of greater intelligence or better guidance, may prepare themselves in advance so as to reduce the newness of the situations that may be encountered. The blind student who has arranged for a classmate to trace every diagram into his hand, to reproduce it later in three dimensions, and to check the correctness of his practice drawings, has made great progress towards his goal. In his case the situation is not new; it is well structured. The various steps that would lead him to immediate and long time goals are known. So the new situation will not bring about (cause) any change in his behaviour.

Another "kind" of blind student – perhaps one who is less intelligent, less well guided, or too proud to seek or accept the help he needs, who does not know the sequence of steps that will lead to the attainment of his goal – will be in a new psychological situation and will show the predicted behaviour. It is evident, however, that this will occur only indirectly depending on the basic personality of the individual. The behaviour is amenable to change with the change in the structuring of the new situation.<sup>25</sup>

### **New Social Psychological Situations in Physical Disability**

There are three kinds of new psychological situations that may be encountered by the physically disabled person.<sup>26</sup>

1. There are situations that are new because the person has never experienced them. It is common knowledge that the child with a disability is frequently overprotected or rejected by his parents and others. He may be deprived of the common cultural experiences that are open to the non-disabled. The cerebral palsied child or the blind child may never have been exposed to the learning experiences of "going to the town with mother," "playing outside with the neighbours' children," or "selecting and buying a toy." Experiential background in such cases is obviously limited. The capacity to cope successfully with a wide variety of life situations has not been permitted to develop.

In technical terms, the psychological worlds of disabled children may be smaller and less differentiated than those of physically normal children.

The practice of institutionalizing disabled children imposes some further restrictions upon the development of their ability to get integrated into the culture in which they live. Family living experiences, in all their warmth and all their opportunities for learning may be drastically reduced. Practice in making decisions, even about such simple things as the time of rising or going to sleep, or when, where, and with whom to play, may be sacrificed to the need for running an institution efficiently. It is not surprising, therefore, that disabled children may reach adulthood without knowledge of the sequence of actions that will lead to the attainment of desired goals. To the degree that they do encounter such new, unstructured situations, they will behave as the situation demands.

It is evident that many situations that are new because they have not been experienced are unrelated to disability. Activities which lead to increasing the scope of behavioural possibilities, and to the structuring of the situations, therefore, will reduce the maladjusted behaviour that is a function of newness.

2. Some situations are new because the person lacks a culturally required tool for behaviour. He is partially or totally unable to structure the new situations.

It must be emphasised that psychological newness is not equivalent to geographical or physical newness. A driver may never have driven to Shimla, but if he is able to read maps and follow route markers such a trip would not be psychologically new. The field is well structured. Similarly, if a person is confident of the technique of acknowledging introductions and the etiquette of behaviour at a party, he may meet many new people in new surroundings, but since the sequence of steps to "making a good impression on others" is known, the situation is not psychologically new.

On the other hand, a disabled person may enter the same physical situation repeatedly and it may be new each time. The blind child, for example, may be in a new psychological situation every time he leaves his home to go to school. Along the road ditches may have been dug, barriers erected, or there may be obstacles on the sidewalk in places that cannot be anticipated in advance. Each walk, each

street to be crossed, may be a new adventure that requires great cautiousness. Similarly, the congenital deaf child rarely knows in advance if he is going to be able to read the lips of the people who speak to him or if others will understand his laboriously acquired, but imperfect, speech. Each time he tries to speak or to lip-read, the situation is new if it cannot be structured. Knowledge from past experience that communication will be easy, of course, will reduce newness, but knowledge that communication will be difficult leaves the field unstructured.

Behaviour in new situations, it will be recalled, is oriented to a goal. The forces toward the goal may arise from the motives of the child, from induced forces from without, or from a combination of both. The deaf child may wish to attend a regular school for normally hearing children or his mother may insist on this. In order to stay, it is vital that he "makes a good impression" on the teacher. One means to this goal is to have speech that can be understood and to be able to read the lips of others. If, however, the teacher and the other children only sometimes understand the deaf child and only sometimes does the deaf child understand others, each act of communication is psychologically new. The child can't plan consistently. He can never be sure of what to expect. New situations, therefore, are encountered with a frequency that is rarely, if ever, experienced by normally hearing persons. This is true for individuals with other kinds of disabilities, too.

Every disabled person in any culture is going to be frustrated by the new psychological situations that arise because he lacks an appropriate tool for behaviour. The deaf persons today do not live in an antique culture where signs are generally understood and sometimes preferred for communication. Nor are the crippled persons living today in an environment where there are no steps to be climbed. They live in a culture where vocal communication and good locomotor ability are required. In some degree a disabled person is going to be unable to function in our modern culture as well as he would, if he were not disabled. He is going to be exposed more frequently to new social and psychological situations that are directly related to the disability.

There are no magic solutions here; however, the concept of new psychological situations points out relevant areas of investigation.

- (a) Many new situations can be avoided. The deaf person can associate only with individuals who know the language of signs. The blind person can sit at home and listen to the radio or the

talking book. The positive and negative consequences of such a behaviour and their relative merits and demerits are a matter to be ascertained by researchers.

- (b) Specific skills to reduce newness can be taught, tolerance for frustration can probably be learned and the potency of some goals can be reduced.

3. Some situations are new because of the social stimulus value of the disabled persons. Disability has many meanings to others. The disabled person often does not know when he enters a social situation whether he will be an object of curiosity, pitied, sympathized with, "helped," patronized, exhibited, praised for his abilities, avoided, or actively rejected. Only rarely will he be seen as a person who has psychological properties beyond the disability. More frequently he will be identified with the disability and other persons will react to him in terms of whatever the disability means to them. These meanings are often extreme. They are rarely neutral.

Reduction of newness in this situation has two aspects:

- (a) The education of the public as to the non-identity of physical characteristics and psychological characteristics.

This requires a change in well-developed stereotypes, and it may be difficult to achieve. It may be difficult not only because able-bodied persons may have a "need" to perceive the physically disabled as "inferior" persons, but also because disability is not infrequently phenotypically related to other undesirable characteristics. For example, if large numbers of cerebral palsied persons, through no fault of their own, are poorly educated, or if an appreciable proportion of the cerebral palsied are also cortically brain damaged, it requires a drastic change in customary modes of thinking to reserve judgement about a particular, unknown individual who is seen to have cerebral palsy. This is a part of the general problem of prejudice that is experienced by other minority groups also. Sufficient progress has been made toward the solution of this problem to indicate that reduction of prejudice in the public is possible. Change will not be easy, however, and it will not be accomplished quickly.

- (b) The education of the disabled person in specific social skills which will facilitate his acceptance as a person.

The physically normal person is often well-meaning, but he does not know how to behave toward another whom he perceives to

be different. What sort of behaviour will reduce the newness of the situation both for the disabled and the non-disabled person?

This analysis indicates that the disabled person lives in a world that is frequently ambiguous both for himself and for others. He may frequently be placed in a strange and terrifying world in which he is expected to cope with new situations to which he has not previously been exposed; new situations in which his lack of a tool hampers adequate structuring; and new situations in which his social role is not clear:

If new social and psychological situations have the properties that we have derived, and if disabled persons are more frequently placed in new social psychological situations, it is not surprising that, on the average, the disabled have been found to be less well adjusted than others. If the theory is true, however, the sequence of steps that will lead to good adjustment is equally clear.

### **Overlapping Psychological Roles**

The disabled person lives in two psychological worlds. Like everyone else, he lives in the world of the non-disabled majority. He also lives in the special psychological world that his disability creates for him.

Many activities are common to both worlds, but some activities are engaged in primarily by disabled persons, while other activities are open only to the physically normal. The world of the physically normal is larger in the sense that it contains relatively more behaviour possibilities and is amenable to greater differentiation. This dichotomy is not unique to disability, however. It can also be applied to any of the ways in which individuals differ. There is a psycho-social world of women and a psycho-social world of men; a world of Negroes and a world of Whites; a world of Hindus and a world of those who belong to other religions; a world of the stupid and a world of those with greater intelligence; a world of the poor and a world of the rich.

In as much as every person holds membership in many different groups, he must play multiple overlapping roles. This, in itself, is not a source of difficulty. For example, a young man can be simultaneously a son, a brother, a nephew, a college student, a football player, and musician. Each of these roles, in some degree, requires a different behaviour than the others; but in general they are compatible with

each other. The person is able to play the role that is required by the different constellations of psychological and social forces that act upon him.<sup>27</sup>

### **Interfering Overlapping Roles**

At particular times, however, the different roles may be interfering. A man can play football in the afternoon and direct a musical party in the evening; but he cannot play on the university football team and direct music simultaneously. The latter situation will create conflict in the degree that the two roles are considered equally desirable and are not seen as different, but equally good avenues of recreation.

The conflict will be resolved as the interplay of social and psychological forces acting upon the person impels him in the direction of one goal or the other.<sup>28</sup> These forces may arise from the greater, intrinsic desirability of one goal; differences in social prestige attached to the different behaviours; the relative ability of the person to do one or the other well; the amount of time that is required for practice relative to the amount of time needed for study or the wish to have an active social life; the relative scholarships given the football players and music players; plan for the future; and other factors. The important point here is that the person is amenable to the forces that arise from each situation. Both roles are open to him. He can play either, or, within limits change from one to the other.<sup>29</sup>

### **Antagonistic Overlapping Roles**

Conflict will be intensified if the overlapping roles are antagonistic so that responding to one set of role-determiners automatically rules out the other. A newly married young man decides to go for a film with his fanciful bride. Being a dutiful son he informs his mother of his evening programme. She also expresses her wish to go with him. But he understands that his young wife doesn't welcome the presence of the old mother. How will he respond to such a situation? If he behaves as a docile son it would create tension in his marital relationship. If he rejects his mother's wish he incurs her displeasure. He cannot please both, and whatever he does some one will be hurt. The situation will be resolved as before in terms of the relative attractiveness of the two roles and the potency of the social psychological forces acting.<sup>30</sup>

## Overlapping Excluding Roles

The greatest conflict occurs when the person rejects the roles that are open to him and strives for a role that he cannot attain or at least that is relatively inaccessible to him.<sup>31</sup> We shall call these "overlapping excluding roles." It does not matter greatly at the momentary point of conflict whether the barrier between the person and a desired role is an ability barrier or a social barrier.

The psychological world of a girl belonging to a lower class family in contrast to the world of a girl hailing from an aristocratic family will explain this point. It is commonly accepted that an aristocratic girl would have a wide range of behavioural possibilities which are not within the reach of a lower class girl. Other things being equal, the aristocrat girl will be frequently sought out. She can be highly selective in her relationship with others. Status and prestige accompany aristocracy. The gains are not only immediate but extend far into the future. Favourable marriages and great social mobility as a function of aristocracy are not unknown.

These are no trivial goals for many girls from the lower class. It is not surprising that many lower class girls when they perceive the great value placed on aristocratic behaviour and the attractive behavioural possibilities it creates, desire this role for themselves. A lower class girl may try to spend as much money as she can on costly dress, ornaments (often imitations), perfumes etc., with a hope to be as much impressive as possible. But rarely is it possible for a lower class girl to achieve the acceptance received by an aristocratic girl.

Many girls who are not fortunate to be members of an aristocratic family handle this problem very well. They do not place a high value on the role from which they are excluded. They contend that family prestige or wealth are not so important, perhaps simple living and personal virtues are of higher values.

Aristocracy has a meaning in social groups. A lower class girl who cannot keep up the standard of the upper class society may be looked down upon and will be treated with contempt. In as much as every one tends to accept the judgements of important "others", it is extremely difficult to avoid internalizing feelings of inferiority and unworthiness.

If the goal is inaccessible or unattainable, it does no good to continue to place a high value on it simply because one has a craving for nobility. Nobility is appreciable, but its absence or relative lack does not make a person less worthy nor is it decisive in society's judgement of him.

Similarly, a goal may be unattainable because the path to the goal is blocked by a social barrier. It doesn't matter from the standpoint of behavioural consequences whether the social prejudice is unjust. If the social barrier is strong, only rarely is it possible for the determined person to break through it. Prejudice is usually not amenable to reason nor will it be decreased by "good" behaviour on the part of the person. If the person is unable to relinquish a strong emotional attachment to an unattainable goal, the resulting behaviour is clearly predictable.

An implicit understanding of this principle is perhaps one reason why it is a normal human tendency to stop comparing one self with others who are different. The average college student compares his test papers not with geniuses but with others on his own level. The athlete who plays both football and basketball but is able to make it only to the football team not only plays more football and less basketball, but he comes to consider football a "better" game. The path to mental health is travelled when a person places his highest values on what he has got or can attain and places lower, neutral values or non-comparative values on what he hasn't got or cannot attain.

We are now in a position to make an additional if-then-always statement: If a person, because of his own forces or induced forces, is impelled to strive for a goal that is unattainable, because of ability barriers or social barriers, the constellation of behaviour commonly referred to as psychological maladjustment will occur. The greater the forces towards the goal and the stronger the barriers which surround the goal, the greater will be the behavioural disruption.<sup>32</sup>

### **Application to the Physically Disabled**

Individuals who have physical disabilities also have other roles. Like others, they encounter their fair share of overlapping compatible, overlapping interfering and overlapping antagonistic roles. They are almost unique, however, in being exposed more frequently, sometimes for a lifetime, to overlapping excluding roles. If this is true, it is not

surprising that according to available evidence, disabled persons tend to be maladjusted more frequently than others.<sup>33</sup>

The excluding overlap occurs between the role of the disabled person and the role of the physically normal person. It will be seen that the psychological forces acting upon a normal person are more intense than those acting upon a physically disabled person. In popular language, it is "better" to be physically normal than to be physically disabled. The reasons are easy to understand. The world of the physically normal is larger and better structured with desirable behavioural possibilities. The world of the physically handicapped is relatively underprivileged.

The slogans prevalent in rehabilitation, that the goal of the handicapped is to "be normal, achieve normality, become as normal as possible, be treated like normal, do the same thing as normal children and in the same way," are not simply figures of speech. They reflect the reality of underlying psychological and social forces.<sup>34</sup> However, the role of the disabled person excludes the role of the non-disabled person in every situation where the disability makes a difference. The disabled person is separated from some desirable normal goals by a strong barrier. This barrier is the result of ability limitations and social limitations, both of which are relatively impermeable. It is dynamically clear, therefore, that disabled persons are often placed in a position where they are impelled to strive for relatively inaccessible or unattainable goals. When the barrier is impermeable and the goal unattainable the behaviour predicted for overlapping excluding roles will occur. Living on the barrier between overlapping excluding roles may be considered a form of psychological suicide.

If it is undesirable for disabled persons to be maladjusted, another solution has become clear: Reduce the frequency of overlapping excluding role situations.<sup>35</sup> A few examples of specific situations may clarify this abstract formulation.

Assume that a person who is blind wishes to be treated like a normal person, just like anyone else. His host at a party takes him at his word and asks him to pour the drinks. How should he behave? Theoretically he has a choice. He can pour like a blind man or he can try to pour like a seeing person. If he pours like a blind man, he will hook a finger over the lip of the glass. When the liquid reaches his

finger tip, it is full. Many people however, are somewhat squeamish about having other people's fingers in their drinks. If he poured in this fashion he would call down upon himself the intense hostility of the assembled group. Perhaps he would hear derogatory comments about blind people being invited to parties. However, he has already rejected the role of the blind person and decided to try to play the role of a normally seeing person. He must, therefore, accept the assignment and attempt to pour drinks like a normally seeing person. He cannot bring out his blindness as an "excuse." Nevertheless he is not a seeing person. He is blind. In this situation he cannot behave like a normally seeing person for he does not have the necessary visual tool. The best he can do is to depend on change in weight or change in sound to estimate when a glass is full. This is both a more difficult and a less effective procedure than visual inspection. Some glasses may be correctly filled, but it would not be surprising if some glasses were filled to overflowing and some were left only partially full. He may go through the motions of behaving like a seeing person, but he cannot actually play the role. He knows, and all who see him will know, that he is blind.

The significance of this example is that similar situations occur with great frequency in the life of every disabled person who rejects the behavioural possibilities that are open to him as a disabled person and strives instead to live a role that is not possible. To the degree that the person's life situation requires "normal" behaviour, and to the degree that the person places a high value on entering situations that are partially or totally closed to him, he will be maladjusted. Moreover, the denial of the disabled role will not protect him from the social discrimination of those who perceive that he is disabled. He will be denied acceptance and entrance into privileged situations by those who respond to his disability no less frequently than disabled persons who accept the disabled role when the disabled role is appropriate.<sup>36</sup>

It is easy to contend that the disabled person must "accept" his disability, but this is only a meaningless and contradictory platitude if the underlying situation of disability is not understood. If "acceptance" means that the person must be content with an inferior position that requires him to acknowledge his inferiority as a person and permits him to strive only for intrinsically less satisfying goals, "acceptance" is difficult. If there is no assurance that society will "accept" the disability also and not penalize the person for it; it is unrealistic to endow "acceptance" with the qualities of a panacea.

## The Problem of Acceptance

In almost every other overlapping excluding role situation, there are some who will contend sincerely, and not as a sourgrapes mechanism, that the possible role is just as good as or better than the excluded role. It is just as good to be a woman as to be a man; it is just as good to be a Hindu as to hold other faiths. Many people believe that it is not good to be too smart, too rich, too beautiful or too successful. Disability is unique in that almost no one believes it is just as good or better, in any sense, to be disabled than to be nondisabled. No one believes that it is not good to be too healthy. This means that some of the strongest forces in our society act upon disabled people to deny their disabilities and impel them to strive to be non-disabled<sup>37</sup>. We do not wish the disabled to "accept" their disability. On the contrary, we insist that they deny it.

Consider the case of a medical student who aspired to be a doctor but had to discontinue his studies due to failure. He knows that he would never be able to attain the high status of a doctor, in the normal course. However, he puts up a false appearance of a medical practitioner by forging certificates and other credentials. Any psychologist would say that such a person is seriously maladjusted. His wish to be a doctor in a society which places high premium on this profession is quite understandable, but mental health lies only in the direction of accepting his limitations and taking pride in what he is capable of.

Consider now the treatment and evaluation of the disabled. A child is deaf. On the one hand we say, verbally, accept the deafness. On the other hand, however, we give him a hearing aid, and compel him to spend most of his waking hours in listening to sounds that he perceives so faintly and distortedly that he cannot interpret them; we urge him to attempt to produce sounds that he himself cannot hear or monitor for himself; and we drill him in assigning meaning to the fleeting movements of the lips that are only by-products of the vocal sounds of others. In some cases this process is crowned with striking success. Some degree of adaptation occurs in many. For all deaf children, however, we make it clear that the child is not to accept his deafness. On the contrary, he is to exert himself to the utmost to be not deaf. He is not to use the signs which are easier for him. He is to speak even though his speech will never be as good or as "normal" as the speech of a normally hearing person. He must continue to

strive with all his energy for goals that, at best, are only partially attainable. In addition, his adjustment is evaluated, in part, according to the degree to which he associates with normally hearing people and avoids other deaf persons. The inferiority of "the deaf" is made clear to him, for he is encouraged to assert his membership in every other group to which he belongs, but he is not to take pride or seek satisfaction in the psychological world of the deaf.

Deaf children learn quickly that it is "better" to be a hearing person than be a deaf person. In the most "progressive" schools where deaf teachers of the deaf are never employed "because they can't teach speech," the children see that the important people, the teachers, the supervisors, and the technicians are hearing people; the gate-keeper, the cooks and the servants are deaf people. Little children who wear individual hearing aids point to them proudly and indicate, "I hear." Others point to their own empty ears and shrug their dismay.

Similarly, a child has cerebral palsy and doesn't walk. Of course, it is necessary to accept the disability; but, it is equally necessary for the child to struggle with all sorts of therapies to try to overcome at least some aspects of the disability.

This is not an argument for or against particular methods of education, but an attempt to attain clarity. It may be socially desirable that deaf, blind and crippled children behave as far as possible, as not-deaf, not-blind, and not-crippled. It may be necessary for them to live on the barrier between overlapping excluding roles. If this is so, however, it is a great advantage to understand clearly the structure of the situation. We cannot justly create a situation which leads to maladjustment on one hand and belabour the disabled for their maladjustment on the other.

It is conceivable that there are advantages and values in maladjustment. George Mathew Adams, the American newspaper columnist, who often reflects popular feelings once advised his readers, "Be anxious." Everything worthwhile has been accomplished by people who were anxious to "get ahead".

In an age that worships achievement and "success," perhaps anxiety and insecurity are a small price for progress. It is certain that among the disabled, the highest accolades have gone to those who did not accept, but denied it and achieved "in spite of". It is equally

certain, however, that they paid for this recognition and praise with anxiety, conflict and frustration. The former undoubtedly are valuable, but the latter are not the fruits of adjustment. There is nothing to be gained by confusing accomplishment with adjustment. Fortunately, we need not be caught on the horns of the dilemma. If the theory of disability presented in this chapter is true, solutions for some of the critical problems of disability are implicit within it.<sup>38</sup>

## Footnotes

1. B.D. Bhatia, "Psychology of the Handicapped", *Towards a Fuller Life*, Department of Social Welfare, Govt. of India. p.197.
2. Ibid.
3. Lee Meyerson, "Somatopsychology of Physical Disability", William M. Cruickshank. *Psychology of Exceptional Children and Youth*, p. 2.
4. R. G. Barker, B. A. Wright, L. Meyerson and M. R. Gonick, "Adjustment to Physical Handicap and Illness" *A survey of the social psychology of physique and disability* (New York: Social Science Research Council, 1953). *ibid.* p.3.
5. L. Bender and A. Blau, "The Reaction of Children in Sexual Relations with Adults," *American Journal of Orthopsychiatry*, 7 (1937): pp 500-518 *ibid.* p. 6.
6. K. W. Hamilton, *Counselling the Handicapped in the Rehabilitation Process* (New York: The Ronald Press Company, 1950) *ibid.* p. 9.
7. William M. Cruickshank, *ibid.* p. 12.
8. J. R. Hanks and L. M. Hanks, Jr. "The Physically Handicapped in Certain Non-Occidental Societies," *Journal of Social Issues*. 4 (1948), pp 11-20. *ibid.* p.17.
9. H. R. Stolz and L. M. Stolz, "Adolescent Problems Related to Somatic Variations," in *National Society for the Study of Education, Forty-Third Year-Book part I*, (Chicago: University of Chicago Press, 1944). *ibid.* p. 19.
10. *ibid* pp. 19-21.
11. *ibid.* p. 23.
12. *ibid.*
13. *ibid.* pp. 28-29.
14. *ibid.* pp. 30-33.
15. *ibid.* pp. 33-36.
16. *ibid.* p. 37.
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18. ibid. pp. 39-40.
19. ibid. p. 40.
20. ibid.
21. ibid. p. 41.
22. ibid. p. 42.
23. ibid.
24. ibid.
25. ibid. p. 43.
26. ibid. pp. 44-49.
27. ibid. p. 50.
28. ibid.
29. ibid.
30. ibid. p. 51.
31. ibid.
32. ibid. pp. 51-54.
33. ibid. p. 54.
34. ibid. p. 55.
35. ibid.
36. ibid. p. 56.
37. ibid. p. 57.
38. ibid. pp. 58-59.

## CHAPTER V

### MENTAL ABILITY AND ACHIEVEMENT

In the previous chapter we discussed in detail the fundamental relationship between physique and psyche or body and mind and the theoretical basis for a psychological analysis of the behaviour of the physically disabled. Our attempt in this chapter is to understand, as clearly as possible the psychic life of the disabled in the light of a good number of studies conducted by scientists. Within the last five decades there has been an upsurge of interest in this field. The result has been an array of scientific research on different aspects of the personality and behaviour of the physically disabled.

It would be wrong to presume that the physically disabled has a psychology categorically different from that of the non-disabled. However, physical disability combined with social and cultural impediments exert limitations on the normal development and functioning of the psychic life of the individual. It manifests itself in deviations or distortion in such areas as intellectual capacity, learning, personality development and personal and social adjustments of the disabled individuals.

Though there are marked differences in the extent and level of influence each type of disability exerts on the individual, studies invariably show that there are many things common for these groups especially in the areas of personality and adjustment. In this chapter instead of dealing with the different types of disabilities separately we shall examine the psychology of the physically handicapped in the two main areas, intelligence and educational achievement.

## INTELLIGENCE

In recent years, many a psychologist has attempted to measure the intelligence level of handicapped groups and individuals. These studies resemble each other in methodology, treatment of data and results. In the following paragraphs we shall review some of the major studies and their findings in different areas of disability.

### **Orthopaedically Handicapped**

#### *(a) General Problems*

Very few investigations have been conducted in recent times regarding the intelligence of crippled children as a group. Lee Meyerson reports the results of a study of the intelligence of 148 crippled children conducted in 1931 in the Children's Orthopaedic Hospital in Seattle, Washington, in which she utilised the Binet Test.<sup>1</sup> The age range of her group was between three and sixteen years; the intelligence quotient ranged from 35 to 138, with a mean of 86.8. Meyerson found that the children with poliomyelitis had the highest mean intelligence quotient score, 92. Children with "spastic paralysis" had a mean intelligence quotient of 69; tuberculosis of bone and joints, 88; congenital deformities, 61; and central nervous system involvements, 74. Witty and Smith have reported a study which included 1480 crippled children.<sup>2</sup> They obtained a mean intelligence quotient of 84.5 with a range from 50 to 130.<sup>3</sup>

Roberts and Griffiths<sup>4</sup> present differing results with two populations of crippled children. The former, studying a group of 300 crippled children excluding the cerebral palsied, obtained a mean intelligence quotient of 88, while the latter recorded a mean quotient of 103.9 from a group of 98 children with poliomyelitis. Fernald and Arlitt<sup>5</sup>, in one of the earliest studies reported a mean intelligence quotient of 82.35 and a range of 30 to 138 in a group of 194 crippled children which included many different types of physical conditions, including cerebral palsy.

#### **(i) Test Results**

Practically all these studies appeared prior to the publication of the 1937 revision by Terman and Merrill of the Stanford Binet Intelligence Scale. Since this scale is much more standardized it is a

great improvement in terms of items and administrative procedures over earlier forms of the same test. Therefore more studies should be undertaken on this scale which will give us more accurate information regarding the intelligence of crippled children. It was pointed out earlier that the intelligence range of children with cerebral palsy is considerably different from that of the other types of crippled children. Hence, it is necessary that similar studies be undertaken with populations which exclude cerebral palsied children. Clinical observations and group studies in recent years lead us to the conclusion that crippled children cannot be considered as a homogenous group in so far as psychological characteristics are concerned.

## **(ii) Onset of Disability and Level of Intelligence**

Different groups of crippled children have characteristics which distinguish one from the other. The impact of congenital defects on intelligence and personality as distinguished from that of adventitious disabilities needs to be seriously investigated. It can undoubtedly be expected that the intelligence level of some groups of crippled children will be below national norms or will have a different curve from that of the general population. Children who have been markedly restricted in their experiences and activities will, with the present instruments of evaluation, achieve lower than average scores. Children who have been restricted in their experiences through long periods of hospitalization and convalescence may be expected to show differences in intelligence scores and personality factors. Children who have suffered any sort of cerebro-spinal involvement may be expected to achieve lower scores on tests due to the interaction in function of the cerebral cortex. However, studies which continue to group all types of handicapped children together, regardless of etiological factors or type of involvement, will add little to our present meagre fund of knowledge of this problem.

### ***(b) Cerebral Palsied – Special Problems***

An objective evaluation of the mental ability of the cerebral palsied is fraught with difficulties. Modern devices for measuring intelligence involve the use of speech or the use of the hands. Either or both of these functions may be impaired in the case of many cerebral palsied. Most test responses are on a time basis and the motor response of many cerebral palsied are slow and laboured with consequent ready fatigability. Hence, interpretation of the results of

intelligence tests is difficult, particularly the decision as to whether failure is due to physical disability or lack of mental ability. Among many professional personnel there is a tendency to interpret poor performance as being due more to disability than to limited mental ability, thus presenting the cerebral palsied in a more favourable light than is the case actually. This calls for an examination of the results of the measurements of mental ability of individuals with cerebral palsy.<sup>6</sup>

The problem of how best to measure the intelligence of children who may have multiple sensory handicaps in addition to paralysis has been attacked by a number of investigators. Most investigators have found it necessary to alter the tasks of standardized intelligence tests in one way or another to fit the handicapped state of the subject involved. Altering standardized tests in any way has an effect on their validity. In the absence of tests developed particularly for the multiple combinations of disabilities encountered in cerebral palsy, investigators of the intelligence of the cerebral-palsied typically have used the Stanford-Binet or other such tests and prorated the test scores. The items that are inappropriate are not used, and those that are used count an increasing number. A certain percentage of cases are found to be untestable. Bice and Cruickshank (1955) found 15 per cent to be untestable.

Studies of the intelligence of the cerebral-palsied have yielded quite uniform results. Two English and two American studies are in fairly close agreement, and all have involved a sizable number of cases. M. Dunsdon (1952) studied the intelligence of 916 cerebral-palsied children. They were largely candidates for special school in England. She reports that the I.Q.'s of 58.6 per cent were below 70, and that only 8.25 per cent scored 100 or more. Schonell (1956), after studying 354 cases of cerebral-palsied children over three years of age in England reported that 51 per cent had I.Q.'s between 50 and 69.

In America, Hopkins, Bice, and Colton (1954) reported on 1,000 cases in New Jersey of whom 48.8 per cent had I.Q.'s of 110 or more. Miller and Rosenfeld (1952) studied 330 children with cerebral palsy. They found that 50 per cent of their cases had I.Q.'s below 70 and that 4 to 5 per cent scored 110 or more.

The four studies cited above tend to agree that the incidence of mental deficiency among the cerebral palsied is high, and the

distribution of their intelligence definitely piles up at the lower end of the intellectual continuum. The studies indicate that roughly 50 per cent have I.Q.'s below 70. Only 3 or 4 per cent have I.Q.'s above 115, and less than one-fourth have I.Q.'s between 70 and 89. They agree, too, that there is no significant difference between the mean I.Q.'s of athetoids and spastics. This is in contrast with the supposition that intelligence is relatively unaffected in athetosis. The damage in athetosis is subcortical (in the basal ganglia), and intelligence was therefore thought to be less impaired. However, there appears to be no significant difference in general intelligence between the two main forms of cerebral palsy. Dunsdon (1952) and Schonell (1956) both report quadriplegics to be less intelligent than those with lesser number of limbs involved. The reasons for the lower I.Q. of quadriplegics could be that their paralytic handicap keeps them from learning at the rate others learn, or it could be that in quadriplegia the extent of damage outside the motor area of the brain tends to be greater. McIntire's (1938) classification of the intelligence of cerebral-palsied was as follows:

29 per cent borderline, 27 per cent moron, 22 per cent imbecile and 21 per cent idiot.<sup>7</sup>

Ann Heilman has compared the results of five studies. William Cruickshank refers to the same in his book on "Psychology of Exceptional Children and Youth" and adds that it is interesting to observe the close similarity of the results of the five investigations and to note the results of the combined data.

**Table VI**  
**COMPARISON OF INTELLIGENT TEST RATINGS OF**  
**CEREBRAL PALSIED CHILDREN FOR WHOM RATINGS**  
**WERE DETERMINED IN FIVE STUDIES.<sup>8</sup>**  
**STRONG MILLER MEMORIAL ASHER HOSPITAL**

	Rosenfeld	Staff	Schonell	Holoran	Heilman	combined Data
	% of	% of	% of	% of	% of	% of
Estimated intellectual level	261	90	340	133	178	1002
Mentally defective	49	43	47	36	47	45
Borderline dull	25	30	28	38	30	30
Average and above	26	26	25	26	23	25

Among the 1,002 children included in the studies, 25 per cent have average or above average intelligence; 30 per cent, borderline dull intelligence; and 45 per cent are in the mentally defective range. Likewise, Bice in a study involving 992 cerebral palsied children, reports 487 children or 49 per cent with intelligence quotients between 0 and 69; 224 children or 22.5 per cent, between 70 and 89; 212 children or 21.9 per cent between 90 and 109.<sup>9</sup> All these studies have employed the Stanford revision of the Binet Intelligence Scale as a basis of their evaluations. It is recognized that the Binet-type tests are not the most satisfactory measures of intellectual evaluation for severely disabled children. The reliability of these studies is fully attested by the facts that they were done independently by knowledgeable men who were well-equipped in measuring techniques and that their findings are corroborated by more recent clinical experiences.

### **(i) Cerebral Palsied versus – General Population**

Most investigators agree that there is a higher incidence of borderline intelligence and mentally deficient cases among the cerebral palsied than in the general population. Concerning the extent of variations in these differences, opinions differ. Phelps states that 30 per cent are mentally defective, Burgemeister and Blum found 50 per cent to be seriously enough retarded to fall within the category of defective intelligence. Wolfe found 44 per cent retarded, while James F. Garrett's study showed only 20 per cent retarded.<sup>10</sup> Apparently selective factors have operated and determined the kinds of persons studied eg., whether the group was located in a private hospital, a public hospital, a clinic, or a vocational training centre for adults. The factors have their effect on the number of retarded cases found in each institution studied. McIntire's study is taken to be the most typical. It shows the following results; gifted, none; superior 4.0 per cent; high average, 8.8 per cent; average 25.0 per cent; low average, 7.6 per cent; dull normal 11.0 per cent; borderline, 5.8 per cent; feeble minded, 27.6 per cent; and undetermined 10.2 per cent.<sup>11</sup> According to the study defective mental ability occurs about fourteen times as frequently among the cerebral palsied as in the general population.

### **(ii) No Differences Among Cerebral Palsied Groups**

The studies conducted by Bice and Cruickshank indicate no statistically significant differences between the major cerebral palsy

classifications or between sexes with respect to intelligence. Some minor differences were noted particularly relating to the triplegia spastic group, but the meaning of these differences is not clear and is certainly not significant to psychological or educational planning.<sup>12</sup>

Whether certain types of cerebral palsy tend to be associated with lower mental ability than other types is a frequent question. Since the cerebral cortex is damaged in the spastic group it would appear that this group has lower ability than the athetoid group. Similar conclusions seem to emerge from McIntire's article. However, Burgemeister and Blum, while showing the widest range of ability to be in the spastic group, found a greater incidence of feeblemindedness among the athetoids. These findings were corroborated by a study by James F. Garret and Wolfe. Hence, it would not be wise to assume that any particular type of cerebral palsy is associated with mental defect. On the other hand, one can expect a much greater spread of mental ability among spastics than among the other types of cerebral palsy, although the reason for this on any neurological basis is not at all evident.<sup>13</sup>

Taibl, utilizing the Raven's Progressive matrices Test examined 115 cerebral palsied children who ranged in age from six years to adulthood.<sup>14</sup> The grade placement of the subject was from Grade 1 through Grade 8 with the exception of Grade 5. No high school students were represented in his study, although two university students were included. The group included 69 spastics, 6 ataxies, 1 rigidity, and 4 mixed types. Seventy-two of the children were educationally classified as either "special class" or "ungraded group." The findings indicated that the cerebral palsied children of Taibl's group ranged from intellectually superior to mentally defective, the distribution not being a "normal" one. The performance of the spastic group was in keeping with the distribution of intelligence scores as cited in earlier studies. The athetoid group, however, showed a close relationship to normal comparative groups. In general, the author concludes that the cerebral palsied children perform on the Raven's Progressive Matrices in a manner closely similar to that of other North American children.

Some have been of the opinion that there is a connection between the side of the body on which there is a hemiplegia (or, in the case of a quadriplegia, the side on which the disability is more pronounced), and mental ability. These opinions are confined to the

spastic group. McIntire concludes that "cerebral palsied children who are spastic hemiplegias or quadriplegias are more apt to have mental retardation amounting to borderline or feebleminded intelligence if the dyskinesia is present only, or is more pronounced on the right side". This finding coincides roughly with that which is found in adults suffering brain damage, i.e., usually there is impairment of mental functioning and frequently some types of aphasia when there is a right hemiplegia. Because of this coincidence, McIntire's findings have been widely accepted.<sup>15</sup> However, James M. Garrett was unable to confirm these findings in a group presenting themselves for vocational training in a rehabilitation centre, nor did Cohen in a group at the University of Iowa. Hence, there is room for doubt as to the connection between laterality and mental defect, although the majority lean to the opinion that right hemiplegia is more frequently associated with mental deficiency. It must be remembered, however, that the neurological basis for this is subject to considerable controversy.<sup>16</sup>

It is agreed, however, that the spastic group of cerebral palsied present the general picture of the brain injured without motor defect. So Cotton reports a wider range of individual differences in type of response, a greater tendency toward more concrete types of response, with less ability to shift toward the more abstract forms of behaviour. One can expect a greater tendency to distractibility and much irregularity in performance. Because of the latter, cerebral palsied individuals are frequently called erratic. Some are so readily distracted that they must function in a quiet and unornamented room and, in cases of marked figure-ground difficulty, lack of discriminatory ability may result in confusion. Many demonstrate formalistic behaviour, in which they overstress orderliness and attack the problem in a comparatively compulsive fashion even though the system is not warranted by the task at hand.<sup>17</sup>

It is apparent that any evaluation of an individual with cerebral palsy must be comprehensive and will require a well trained person to administer and interpret the tests used. Probably one of the best summaries of mental evaluation in this field was made by Doll, Phelps, and Melcher. Their scheme covered the following:

1. Language:
  - a) Use
  - b) Comprehension

2. Attention:
3. Perception and discrimination:
  - a) Familiar objects
  - b) Form
  - c) Colour
  - d) Pictures (objects in)
  - e) Differences
  - f) Likenesses
4. Association:
  - a) Names with objects
  - b) Association responses
5. Memory
6. Number sense
7. Imitation
8. Performance
9. Ability to learn

At any event, in the case of cerebral palsy of the spastic type, the evaluation should include not only standard intelligence tests evaluated as above but also clinical tests of the effects of brain damage.<sup>19</sup>

### **(iii) Perception**

For many years psychologists have been interested in the effect of brain lesion upon learning, intelligence level, personality, and perception. Doll and his associates early pointed out the relationship between birth injury, brain lesion and mental retardation.<sup>19</sup> The wholistic effect of brain lesion is seen in Doll's statement that such may produce: (1) motor impairment; (2) retardation of intelligence; (3) disturbance of personality and conduct; and (4) consequent handicaps in learning. Neurologists and Psychiatrists likewise have contributed much to psychological understanding of this type of impairment.<sup>20</sup> Goldstein,<sup>21</sup> and Halstead,<sup>22</sup> who have worked primarily with adults, have also contributed much to our understanding of similar conditions in adulthood. Piotrowski,<sup>23</sup> and Harrower-Erickson,<sup>24</sup> also

working with adults, have stimulated numerous later psychological investigations of central nervous system disorders through the use of the Rotschach Test.

With children, Meyer,<sup>25</sup> Cotton,<sup>26</sup> Lord<sup>27</sup> and Sarason,<sup>28</sup> among other research workers, have contributed important studies to the further understanding of the implications of brain injury for psychology. Werner and Strauss have made a remarkable contribution to an understanding of the impact of brain injury on the perception of exogenous mentally retarded children.<sup>29</sup> Suffice it to say that while some limitations are inherent in the studies of Warner and Strauss, as Sarason points out so well, the importance of their contribution to psychology and education is exceedingly great. Further, it has a pertinent relationship to the cerebral palsied child.

Many of the contributions of the previously mentioned writers have directly or indirectly related to perception, and specifically to perception in individuals with brain pathology. Since cerebral palsy, in its numerous forms, is a cerebro-spinal condition, it has been the opinion of many that much of what has been written by these authors would normally also hold in a study of the psychopathology of children with cerebral palsy. It is recognised at the outset that the problem of individual differences is perhaps seen at its greatest among cerebral palsied children. Thus, there may be those who show marked degrees of impairment, psychologically, from brain injury while others may show little or no effects of the lesion in so far as psychological growth, learning and adjustment are concerned.

The extreme variability of performance of brain-injured children and adults in psychological tests presents both interesting and sometimes baffling situations to psychologists, and illuminates the paucity of accurate knowledge about these problems. Location of the lesion, extent of the lesion, innate intellectual capacity, and many other variables add to the complexity of the problem and make controlled research with large groups still to be desired.

In 1950 Dolphin undertook a study of the psychopathology of cerebral palsied children which became the basis for further investigations.<sup>30</sup> Acknowledged as a preliminary study to ascertain the worth of further investigation, Dolphin obtained two carefully matched groups of 30 children each: one, a group of cerebral palsied children; the other, physically normal children. The former group included children with a chronological age range between eight and thirteen years, a

mental age range from six to fifteen years, and an intelligence quotient range from 78 to 129. The mean chronological age was 10.02 years, the mean mental age, 9.55 years, the mean I.Q. (regressed), 93.46. The range for the physically normal children on the matching variables was quite similar to the cerebral palsied children, the C.A. being 10.17 years, the M.A. 9.57 years, and the mean I.Q., 93.66. Children were paired on the above bases and were matched by sex.

An experimental test battery consisting of six parts was administered to the groups of children. In general, the results of these tests showed that the cerebral palsied children as a group differ significantly from physically normal children in several phases of perception.

#### **(iv) Concept Formation.**

Dolphin modelled an experiment with cerebral palsied children to evaluate concept formation.<sup>31</sup> The children were requested to place before one or two pictures, objects which they felt were appropriate to the picture. A miscellaneous collection of 102 objects was available for the children to choose from. All the objects were either to be placed before one of the pictures or discarded. At that point the test was considered completed. The cerebral palsied children placed a mean of 8.26 objects before the first of the two pictures: the normal children, a mean of 4.03 objects. To the second picture the cerebral palsied children attributed a mean of 27.63 objects; the normal children, a mean of 17.36 objects. Statistically significant differences were obtained in each instance. The much larger number of objects and the more frequent usage of uncommon objects by the cerebral palsied children corroborate the similar findings of Strauss and Werner with exogenous mentally retarded children. It is also in keeping with the observation of Cotton that cerebral palsied children differed from normal children in three ways, namely, through a wider range of individual differences of the type of response within a given test situation; a greater tendency toward concrete types of responses with less ability to shift to more abstract forms of behaviour and a greater tendency towards stereotyped responses. The second characteristic is one which, Goldstein feels is typical of individuals with organic brain pathology,<sup>32</sup> and is one which clinical psychologists have come to feel is an almost classic sign in psychological evaluations.

Dolphin, as did others in similar experiments, observed the cerebral palsied children reacting to the objects on the basis of secondary characteristics – soap was placed before one of the pictures because soap suds could be waves. A burned match “is a toothpick because it has a sharp end on it.” The selection of objects because of their secondary characteristics was also noted by Strauss and Werner with their group of brain injured mentally retarded children. The selection of larger numbers of objects, the utilization of uncommon objects, and the projection of the static situation into three-dimensional realities are all in large measure due to the forced responsiveness of the cerebral palsied children to stimuli and to compulsivity characteristic of so many brain-injured individuals. The latter caused the child to feel forced to utilize all of the objects in his grouping activities. Strauss and Werner had observed a marked degree of meticulousness among their brain-injured subjects. To a lesser degree this was also observed by Dolphin in the performance of the cerebral palsied children during the grouping test.

Dolphin's study has reported differences between the two groups of children, cerebral palsied and normal, in discrimination of figure from background, in visual-motor and tactual-motor perception, and in generalized concept formation. It is not known from this study to what extent all of these aspects of psychopathology were present simultaneously in a single child or whether or not certain characteristics appeared in some children while others were absent. The degree of variability among the cerebral palsied children of the several aspects of psychopathology is still unknown. In the opinion of William M. Cruickshank numerous configurations of the several characteristics probably occurred among the 30 cerebral palsied children studied. In addition to the differences already noted and discussed, certain other psychopathological characteristics were observed in the behaviour of some of the cerebral palsied children. 'Perseveration' was quite common among the cerebral palsied children. The impact of certain perceptions was observed to influence subsequent performance and activities on numerous occasions. Dissociation, the inability to relate objects in a unified Gestalt, was also observed in the drawings of the cerebral palsied children and during their performance on the marble boards, and was not a function of motor dysfunction due to gross motor impairment per se. Klapper and Werner likewise have reported this as a characteristic in varying degrees of severity in the cerebral palsied members of the pairs of identical twins whom they studied.<sup>33</sup>

### (v) The Multiple-Handicapped Cerebral Palsied Child

Cerebral-palsied children, particularly those who are mentally retarded, have a wide variety of concomitant defects. When the additional defects are added to the already existing ones, they represent a tremendous handicap. The cerebral-palsied child is typically a multiply handicapped child.<sup>34</sup> We will discuss here the different types of multiple-handicapped cerebral palsied child, as it is an important consideration for psychologists and educators.<sup>35</sup> We have isolated only three variables for consideration in this connection, with the full realization that many others may be present in a given child and thus will have to be considered by the psychologist. The three we have chosen for discussion are: (a) the presence in the cerebral palsied child of other physical defects of whatsoever kind or degree, for example, impaired hearing, impaired vision, epilepsy; (b) the presence in the cerebral palsied child of retarded mental development; and (c) the presence in the cerebral palsied child of psychopathological characteristics of perception which are independent of mental retardation. The following Table illustrates the complexity of this problem and demonstrates the combinations of disabilities which may be observed in a consideration of disabilities of the three variables which we have mentioned.

Table VII

#### MAJOR VARIATIONS OF MULTIPLE-HANDICAPPED CEREBRAL PALSIED CHILDREN

Type	Presence of Cerebral Palsy	Presence of other Physical Defect	Presence of retarded Mental Development	Presence of Perceptive Pathology
1	yes	no	no	no
2	yes	no	no	yes
3	yes	no	yes	no
4	yes	yes	no	no
5	yes	no	yes	yes
6	yes	yes	yes	no
7	yes	yes	no	yes
8	yes	yes	yes	yes

From W.M. Cruickshank, "The Multiple-Handicapped Cerebral Palsied Child," *Exceptional Children*, XX (1953), 16-22.

**Type 1.** This type simply involves the basic form of the disability, i.e., cerebral palsy of whatsoever variety and with no other physical or psychological deviations.

**Type 2.** This group of children includes those with cerebral palsy who also show defects of perception, but in whom there is no evidence of mental retardation or other type of physical disability. Type 2 in our classification of multiply handicapped cerebral palsied children constitutes a group about which we admittedly know relatively little at the present time. The validity of this clinical type is assured, however, in the opinion of William M. Cruickshank. Strauss and Werner briefly report findings which are subjective, but which were nevertheless gathered from the responses of a small group of children of normal intelligence and who demonstrated perceptive defects.<sup>36</sup> In the group of children studied by Dolphin and Cruickshank there were 14 children whose intelligence quotients were above 95. Within this group numerous children showed defects of perception which significantly differentiated them from their control subjects who were physically normal. The prognosis for this type of multiple handicapped child is good educationally and psychologically, provided, the child receives his educational experience in an environment which recognizes his basic learning problems,<sup>37</sup> and in the degree to which he can profit from a total programme of physical reconstruction.

**Type 3.** This group includes those cerebral palsied children who show no physical handicap other than the basic one and who are free of perceptive disabilities but whose intelligence is retarded significantly. Psychologically these children appear like the endogenous mentally retarded children as defined by Strauss.<sup>38</sup> Many of these children show the classical symptoms of primary mental retardation, indicating that mental retardation might have existed even had cerebral palsy not been present. Such children, in addition to the physical characteristics of cerebral palsy (which are assumed throughout the remaining discussion of each type), exhibit lack of ability to form insight, poor comprehension, restricted memory functions, poor judgment, faulty reasoning, and limited problem solving ability. These factors are those, among others, which characterize all primary forms of mental retardation. In general, each of the above factors will, of course, be accentuated in direct proportion to the degree of mental impairment. Both the rate of mental growth and the ultimate level of achievement, physical as well as mental, will be governed primarily by the innate mental ability of the child. While no adjustments are required

in the learning environment, such as are suggested in connection with Type 2, the same sort of adjustments in curriculum and teaching materials are necessary as for endogenous mentally retarded children. Prognosis - educationally, psychologically, and to a somewhat lesser degree, physically - depends directly upon the intelligence level and the adequacy of the educational programme. At best, the level of achievement is significantly limited.

**Type 4.** This group of cerebral palsied children included numerous problem of great seriousness. These are children who possess secondary physical disabilities other than cerebral palsy but whose intelligence is determined to be within normal limits and who do not show characteristics of perceptive difficulties. The frequency with which visual auditory impairments accompany cerebral palsy is well known. Epilepsy is common among children with cerebral palsy. The degree of visual or auditory defect may, of course, vary from mild impairments to those of a profound nature. Epilepsy may take the form of light or violent seizures.

Children who present this variety of multiple disorder constitute one of the most difficult educational and psychological problems of any to be mentioned. Teachers, psychologists, and medical personnel may well be confused with respect to the appropriate methods of education and physical training for these children. Secondary physical defects of mild degree may not constitute a serious block to the learning or to the adjustment of cerebral palsied patients. More involved physical defects, however, may seriously retard learning. Prognosis with type 4 children is undetermined. Outcome is based primarily on the degree of severity of the secondary handicap and on the adequacy of the educational and therapeutic programmes to cope with both primary and secondary disabilities. Educational methodology and therapy requisite to the secondary defect must, of course, be available to the child in order to insure even the most moderate psychological growth and educational achievement.

**Type 5.** With Types 5, 6, 7 and 8 the problem of multiple handicaps become more complicated. Cerebral palsied children in Type 5 category are those who have no secondary physical defects, but who demonstrate both retarded mental development and psychopathological perceptive functions. This group in so far as psychological development is concerned corresponds to the mixed category in the classification of mental deficiency as described by

Strauss.<sup>39</sup> These children will demonstrate the psychological characteristics of both the exogenous and endogenous types of retarded children. In so far as educational and therapeutic programmes are concerned, William M. Cruickshank feels that the perceptive problems of exogeny will demand major consideration in programme planning, in learning or therapy situations, and in teaching materials. On the other hand, the professional worker will also have to keep in mind those psychological characteristics briefly mentioned in connection with Type 3 which are typical of endogeny. Prognosis - educationally and psychologically - will depend directly on the level of innate intellectual ability and the extent of the cranial damage which has caused both the manifestations of cerebral palsy and those of exogeny.

**Type 6.** These cerebral palsied children are those who are characterized by secondary physical defects of a nature described in type 4 who also show retarded mental development, but who do not have perceptive malfunction. It must be pointed out that to measure the intelligence of such children with accuracy is a most difficult operation since satisfactory instruments for the assessment of multiply handicapped children, and in particular those with cerebral palsy, are not yet available. When cerebral palsy, secondary physical disturbances, and mental retardation are found in combination, extreme caution must be exercised and careful periodic reassessments be made before a final decision is made regarding the mental level of the child. Even then accuracy in establishing a mental age may be impossible. If mental retardation is a bonafide diagnosis, then the prognosis for the child will depend upon the level of mental ability. At best, the outcomes, educationally and psychologically, may be significantly restricted.

**Type 7.** Type 7 includes those cerebral palsied children who have secondary physical disabilities and who also demonstrate the peculiarities of perception which have been commented upon above, but who are of normal intelligence. Prognosis here is better than in Type 6 because of the better intellectual ability of the child, although it, of course, depends upon the severity of the secondary physical disabilities. Experience has shown that some cerebral palsied children will superficially demonstrate auditory and visual impairments, but that in reality these may be manifestations of the perceptive difficulties and not actual sensory disorders. Such findings and observations would warrant careful and cautious psychological,

audiological, and/or ophthalmological evaluations of cerebral palsied children to ascertain the exact etiology of the secondary physical manifestations.

**Type 8.** This final group of cerebral palsied children is one in whom are observed secondary physical disabilities, accurately diagnosed mental retardation, and the psychopathological perceptive characteristics. This group will constitute the most serious educational, social, and therapeutic problem. Prognosis will be exceedingly poor, and the possibility of any independent adult experiences will be significantly limited. Comments which have been made in connection with other appropriate groups of children will, in combination, all apply in this instance.

A classification of eight distinct types of multiple handicapped cerebral palsied children has been made. This classification is based on the type of physical and psychological problem which the child demonstrates. It is a functional classification. Cruickshank observes that research of an educational and psychological nature is necessary with each type to determine the most adequate procedures which can be used to facilitate learning, social adjustment, and physical growth and development.<sup>40</sup>

### *(c) Multiple Sclerosis*

Psychological studies on multiple sclerotic patients have been concerned to date with two main issues. Studies like Canter's attempt to measure intellectual deterioration in so far as it occurs during the progress of the disease. There are also studies which have been concerned with the question whether a characteristic multiple sclerotic personality could be detected through the projective techniques; for example, the studies conducted by Beck, Burgemeister and Tallman, Harrower and Karus. One of the problems arising here is to what extent the typical "organic personality" easily demonstrable from the projective test findings in cases of cerebral involvement can be said to characterize the multiple sclerotic patient group as a whole.

Concerning the first problem Canter summarizes his findings as follows: "In multiple sclerosis, there appears to be an impairment of intellectual and emotional functions which can be objectively measured by means of psychological tests. This psychological impairment is progressive and can best be measured by repeated

psychological examinations. This impairment and loss of capacity apparently parallels neurologic change in the degree of clinical neurological impairment. Generally the most striking psychological loss is inability to analyze and synthesize abstract problems. Furthermore, there is loss in learning ability, psychomotor coordination and speed as well as some increase in irritability and emotional instability.

Using one of the best known projective methods, the Rorschach test, Burgemeister and Tallman, who examined Multiple Sclerotic patients, felt that there appear in these patients "an intellectual construction and an impoverishment of personality which is out of keeping with their educational and cultural background."<sup>41</sup>

#### (d) *Poliomyelitis*

In poliomyelitis we must be aware of the possibility of psychological effects arising directly from the invasion of elements of the central nervous system by the virus. As long as the virus confines its action principally to lower motor neurons or anterior horn cells of the cord, it is likely to have very little demonstrable effect upon behaviour except as it is revealed in the alteration of bodily movement. In some cases, however, especially in bulbar polio, we know that an inflammation of the brain may occur (polio, encephalities) and when this happens there is likely to be some organic brain damage with resulting alteration in mental function. Generally this is revealed as a change in irritability, altered capacity to concentrate and attend to what is going on and even possible changes in mental capacity. Furthermore, in bulbo-spinal and bulbar polio, alternation in respiration, in CO<sub>2</sub> - O<sub>2</sub> balance may result in oxygen deprivation of the brain with similar behavioural changes.<sup>42</sup>

Perhaps the only outstanding study hitherto undertaken in India on the Physically handicapped is the one conducted by Dr. Mrs. Usha Bhatt. She evaluated 500 cases. Among them 38 cases have their Intelligence Quotient, memory and power of understanding affected by their disablement, whereas six others were mentally deranged as the direct result of accidental injuries. Of the 38 cases of mental deficiency 25 had their I.Q. affected, while the remaining 13 had their memory blunted through diseases and congenital conditions. The first lot of 25 could not benefit by normal education obviously for want of intelligence, whereas the 13 persons included in the second category could be classed as "backward" from an educational point of view.

The highest incidence of mental deficiency was found amongst the cerebral palsied, as 9 out of a total of 12 cerebral palsy cases had their I.Q. affected; again, of these nine, four had additional speech defects. Hemiplegia recorded the next highest incidence of mental deficiency with 10 cases, i.e, one-third of the hemiplegia. Four out of seven cases with muscular dystrophy were mentally deficient. Three cases of poliomyelitis with Mongolian Idiocy, congenital arm and leg deformity and cretinism, were also among the mentally deficient. A case of amputation of one leg with epilepsy and another of spinal T.B. also had their mental faculty likewise affected. Of 100 poliomyelitis cases, eight were mentally deficient. Two cases of quadriplegia suffered from loss of memory, understanding or equilibrium.<sup>43</sup>

## **Visually Handicapped**

### *(a) Level of Intelligence*

An individual's mental potentiality is neither raised nor lowered by blindness. His functional level may be lowered to the extent to which society has not provided experiences which can offset the limitations imposed by his sensory deficit. Charles W. Telford & James M. Sawrey point out that except in the few instances in which blindness and intellectual subnormality are genetically linked (Tay - Sachs' disease) and in those cases where mental deficiency and blindness may result from common environmental causes (disease or accidents), any intellectual deficits which accompany visual impairment are presumably due to the uncompensated limitations of sensory input and mobility.<sup>44</sup>

The mental level of the visually handicapped, as measured by existing intelligence tests, does not differ markedly from that of children with normal vision. (Batsman, 1963; Karres and Wollersheim 1963). Samuel P. Hayes ascribes any retardation found in pupils entering school to "the inferior environment in which many blind children grow up, and the restrictions placed upon them in their homes" and notes that under the favourable conditions of a good residential school, many of these children "blossom out".<sup>45</sup> In his Contributions to a Psychology of Blindness, he reports results of the use of the 1930 Hayes-Binet Intelligence Tests in seventeen residential schools for the blind. The mean I.Q. obtained from them was 98.8. The mean I.Q.'s in the seventeen schools ranged from 108.1 down to 92 with standard deviations from 15.24 to 22.62. Of the total, 10.3 per cent had I.Q's

of 120 and above, while 9.2 per cent had I.Q's of 70 and below. Subsequent reports give the same general picture as a result of more recent adaptations of the Binet scale and of the Wechaler scale. <sup>46 & 47</sup> According to these reports, the percentage of blind pupils falling into "the average group" is somewhat smaller than the 50 per cent for the seeing. A slightly larger percentage of superior pupils is found among the blind and a considerably larger percentage of below average pupils. Since there is a good deal of variation on the actual percentage figures, it seems reasonable to indicate only the general pattern of the distribution. Hayes has also published at various times reports on the distribution of intelligence at a single school, Perkins Institution, which confirm the above facts.

Hayes followed the distribution of I.Q's of pupils entering two residential schools for the blind from 1915 to 1940, and found in practically all years a mean intelligence of slightly above 93.<sup>48</sup> There were considerable variations in the percentages falling into the various intelligence groups with no trend apparent in the changes over the years.

The percentage in the inferior group was consistently higher than that in the superior group. These data not only demonstrate that in the years surveyed the schools did not receive poorer material, but also confirm the above mentioned characteristics of the distribution of I.Q's among blind children.

The question whether congenitally and adventitiously blind children show any difference in their intelligence was also examined by Hayes. He found no correlation of general intelligence with the age at which sight is lost; achievement in different subjects also did not show any differentiation. He concludes: "The mental constitution of those born blind may well be essentially different from that of the other group, but the functioning of their minds as measured by other tests shows no such difference."<sup>49</sup>

Basing his findings on the results of these tests, Dr. Hayes states:

"We have found no evidence of a compensation for blindness through development of superior intelligence, as measured by our tests. It is possible, however, that in adapting to the blind tests which were prepared to test the seeing there has been too much emphasis upon certain abilities in which the blind have less chance for superiority

and that tests directly created for the blind might give a truer picture of their intellectual status. Their superior use of their remaining senses, their clever employment of obscure sensory cues in the avoidance of obstacles and their efficient adaptation to the need for desultory memory, all point to such a possibility. Perhaps we shall some day find that after eliminating from our calculations those children whose blindness is caused or accompanied by constitutional defects which may affect also the normal development of intelligence, the remainder make such good use of their innate capacities that they exceed comparable groups of seeing children who are less urgently motivated." <sup>50</sup>

In this connection it is to be mentioned that Hayes himself has recognised that the Hayes-Binet scale is not entirely satisfactory if used with younger and older children.

"Although we have fairly convincing evidence of the general validity and reliability of the Hayes-Binet scale, the author has long realised that both ends of the scale were far from satisfactory – the tests for very young children have never been properly standardised because so few cases come to the attention of schools and their testers, and the tests above the fourteen year level are too few and too restricted in range to give an adequate measurement of bright adolescents." <sup>51</sup>

Since Hayes made this statement, the Wechsler Bellevue Scale, which avoids some of these shortcomings, has become widely used. In recent years, many other things have happened which suggest a revaluation of the whole problem of intelligence testing of blind children. The increase in blindness in children due to retrolental fibroplasia, resulting from premature birth and not following any socio-economic stratification, the increased number of blind children in special classes in public schools, the increased understanding of parents in bringing up their blind child because of growing emphasis on parent education, and the recognition that tests devised for seeing children may not adequately measure the intelligence of blind children, are some of the factors which advocate such a revision of our testing procedures and the conclusions drawn from them.

### *(b) Perception*

Children who are blind or have lost their sight early in life must rely upon their remaining senses for gaining knowledge of the world

around them. In attempting to determine the importance of the remaining senses for the blind child's development, it is necessary to understand the basic function of hearing and touch as cognitive means. Lowenfeld (1963) states that blindness produces problems 'sui generis' only in the area of cognitive functions and mobility.<sup>52</sup> Here we shall be concerned only with cognitive (perceptual and conceptual) processes. It is obvious that the congenitally blind person experiences (perceives) the objects of the universe and builds up his knowledge of the world in ways that are different from those of seeing children. That is, percepts and concepts derive from different types of stimuli which does not mean that his cognition is necessarily less adequate or useful.

It is as impossible for the seeing person experience the world of the congenitally blind as it is for the congenitally blind to conceive of visual experiences, but it does not necessarily have a significantly restricted range of concepts. It is obvious that a person lacking visual perception will have no visual imagery. Studies indicate that adults who became blind before the age of five have no visual imagery (Schlaegel, 1953; Blank, 1958; Lowenfeld, 1962). However, such people do develop and use concepts of forms, space, and distance beyond the range of touch movement.<sup>53</sup> They function efficiently in conceptual areas which sighted people derive primarily from visual experiences. It is not known if these percepts and concepts, derived primarily from tactual, kinesthetic, and auditory sources, remain on these levels of whether there is a coalescence of impressions and an emergence of concepts from such experiences into something akin to that which the sighted derive from visualisation.

Knowledge of the spatial qualities of objects can only be gained by touch observations in which kinesthetic sensations take part. Audition gives certain clues in regard to distance and direction of the object, provided the object makes any sound. It does not convey any concrete ideas of objects as such. A blind person may for instance, walk under a tree and hear the wind blow through the leaves. His past associations and experiences may enable him to interpret what he hears so that he can say whether the tree has leaves, needles or is barren, whether the leaves are dry or fresh, how far away from the ground they are and how thick the foliage is. His olfactory impressions may permit him to say whether the tree is in bloom or even what kind of a tree it is. But all these clues will not give the blind person any ideas of the shape and size of the leaves, and of its general appearance.<sup>54</sup> The

importance of hearing is in the area of verbal communication, in locomotion, and in general as an indicator of audible clues.

Lacking sight, actual knowledge of the object world can be gained only by touch experiences. Berthold Lowenfeld points out that tactual space perception of the blind is different from the visual space perception of the seeing. The main reason for the difference is to be found in the fact that tactual and kinesthetic perceptions require direct contact with, or movement around the objects to be observed.<sup>55</sup> Thus, distant objects, such as the heavenly bodies, clouds, and the horizon, as well as very large objects such as mountains, and other geographical units or microscopic objects such as bacteria, cannot be perceived and must be conceived only by analogy and extrapolation from objects actually experienced. Objects may be too small, tender or fragile for touch observation as for instance some insects, some flowers, or a butterfly. Objects in motion, live objects, and objects under certain conditions, such as burning or cooking, do not lend themselves to observations by touch because they change their shapes and positions or because of the danger involved in direct contact<sup>56</sup>. It must also be recognized that sight permits much more perceptual activity than touch because the eyes are almost continuously open to stimulation from the outer world while touch needs to be actively applied for the purpose of securing impressions. Also when they are applied, the horizon of touch extends only to the limited area of the outstretched hands. Observations beyond that limit can only be made if the person moves towards or follows the object to be observed. It is true that the exposed areas of the skin are open to stimulation by air currents and temperature, but this in no way compares with the perceptual activity of sight.<sup>57</sup> While this is a limitation, it is probably comparable to the way in which the sighted person conceives of the size of the world and the other planets which he cannot directly perceive or of interplanetary distances which are beyond his direct experience. When interplanetary distances are stated in terms of light years, for example, one's conception of such magnitudes depends largely on verbal or written symbols, or is an extrapolation from distances actually traversed. They are hardly perceived in the way that the distant mountain top or the corner grocery store is perceived.

Many of these restrictions in observation hold true not only for the blind person who has never seen but also for the person who becomes blind later in life. Although he may have a very clear idea of the visual appearance of these objects he cannot actually observe

the object itself. He may, for instance, know what a thermometer looks like but cannot read the temperature it indicates. If it is understood that visual observation permits perception of a situation as a whole and of the objects within the situation according to size, shape, distance, position, and colour; it must also be recognized that tactual observations have their own characteristics and advantages. The touch senses convey object qualities, not given by sight which are greatly neglected by those who can see. Weight, temperature, surface qualities, hardness or softness, and three dimensional spatial characteristics are experienced by touch observation. One of the most distinct advantages of touch is that it functions independent of light.<sup>58</sup> Also it is often easier to explore with the fingers rather than to get into a position where sight could be applied. Often tactual observation is the only observation that can be made, as in some medical examinations. Hearing enables a blind person to gain information through verbal communication and to keep in contact with his social and physical environment. However, in respect to the latter, his efficiency is curtailed. People may stop talking or may not talk at all so that he is unaware of their presence; persons may move away or enter a room without being heard; it may not always be obvious to the blind person to whom the comment of somebody else is directed; many things do not give any sound while others which do sound may not always do it, or they may sound only under certain conditions such as leaves when the wind is blowing; continuous sound such as that of rain may drown out all other audible clues; and snow deadens sound which may indicate changes in the environment. All these factors contribute to more chances for being less adequate in meeting the demands of the situation. Therefore, it can be assumed that they increase a blind person's nervous tension and insecurity.<sup>59</sup>

The process by which space perception by touch is attained has been the subject of considerable research. Heller<sup>60</sup> and Steinberg<sup>61</sup> agree that the touch sense is the only original spatial sense of those who were born blind. Heller distinguishes two types of tactual perception by the hands; enveloping touch in which small objects are enfolded by letting either one or both hands observe the object. This type of tactual perception he called "synthetic touch" because the form of the object is perceived as a whole, more or less simultaneously. In observing an apple, for instance, children will gain an idea of the shape of the fruit by enfolding it in their hands. This enveloping touch is applied not only to smaller objects but also to larger ones when only parts of them are subjected to close observation. The other type of

tactual perception is applied to large objects which extend beyond the limited scope of one or both hands, as in the observation of a chair. Here the moving hands follow the shape of the object, and if it is a very large one, the whole body may actively participate in the process. This method has been called "analytic touch" because it consists of successive impressions gained by observing parts of the object. These successive impressions, however, cannot remain isolated, but must result in a unified "touch idea" of the object. Without such unification, blind people would not have any workable concept of larger objects nor of their environment.

German psychologists considered this phenomenon of unification the central problem of blindness, and various explanations have been given for it. Steinberg assumes, as a result of experimentation in which Gestalt psychological principles were applied, that there is a mental process of "expansion of tactual space."<sup>62</sup> Heller believes that there is a contraction of tactual space in which large objects are reduced by a special mental act until a simultaneous idea of the total object is achieved.<sup>63</sup> Another theory postulates the perseveration of the earlier perceptions until they combine with the latter ones into a spatial and temporary continuum, a spatial Gestalt. Whatever the explanation may be, the fact that blind individuals are able to reproduce all kinds of objects, small and large ones, in modeling and hand work, and that they can recognize objects on the basis of previous observations, is evidence that they must be able to unify separate perceptions into one total concept of the objects. This central problem of space perception, however, needs further investigation.

All tactual observations of the fingers, hands, arms, or other parts of the body have a kinesthetic component since muscle sensations are involved in these movements. For example, in observing a chair with both hands, the touch movements of the two hands and arms may proceed in different directions and with changing distances between them. Therefore the actual spatial experience is made up not only by the touch contacts with the object, but also by the variety of muscular sensations accompanying the touch movements.<sup>64</sup>

Tactual perception results not only in spatial experiences but in a number of other touch sensation. The surface of the skin has specialized nerve endings which are the receptors for pressure, pain, warmth, and cold. Sensitive spots for these sensations are dispersed over various areas of the body in varying density. Experiments reported

by Hayes have shown that blind individuals have no better discrimination in regard to cutaneous sensitivities than the seeing.<sup>65</sup>

Unlike space perception, colour perception which results from stimulation on the retina is an exclusively visual function. Therefore totally blind persons cannot perceive colour at all, although they acquire substitutive ideas for colour through sensory, verbal or emotional associations and conditioning.<sup>66</sup> Blind children learn the common colour associations such as blue sky, red blood, white snow and green grass because they are a part of their socially needed vocabulary. However, since they cannot experience colour, their attention should be directed toward aspects of situations and objects which can be experienced by them in order to avoid purely verbal pre-occupation. The idea of colour blue, might have been determined by the association "blue sky". Thus all or some of the different sensations and emotions caused by fine weather may build up substitutive ideas for the colour blue. These ideas not only have subjective value as components of the blind individual's world of imagery, but also enable him to communicate with the seeing in common terms, though not on the basis of common experiences.<sup>67</sup> Excessive and unrealistic use of colour words by blind individuals is not rare and can, in many cases, be regarded as a compensatory mechanism.

Coloured audition, which is a form of synesthesia, plays an important role in the ideational life of many persons who have lost their sight either during childhood or later on. In this phenomenon colour sensations are closely attached to auditory sensations and may appear regularly in response to certain auditory stimulations. These secondary sensations of colour are called photisms. Photisms may be attached to a variety of experiences and ideas. Wheeler and Cutsforth have jointly and separately published research on this problem and examined the function of synesthesia in learning <sup>68</sup> in the development of meaning, <sup>69</sup> and concepts <sup>70</sup> and in other thought processes. Voss, in his extensive study of colour hearing of the blind, enumerates photisms attached to: timbre of tones and sounds especially of various musical instruments, varying pitch of tones of an instrument, single tones within a scale, major and minor scales, voices of persons, various emotions, days, months, geographical names and so on.<sup>71</sup> These photisms once present in an individual are quite inflexible, although they vary from person to person. Of course only persons who have seen colours can experience coloured audition,

since imagination cannot create anything which has not been experienced previously by the senses.

It must be noted that we have few studies directly concerned with the concept formation or the conceptual levels attained by the blind as compared with the normally sighted. One study compared "early blind" and "late blind" children with sighted children on various tactile and auditory tasks (Axelrod, 1959). "Early blind" subjects were inferior to seeing subjects in (1) abstracting a characteristic common to consistently rewarded members of pairs of objects; (2) Solving matching problems involving spatial or temporal sequences; and (3) transferring a principle of solution from one sensory area to another - auditory to cutaneous or vice versa. The "late blind" subjects showed no inferiority to the normally sighted. The differences obtained, while statistically significant, were small and according to the author do not suggest marked intellectual impairment. The author also indicates that possible brain damage to the early blind cannot be ruled out.

Research studies have documented the deficiencies of the visually handicapped in the development of spatial concepts. (Nolan and Ashcroft 1969).

### *(c) Sensory Acuteness*

The assumption that the loss of one sense is compensated for by a more or less automatic improvement in the acuity of the other senses is a long standing and persevering one. The popular notion that the blind are endowed with hyperacute hearing, touch, taste, and smell or phenomenal memories is largely erroneous. Hayes reviews in detail the various studies which tested the comparative abilities of the blind and the seeing to distinguish the direction of sound, and to discriminate the intensity of sounds. There are also studies on the acuteness of smell, taste and touch, discrimination of lifted weights, of passive and active pressure, and of tactual space, sensitiveness to changes in temperature and acuteness of vibratory sense, particularly in the deaf blind.<sup>72</sup> All these studies gave evidence that the blind are not superior to the seeing in their sensory acuteness; some of them even indicated that they are somewhat inferior. There is no experimental research available on pain sensitivity, on the sense of balance, and on the organic sense. Hayes investigated the memory of blind children and found that they have displayed no superiority in either rote or logical memory (Seashore and Ling, 1918; Hayes 1941; Axelrod 1959,

Lowenfeld, 1963, Emart & Carp 1963). Dr. Hayes and his associates have repeatedly found that "in memory, as in sensation, compensation is not a free gift but the hard won reward of special effort."<sup>73</sup> This reward depends on the industry of the individual in adjusting his senses to his special needs. Therefore any higher efficiency of the blind in interpreting the sensory data perceived, must be the result of increased alteration to small cues and greater use of such cues as a source of information and guidance and also of adaptation."<sup>74</sup> It is apparently not the result of a lowering of sensory thresholds. In fact even a sighted person can, through industry and practice, improve his modes of adjustment. The power to adjust or improve one's senses depends on the capacity of the individual, whether blind or sighted.

With the exception of an early study by Ralph V. Merry, no research can be reported on the widely assumed superior abilities of the blind in music.<sup>75</sup> Merry used the seashore Musical Talent Tests with a selected group of 44 blind students. The majority of them made superior ranks in the six tests, but since they represented a selected group, their superiority does not permit any general conclusions. Even in this group, Merry points out, there was a significant percentage of inferior performances. Although further research would be needed to clarify the question of superior musical ability of the blind, various factors stand in the way of such an undertaking. Blind children are usually encouraged to listen to music, to practise music and to take part in musical activities far beyond opportunities offered to seeing children. This does not only support the general impression that the blind are musical, but also promotes their efforts and interests to an extent which gives them unquestionable advantage over an otherwise equal group of seeing children.

The belief that blind people have a superior ability to interpret human voices also belongs in this category. It is unquestionably true - and we know it from various autobiographical and other reports - that some blind persons can remember and recognise many voices even after a long lapse of time. They also develop through continuous practice the ability to discern in voices, moods, emotions, attitudes, and such traits as sincerity, tact, friendliness, and their opposites. On the other hand it often happens that the blind individuals rely too much upon the voice as an indicator of a person's character and either accept or reject the person on that ground alone. In this respect they are not different from seeing persons who form impressions on the basis of pleasant or unpleasant appearances. Cantril and Allport

conducted some experiments in which blind and seeing subjects were asked to judge from voice, vocation, age, interests and such features of personality as introversion and extroversion.<sup>76</sup> They found contrary to the former belief that the blind are less accurate in their judgements than the seeing. They explained this by the fact that the blind have fewer opportunities to observe and to study personality and also have no visual assistance in correcting their errors in judgement. Regardless of the objective validity of the judgement which blind people form in listening to voices, it is a fact that they are strongly influenced by them and find in the variety of timbres and modulations a source of enriching social experiences.

## **Acoustically Handicapped**

### *(a) Level of Intelligence*

There is no reason to believe that the innate mental endowment of the deaf was any lower in bygone times than today. But deprived of the nourishment of education, this innate intelligence, remains scarcely more than an undeveloped capacity, a state of endowment, without attainment. "A deaf-mute before he has been taught language, either the finger language or reading, cannot carry on a train of reasoning any more than a brute."<sup>77</sup>

When educating the deaf had become a commonly accepted practice, it became obvious that there were differences in intelligence which gave rise to numerous educational complexities. In addition, as the deaf were sent out from the schools, the question arose as to how they compared in intelligence with the hearing society of which they were expected to become a part.

Pintner and Paterson attempted to answer these questions in 1915 through the use of a modification of the Goddard Revision of the Binet-Siman Scale to test eighteen deaf children. They obtained a mean I.Q. of 63. Since that time dozens of studies have compared the intelligence test performances of various groups of acoustically impaired people with the acoustically normal. If the obviously feeble minded cases were eliminated, the average I.Q. was raised to 73. The method of typing out the questions and having the child reply in writing was found to be ineffective because many subjects did not understand the questions. When signs and finger-spelling were used, comprehension of the question developed and answers could be obtained.

The investigators placed little faith in their findings. They stated that the language of the questions was too difficult and that deaf children did not have the same opportunities for the life experiences that the test items assumed were common for all children. In as much as the authors were interested in measuring intelligence and not either language ability or environmental deprivation, they concluded that verbal tests of the Binet type were unsuitable as measures of intelligence of the deaf.

Levine disagreed with this conclusion.<sup>78</sup> She believed that some verbal tests of intelligence can readily be used with deaf subjects and that the results provide important information about certain aspects of intellectual functioning that cannot be tapped by other kinds of tests. She administered the Wechsler Bellevue Intelligence Scale for Adolescent and Adults to 31 selected "normal deaf" adolescent girls. On the verbal portion of the scale her subjects obtained a mean I.Q. of 89.6. This is significantly lower than the mean I.Q. of the normally hearing group upon whom the test was standardized. Levine believed that the results accurately reflected the low average "abstract" intelligence of the deaf. Because of the language handicap of the majority of the severely aurally impaired, verbal tests of intelligence have seldom been used in such studies. Almost all investigations have restricted their experimentation to tests that require little or no knowledge of language. Surveys of available studies show a great diversity of results. For example, Meyerson (1963) surveyed twentyfive studies. Ten, using individual performance tests, reported lower than normal I.Q.'s for deaf children. The median I.Q. of the means reported in the ten studies is 91. In twelve studies, no significant differences between the deaf and the acoustically normal were reported. In three, the deaf were found to have higher I.Q.'s. Studies using group tests have reported slightly lower mean I.Q.'s for the aurally impaired than have those using individual tests. In the same review H. Meyerson surveyed twelve studies using group non-verbal or non-language tests. He found the median I.Q. of the reported means of eight studies to be 85. Four studies reported insignificant differences and none of them found higher I.Q.'s for the deaf children. Group non-verbal and non-language tests are paper and pencil tests that can be administered to large numbers of children at the same time. The non-verbal tests assume that the subject has enough language to comprehend the examiner's instructions. The non-language tests do not. Neither kind of test requires language or the understanding of language for successful response.

The findings of the major investigations may be summarised briefly. Compared with normally hearing "control" groups or the normally hearing children on whom the particular test was standardized, the following relative results have been reported for deaf children.

### 1. Individual Performance Tests.

- (a) Lower I.Q.'s (Lyen and other,<sup>79</sup> Mackance,<sup>80</sup> Amoss,<sup>81</sup> Peterson,<sup>82</sup> Roth,<sup>83</sup> Zeckal and Vander,<sup>84</sup> Kolk, Morrison,<sup>85</sup> Capwell,<sup>86</sup> Johnson,<sup>87</sup> Olderan,<sup>88</sup>). The median I.Q. of the means reported by these investigators was 91.
- (b) I.Q.'s that were not different (Drever and Collins,<sup>89</sup> Schick and Meyer,<sup>90</sup> Schick,<sup>91</sup> Bishop,<sup>92</sup> Kirk,<sup>93</sup> Strong and Kirk,<sup>94</sup> Lane and Schneider,<sup>95</sup> Burchard and Myklebust,<sup>96</sup> Amin,<sup>97</sup> Lane.<sup>98</sup> The median I.Q. of means reported by these investigators was 100.
- (c) Higher I.Q.'s (Mac Pherson,<sup>99</sup> Mac Pherson and Lane,<sup>100</sup> Levine<sup>101</sup>) The mean of the I.Q.'s reported by these investigators was 110.

### 2. Group Non-verbal and Non-Language Tests including the Goodenough Drawing of a Man Test.

- (a) Lower I.Q.'s (Reamer,<sup>102</sup> Day Fusefeld and Pintner,<sup>103</sup> Peterson and Williams,<sup>104</sup> Shirley and Goodenough,<sup>105</sup> Lyon & Others,<sup>106</sup> Mac-Kane,<sup>107</sup> Steng and Kirk,<sup>108</sup> Springer,<sup>109</sup> Johnson<sup>110</sup>) The median I.Q of the reported means was about 85.
- (b) I.Q.'s that were not different (Shirley and Goodenough,<sup>111</sup> Loutlit,<sup>112</sup> Kellogg,<sup>113</sup> Johnson<sup>114</sup>) The reported I.Q.'s were close to 100.

Thus these studies themselves have yielded contradictory findings. On the one hand, Pintner, Reamer, Lyon et al, Peterson, and Williams, Zeckel and Vander Kelk report the mental capacity of the deaf subjects to be about ten to fifteen I.Q. points lower than that of the hearing; while on the other hand Goodenough and Shirley, Drever, and Collins, Springer, Burchaid and Myklebust Lane and Schneider report no significant differences in intelligence.<sup>115</sup> In some instances investigators employing the same tests report contradictory findings.

Investigators of the intelligence of hard of hearing children are in agreement that on verbal tests these children obtained slightly but

statistically significant, lower I.Q.'s than their normally hearing controls (Waldman, Wade and Artz,<sup>116</sup> Madden, Pintner<sup>117</sup> & Lev.<sup>118</sup>). The median difference reported was 5.4 I.Q. points. One investigation in which a non language test was used found hard of hearing children slightly but not significantly, lower in intelligence (Pintner and Lev.)

Since the tests used thus far with the deaf are measures of "concrete" intelligence, the question of the "abstract" intelligence of this group is still an open one. In order to probe more deeply into the overall pattern of "deaf" intelligence than is possible with non language techniques alone, Edna S. Levine resumed investigations with verbal measures. The most promising has proved to be the Wechster Bellem Scale for the Measurement of Adolescent and Adult Intelligence.

This measure has two decided advantages over others:

(1) it has provision for the assessment and comparison of both concrete and abstract intelligence; and (2) the verbal portion of the test differs from that used by Pintner and Paterson in that it is simply worded and contains practical, common sense test questions most of which are within the range of deaf comprehension and imagination. Further the verbal portion is easily administered in any method of communication desired by the subject. Numerous facets of "deaf" thinking, entirely obscured in non-language testing, are made visible. The general results show the hearing to have a significant advantage in the area of abstract intelligence, but none in the area of concrete intelligence.<sup>119</sup>

Since the 1930s and 40s interest in the general question of the intelligence of the aurally handicapped seems to have decreased. There are probably several reasons for this declining interest. Workers in the field had decided that a simple statement of the mean I.Q. of all people with auditory defects is neither meaningful nor useful. To be meaningful measurements must be of people with a specified type of handicap, 'degree of impairment, age of onset' of the disability, degree of language deficit, chronological age and background. The tests used must also be specified as group or individual, language or non-language, omnibus or analytical. The problem of the intellectual level of the accoustically impaired breaks down into dozens of smaller, more specific but more meaningful subproblems.<sup>120</sup>

Our changing conceptions of the nature and components of intelligence have also reduced interest in the general question of the

intellectual level of people with auditory defects. Before the 1930s intelligence was generally considered to be primarily a genetically determined, innate ability to learn.<sup>121</sup> If a child was born with little potentiality, there was not much to be done about it. Heredity was thought to place definite limits on achievement, and environmental influences were thought to operate only within these limits.

A series of studies in the late 20s to 40s demonstrated that environmental changes have significant effects on intelligence test scores. This change from an extreme hereditarian to a more environmental emphasis was accentuated during the 50s and 60s by a series of studies of the effects of environmental deprivations on intellectual level. Intelligence as measured, is currently recognized to be a product of both genetic and environmental factors. It is partially a social product.<sup>122</sup> Intelligence test scores are rough indices of functional level, implying no particular information about the determinants of that level.

In the absence of evidence that inferior intelligence and hereditary deafness are genetically linked, we assume that the hereditary determinants of the intellectual level of deaf children are not significantly different from those of their siblings with normal hearing. Differences in their intellectual functioning must then be due to environmental differences. The question of the possible intellectual inferiority of the sensorially handicapped becomes a question of the extent to which the sensory deprivation has influenced the individual's level of intellectual functioning.

Partially because of these considerations, interest has shifted from the general question to that of ways in which the restrictions of auditory input affects the level and pattern of intellectual functioning. In special education, interest focuses primarily on the question of the most effective means of compensation for the auditory deficit. The extent of deficit of intellectual and behavioural functioning in uncomplicated cases of deafness is conceived of as an index of the extent to which the culture has failed to develop or use devices and methods for compensating for the sensory limitations. Special education assumes that specific methods of training and educating handicapped children do make a difference in their functional level. Deaf children learn or fail to learn, self help and independence, as well as the fundamental educational and vocational skills, according to the adequacy and availability of the required specialized educational and

training resources. In such a frame of reference, the effect of deafness on intelligence becomes part of the question of its effect on achievement.<sup>123</sup>

Reviewing the various investigations of the intelligence of the deaf E.S. Levine says: "at worst, the deaf as a group are not too far below the mental level of the average hearing, and, at best are well within this range. Further research will undoubtedly clarify the finer, qualitative aspects of "deaf" thinking and intelligence about which we have much to learn".<sup>124</sup>

### *(b) Perception*

Some workers believe that although the general intellectual level of the aurally impaired child may not be inferior to comparable children with normal hearing, the perceptual and conceptual processes of congenitally deaf children fail to develop in a comparable way<sup>125</sup> (Myklebust, 1953, 1960, Farrant 1964). This view is supported by some studies (Hughes 1959) dealing primarily with verbal conceptualization, but the bulk of the investigations indicate that in processes not requiring verbalization or when the verbalizations required are within the vocabulary range and experience of the subjects, the deaf do well as hearing subjects in abstract conceptualization (Kates et al, 1961; Kales, Yudin and Tiffany, 1962; Furth, 1963; Nass, 1964; Machael and Kates 1965, Kates & Kates 1965; Kates 1967). Deaf subjects have less adequate verbalization than hearing subjects, and a larger proportion of adequate conceptual categorizations which are accompanied by inadequate verbalizations than do hearing subjects of the same age and I.Q.<sup>126</sup> These differences in verbalization disappear when hearing and deaf subjects are equated as to age, I.Q., and educational achievement. Educational attainment probably equates verbalization. These studies also find no evidence of greater rigidity (less flexibility in the strategies of concept attainment) in the deaf subjects.

## **Speech Handicapped**

### *Level of Intelligence*

Studies have consistently found a positive relationship between language proficiency and intelligence level. Therefore, it is not surprising to find that children with speech defects fall below the norms in

measured intelligence (Everhart, 1953; Garrison and Force, 1965). Defects such as the absence of speech, marked delay in acquiring speech and poor articulation, which may be caused by the child's failure to learn, are, of course, very common among the mentally retarded. However, when the mentally retarded are excluded, there is still a slight relationship between measured intelligence and the incidence of speech defects (Eisenson, 1963). It is possible that differences in socio-economic level may be a causal factor here also.

Eisenson discusses the studies on the subject under three categories:

1. The relationship of speech defects to intelligence in children of school age as a whole.
2. Intelligence of speech-defective children with physical handicaps.
3. The incidence of speech defects among children known to be of below average intelligence.

Carrell analyzed a school population of 1,174 children.<sup>127</sup> He found that the speech-defective children, taken as a group were lower in average intelligence than the general population. Craig surveyed and analyzed a population of 692 first, second, third, and fourth grade children enrolled in four Negro schools in Augusta, Georgia for the incidence of speech defects and factors of intelligence, reading abilities, grade placement, and socio-economic background.<sup>128</sup> He found that in regard to intelligence, at the fourth-grade level the children with severe speech problems tended to fall below the non-defective group.

Among physically handicapped children with speech defects the cerebral palsied and the deaf show a higher proportion of those mentally below average than does the total population. Stanton after surveying the literature on the intelligence of crippled children, noted that the cerebral palsied group showed the lowest mean scores.<sup>129</sup> Most objective findings, even when allowances are made for the nature of the motor disabilities, indicate that a disproportionately large number of cerebral palsied children are also mentally retarded. In a study, for example, Wolfe found that 26 percent of the subjects of his study were so limited in intelligence that they had to be considered uneducable.<sup>130</sup>

Deaf children as a group fall below the mean intelligence level of hearing children. This general observation holds when either

individual or group tests are used.<sup>131</sup> Hard-of-hearing children were found to fall slightly but significantly below the normal hearing on tests of verbal intelligence. A slight but not significant difference was also found in a non-language test.<sup>132</sup> Oleron, using the Raven's Matrices Test, concluded that the deaf were equal to the hearing in concrete mental functioning but inferior to them in abstract intelligence.<sup>133</sup>

## EDUCATIONAL ACHIEVEMENT

### Orthopaedically Handicapped

It has already been pointed out that a physical disability by itself need not necessarily constitute a mental deficiency. Nevertheless investigations have shown that, in many cases, the educational development of the physically handicapped children is retarded by their disability.<sup>134</sup> A cerebral palsied child, for example, may be exceptionally intelligent, but he is erroneously taken to be an idiot because his receptive faculties like seeing or hearing are defective, or because the expressive mechanism of speech and scribbling is faulty. Crippled children appear to be limited in mental capacity and educational achievement because their disabilities have been unduly allowed to restrict the range of their experience. The child who is crippled in early life and who has to spend his precious years of schooling in bed or in hospital will have lesser opportunity to develop mental abilities, unless a special effort is made to provide appropriate education for him. He has no opportunity of mixing with others of his own age or to explore his environment owing to his physical limitations. The child who cannot talk until he is five, the child who cannot walk until he is seven and the child who cannot write until he is nine has years of experience and self-expression to make up. Behind him lies strenuous training for activities of daily living which has ultimately enabled him to arrive at the initial stage of education. This training has eaten up the time which a normal child uses for learning other things. Consequently the disabled child lags behind his counterpart in educational achievement.<sup>135</sup> The magnitude of this developmental lag will depend on the extent to which hyperactivity, inability to focus, confusion due to unscreened auditory and visual background stimuli, perseveration, poor conceptualization, and emotional disturbance interfere with the child's learning.<sup>136</sup> Dunsdon<sup>137</sup> observes that neuromuscularly impaired children may be expected to function at a level 10 to 15 points lower than their estimated intelligence quotients.

Quite understandable is the interference in learning caused by slow, inaccurate movements of hands and eyes, both in independent function and in school activities requiring co-ordinated motion. Physical difficulty in writing as well as the undue expenditure of energy in turning pages and changing body position will impede school progress. The presence of brain damage will have direct influence on intellectual functioning as well as frustrations in interpersonal relationships and in striving for unattainable goals.

## Visually Handicapped

Telford<sup>138</sup> and Sawrey note that visual defects of the type found in some 25 to 35 per cent of school children, most of which are not sufficiently severe to require special educational programmes, do not seem to affect educational achievement. While hyperopia (farsightedness) and astigmatism (irregularity of the curvature of the cornea) are associated with less than normal progress in reading, myopia (near sightedness) is associated with above-normal progress in reading (Farris, 1936; Eames, 1955, 1959).

The first report on the use of an achievement test with the blind was published in 1918 by Hayes, who used a reading test with blind pupils. In 1927, Maxfield published her *Adaptation of Educational Tests for Use with Blind Pupils*,<sup>139</sup> in which she gave directions for the administration of parts of the Stanford Achievement Tests and the Gray Oral Reading Check Tests. Since then many achievement tests have been used and adapted for use with the blind, such as the Metropolitan Achievement Tests, the Sones-Harry High School Achievement Test, and the Myers-Ruch High School Progress Test. The Stanford Achievement Tests in their various forms have been used most widely in schools for the blind. The College Entrance Examination Board also offers its tests in braille for those blind students who plan to enter college. Hayes found two basic changes necessary in adapting achievement tests for use with blind pupils: (1) greater detail in preliminary instructions; and (2) an increase of three times the time allowance given for seeing pupils.<sup>140</sup> This ratio was indicated as desirable in a study by Caldwell.<sup>141</sup>

In general the results of studies on the achievement of blind pupils revealed that grade by grade children acquire about as much school information as seeing children do, with the exception of arithmetic in which their scores are generally lower. Lowenfeld noted

a drop in the achievement in literature and in history in the curves showing results of the New Stanford Achievement Test in seven schools for the blind.<sup>142</sup> He explains this drop in subjects which per se should not present particular difficulties to the blind, by the slowness of braille reading which confines the blind pupil to a much smaller amount of reading than his seeing peers. He stresses in this connection the importance of using talking books which enable blind students to read about three times as fast as their average braille reading rate.

Although blind pupils show grade by grade about the same achievement as seeing pupils, Hayes points out that "blind children average at least two years older than seeing children in the same grades; so comparisons by age, either chronological or mental, demonstrates their retardation."<sup>143</sup> Lowenfeld reports on the age grade relationship for 481 pupils in four grades of twelve schools for the blind.<sup>144</sup> In the third and fourth grades the blind showed an over-age of 2.5 years, in the sixth grade of 2.9, and in the seventh grade of 2.8 years. Various factors are responsible for this age-grade retardation, such as environmental influences resulting in lack of opportunity for observations, slower acquisition of knowledge due to lack of sight and slower braille reading. No recent data have been published on age-grade relationships, but it may be possible that findings in this field would show a change due to the increased use of aural sources of information, such as the talking book and the radio, and to the greater integration of blind children with seeing children.

It must ofcourse be recognised that whatever is said about blind pupils as a group does not permit any conclusion concerning the achievement of individual blind students. Many of them finish high school in competition with seeing students in public schools at an equal age and excel even in such subjects as arithmetic, geometry, and physics.

The most valuable source of information on tests and testing techniques for use with blind pupils and adults is *A Manual for the Psychological Examination of the Adults Blind*,<sup>145</sup> which also includes information concerning special considerations of a blind client's history and source for securing testing material.

Some incidental facts relevant to the school achievement are:

1. The cause of blindness and age of becoming blind are unrelated to school achievement (Hayes, 1934).

2. Age of school entrance is negatively correlated with school success (Hayes, 1934).
3. Blind children have particular difficulties in arithmetic (Nolan 1959).

## **Acoustically Handicapped**

Early studies of educational achievement by means of standard tests revealed that children in schools for the deaf were retarded by three to five years (Reamer<sup>146</sup>, Day, Fusefeld and Pintner,<sup>147</sup> Hall<sup>148</sup>). The amount of retardation increased with age, so that older deaf children were more retarded than younger children. Day, Fusefeld and Pintner reported that the educational quotient (Educational age divided by chronological age) was 71 for 12 year-olds and 67 for 15 year-olds. Others have reported E.Q.'s of 79 and 89.<sup>149</sup>

More recent investigations have supported the conclusion of the earlier work.<sup>150</sup> There is general agreement that greatest retardation occurs in understanding the meaning of paragraphs and words. Least retardation is found for arithmetic computation and spelling.

Students applying for admission to the preparatory class at Gallaudet College (U.S.A.) who probably represent the best students graduating from the residential schools for the deaf, have a mean age of eighteen years and nine months and obtain a median grade of 9.2 on the Stanford Achievement Test. This level is attained by the average fifteen year-old child (Fusefeld, 1954). This group of students, probably highly selected in terms of educational achievement, is retarded by three to four years. The educational retardation of deaf children may be partially the result of the excessive amount of school time required for them to learn to speak and their subsequent language deficiencies. The development of improved methods for teaching these children, and the increasing number of children who acquire language in the home, nursery school and kindergarten prior to beginning their academic education may help reduce the extent of their educational retardation.<sup>151</sup>

## **Speech Handicapped**

The consensus of evidence shows that even excluding the mentally retarded and the cerebral-palsied, children with speech defects are relatively retarded in school (Berry and Eisenson, 1963). Social

class differences can hardly account for the educational retardation of children with speech defects just as they cannot do so in the case of intellectual retardation. It would seem that speech defects constitute a greater handicap in formal learning than they do in acquiring the more general intellectual skills and information required for satisfactory intelligence-test performance.<sup>152</sup>

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## CHAPTER VI

# PERSONALITY AND ADJUSTMENT PROBLEMS

Personality is the psycho-physical organization of the individual as modified by his life experiences and this includes hereditary as well as environmental factors. A child who is physically handicapped either congenitally or adventitiously, experiences the world in his own way, which is different from that of most other children, and must strive to cope with it. His personality is affected by these differences, and it can be assumed that, by reason of his handicap, he is more likely to be under nervous strain and to harbour feelings of insecurity and frustration.<sup>1</sup>

From very ancient times, human-beings have associated various physical attributes with different personality traits. The early Greeks were the first to associate different types of physique with varying types of temperament. Empedocles in the 5th Century B.C. advanced the theory that the human body was made up of four humours with four different sets of personality traits. Even Hippocrates held the belief that body-build was an index of a man's personality.<sup>2</sup> Racial biologists, phrenologists and physiognomists have also associated physique with personality characteristics. From time to time, various theories have been advanced by psychologists to explain the personality and adjustment problems of the physically handicapped.<sup>3</sup> In this chapter we shall deal with the different theories concerning the impact of disability on personality and with the psycho-social adjustment of the physically handicapped.

## Theories of Personality

In his book "Psychology of Exceptional Children and Youth" William M. Cruickshank has given a candid review of the existing theories dealing with the impact of physical disability on personality and adjustment. At the outset he observes that numerous authors have developed theoretical statements regarding the impact of physical disability upon social emotional-adjustment. Although considerable thought has been given to this problem, little concrete research in support of any of the theoretical positions has been undertaken or completed. "Since there is little experimental verification and since no attempt has been made to interpret theory in terms of degree of disability, length of period of disability in the development of the individual, congenital disabilities versus adventitious disabilities, and other pertinent factors, little can conclusively be stated." <sup>4</sup>

### 1. *Field Theory*

It has been pointed out by several authors that the basic adjustment problems of the handicapped child are the same as those of children of comparable chronological and mental development who are physically normal. If one approaches the problem from a phenomenological point of view, "It is seen that the physically handicapped child in his social relationships is, as are all children, attempting to insure not his physical organic self, but his phenomenal self, the concept of himself of which he is cognizant. Two types of problems are to be observed in the handicapped child from this point of view: (1) adjustment problems which might occur in the normal developmental progress of any individual in simultaneously striving for expansion of self and for the maintenance of the self concept already developed; and (2) adjustment problems which are solely resultant from the fact that the physical handicap is inserted between the goal and the self desire to achieve such a goal." <sup>5</sup>

It is recognised that such a dichotomy is artificial and that no such clear-cut separation of adjustment problems exists. However, "the failure to recognize the duality of the problem accounts for such current misunderstanding with reference to the handicapped. It also frequently accounts for the fact that the lay person and many professionals continue to conceive of all personality problems of crippled children as an inherent part of being crippled rather than to conceive of many of the adjustive attempts of crippled children as part of the

child during normative developmental processes to integrate the crippling condition and his understanding of it into his life space..”<sup>6</sup>

In Chapter IV we have attempted to explain the difference in adjustment potentials of the disabled and the non-disabled individuals in the light of Lewinian Theory of New Psychological Situation. Any person facing a social-psychological situation will try to adjust himself to that situation. In the course of his attempts to adjust, numerous avenues are open to him. If no barrier is present in the new situation or if the person has the ability to overcome the barrier, he will have no problem of adjustment. If the barrier is temporarily or permanently insurmountable, he will try to adjust himself through new ways substituting the usual ones. Normally within the limits of his culture and his self-concept, great freedom of adjustment is permitted to the individual. In rare instances, when both the new situation and substitute situations are unattainable, the individual will try to escape to a world of unreality or psychosis.

“These possibilities are not equally open to the handicapped person. In the first place the barrier to achievement for the non-handicapped child rarely remains the same in the attempts of the personality to adjust to different situations. For the non-disabled person the barrier may change as the situation and the self concept are subject to modification.”<sup>7</sup>

The barrier for the handicapped child may remain the same. If the child conceives his physical disability as a barrier to satisfactory adjustment, organically or psychologically the barrier always remains the same regardless of the type of adjustment being attempted. But all handicapped children do not conceive of their handicaps as being restrictive in nature.<sup>8</sup> Thus this theory holds only in those instances wherein the handicapped child conceives of himself as being handicapped. However, a relatively large proportion of disabled children belongs to the latter group. Thus the barrier to successful adjustment is the physical handicap which is irremediable in actuality or which the person feels is irremediable.

When the normal personality is confronted by the barrier one of the avenues for successful adjustment is that of developing substitute satisfactions which contain nearly the same positive value as the originally desired new situation. Substitute satisfactions comparable to the original goal are rarely possible to the handicapped person, because the same barrier to the original goal is also a barrier to the development

of substitute satisfactions of a positive value equal in any respect to that contained in the originally desired new situation. Thus the handicapped individual's personality, in addition to the possibilities of escaping into a world of unreality or retreating to protect the self, adds negative possibility of developing substitute satisfactions within the old situation. None of these avenues leads to a normal satisfaction of his needs. Thus there is a condition of continued frustration in the handicapped person.

In fact as Cruickshank rightly observes the handicap sets into operation a circular situation: "The handicap is the barrier to success; frustration results; attempts are made to substitute satisfactions for the original activity; the handicap is again a barrier; greater frustration results; more activity; more blocking *ad infinitum*<sup>9</sup> ...." While no experimentation has been undertaken to test the adequacy of this hypothesis, Lewinian field theory provides a nearly satisfactory explanation of the problem of adjustment which is faced by some disabled persons.

## 2. *Theory of Organic Inferiority. (Alfred Adler)*

The theory of organic inferiority as developed by Adler has close relationship to the problem under consideration. Alfred Adler originally hypothesized and assumed an undetermined, but specific, neurological basis between organ inferiority and behaviour mechanisms of a compensatory nature.<sup>10</sup> In later writings, the psychic need for control of inferiority of whatsoever kind was added, although Adler continued to refer to the organic basis of feelings of inferiority as the central theme around which his concepts were developed.<sup>11</sup> The hypotheses thus become more indefinite and less subject to careful experiment or control. Therefore today his concepts have largely been supplanted by other ideas. Nevertheless they are important in stimulating further thought. Hence it would be a real injustice if we completely discount Adler's contribution. Crookshank<sup>12</sup> and Dreikures,<sup>13</sup> among others have individually contributed detailed reviews of Adlerian concepts. Crookshank states: "The individual may comprehend his inferiority: (a) on the somatic levels; (b) on the sympathetic level; (c) on the psychic level. In a child with a club-foot, the other leg may..... try to grow longer to compensate. On the functional or sympathetic side, the body may assume a peculiar habit of walking; but on the psychical side the patient may be conscious of it and will deal with it the best he can"<sup>14</sup>. Dreikurs applied the Adlerian theory in the evaluation

of the cases. He observes "the life style of each individual is not only influenced by the disability, but in turn determines the final effect of any physical disability." <sup>15</sup>

He continues: "Each handicapped individual formulates his own response to his disability in accordance with his life style, which can only be determined through dynamic psychological investigation. Alfred Adler developed a specific technique to determine the life style of each individual. This life style is developed in early childhood through the interpretation which the child makes of all the experiences and difficulties with which he is confronted. The disability is only one, although often an important factor. Not what he has in heredity endowment and environment - but what he does with it, is important. Courage and social interest, or the lack of them, determine whether a disability permits a good social adjustment or leads to permanent failure."<sup>16</sup>

Dreikurs' last statement, is more leaning on Adler's view and is in defense of it. It is in effect more closely related to concepts of mental hygiene and compares to the thinking of Allen and Pearson. They feel that the behaviour problems of crippled children are directly related to inadequate parental attitudes rather than to the child's inability to encompass psychologically the physical disability per se.<sup>17</sup>

### *3. Freudian Theories*

Numerous writers have looked to the writings of Freud as a basis for their concepts regarding physically handicapped persons. Chief among these are Meng and Schilder. Schilder sees a direct relationship between the perception of the body-image action.

He says: "Our study is primarily a study of the body-image which lies on the impressive side of our psychic life. But there are no impressions which are not directional and do not find at the same time an expression. There are no perceptions without actions. Every impression carries with it efferent impulses. Even this formulation does not emphasize sufficiently that impression and expression form a definite unit which we can separate in its part only by artificial analysis".<sup>18</sup> From this he concludes:

"Experiences in pathology show clearly that when our orientation concerning left and right is lost in regard to our own body, there is also a loss of orientation in regard to the bodies of other persons. The

postural model of our own body is connected with the postural model of the bodies of others. There are connections between the postural models of fellow human beings. We experience the body-image of others. Experience of our body-image and experience of the bodies of others are closely interwoven with each other. Just as our emotions and actions are inseparable from our body-image, the emotions and actions of others are inseparable from their body-images. The postural image of the body must be studied, if we desire to gain a deeper insight into social psychology." <sup>19</sup>

Bender<sup>20</sup>, and Bender and Silver<sup>21</sup> have further contributed to Schilder's concept of the body-image. The latter, in particular have related the theory to an understanding of the brain damaged child. They point out that a disturbance in the body-image may occur at any period in the development of the individual or at any level in the perceptual or integrative growth of the person. "In its early development, emphasis upon one particular part of the body by disease or by the attention of others, creates an increased psychological value to that part which disturbs the body-image." <sup>22</sup>

Any summarization of the Freudian formulations of Meng does him injustice, for without question much further consideration needs to be given to his understanding of the problem. Meng's formulation of Freudian theory calls for detailed consideration. He stresses that with the physically handicapped children a normal transition from the pleasure principle to the reality principle is frequently impossible because of the child's inability to participate in normal play activities. Little contact with reality through play brings the disabled child to an adult state of maturity too soon and without the basic understanding of reality. Meng also stresses the commonness of narcissistic pleasures among the handicapped group. As a result of his disability, and through such experiences as the necessity for undue physical exertion, pain, misfortune, fears and other factors associated with the disability itself, the handicapped person considers himself in a position of uniqueness and narcissism.

Of considerable importance also in Meng's formulation is the factor of overcompensation, which, he points out, frequently occurs in handicapped individuals. Meng, however, draws a sharp distinction between overcompensation as he is considering it and overcompensation as a result of organic inferiority described by Adler. Meng is considering unfavourable parent-child relationships and

unfavourable cultural-child relationships basic to compensatory behaviour. As a result of too much parental attention or as a result of condescending attitudes on the part of society, the handicapped child comes to feel inferior and unconsciously over compensates so as to achieve psychic stability.

Closely related to this point is a second which Meng stresses. In keeping with Freudian concepts, emphasis is placed upon the close and intimate relationships between the child and his parents. The child comes to look upon the parent as the source of all his satisfactions and believes the parent to be the person who must supply all of the basic needs which he as a child feels. At the same time the child looks upon the parent: (1) as the source of his handicap, which causes hate; and (2) also as the source of the solution to this handicapping situation, which results in ambivalence, since the emotions, related to both roles in the same situation are distinctly different. Conflict and maladjustment ensues when the child is unable to rationalise the two opposing points of view confronting him. Often, when a satisfactory solution is not reached, the handicapped person is noted to resort to hypochondriacal solutions as a compensatory mechanism. The close relationship between the defect and the body structure increases the ego libido. Since the individual feels rejected by the parent, by his peers, by the culture, the importance of this relationship becomes greater. As the need to protect the defect, the body, and, in fact, the ego itself becomes more apparent, hypochondriacal solutions are often used.<sup>23</sup>

#### *4. Other Theoretical Position*

We have mentioned the importance which Allen and Pearson place on the parental attitudes as being basic in the development of healthy adjustment among handicapped children. Similarly, numerous other authors have made contributions to psychological theory relating to disabled individuals. William M. Cruickshank draws attention to a number of them. They include the studies of Phelps<sup>24</sup>, Dembo<sup>25</sup>, Winkler<sup>26</sup>, Landis and Bolles<sup>27</sup>, Menninger<sup>28</sup>, Meyerson<sup>29</sup>, and Barker<sup>30</sup>. Clark<sup>31</sup> has pointed out in psychoanalytic terms that the ego loss due to a somatic defect resolves itself in emotional compensatory behaviour while Kubie, in the same frame of reference, points out that the impact of the handicap will be the result of the interaction of three factor-reality, conscious fantasy, unconscious fantasy and feeling<sup>32</sup>. Several studies based small samples of twins have in large measure

supported the conclusion of Allen and Pearson, namely that the impact of the disability is closely related to the adequacy or inadequacy of the parental attitudes which surround the child.<sup>33</sup> Barker and his associates have summarised the theoretical assumptions which are proposed as etiological problems in individuals with physical disability.

1. Compensation for inferiorities (Adler).
2. Easy narcissistic satisfactions deriving from pain and uniqueness (Meng, Clark).
3. Lack of normal plan and expressive actions (Meng, Wurtz).<sup>34</sup>
4. Easy cathexis to disabled part (Meng).
5. Unrelated anxieties transferred to bodily handicap (Meng, Stafford).<sup>35</sup>
6. Blame of parents (Meng, Allen and Pearson).
7. Feeling of guilt for hostility towards parents (Meng, Winkler).
8. Body-image at variance with reality (Schilder, Bender).
9. Efforts to achieve social acceptance (Meng, Lowman<sup>36</sup>, Allen and Pearson).
10. Dependent, demanding, apathetic behaviour deriving from over-solicitous protective situation (Meng, Allen and Pearson).
11. Variable, conflicting behaviour in response to variable, inconsistent attitudes of others (Allen and Pearson).
12. Goals beyond achievement possibilities due to pressure from parents, and to physical, social and economic restriction (Lord, Landis and Bolles).
13. Conflict between withdrawal and compensatory tendencies (von Baeyer).<sup>37</sup>
14. Acceptance of disability as a punishment for sin (Winkler).
15. Retaliatory behaviour for "unjust" treatment by nature (Meng)
16. Self-concept (Fishman)<sup>38</sup>.
17. Degree of acceptance of disability by disabled person (Fieldin)<sup>39</sup>.
18. Value systems of disabled person and his associates (Dembo).
19. Cultural role of disabled person (Schneider<sup>40</sup>, Fitzgerald <sup>41</sup>)
20. Intergroup dynamics (Schneider).

## Studies in Psycho-Social Adjustment

No satisfactory information regarding the adjustment of disabled children in comparison with that of non-disabled children is available. There are numerous studies which bring out the differences in the adjustment of the two groups. Their findings are in many instances offset by others which in general show the converse of the situation. According to the latter the adjustment of the disabled and the non-disabled can be favourably compared. We may consider this problem in detail. In order to study the emotional needs of crippled and non-crippled children, Cruickshank and Dolphin administered the Raths Self-Portrait N. Test to two groups of children. Group I consisted of 87 crippled children; and Group II of 193 non-crippled children. The group of crippled children included 42 boys and 45 girls; the group of non-disabled children, 97 boys and 96 girls. In the former there were children handicapped by cardiac conditions, cerebral palsy, poliomyelitis, Perthe's disease, progressive muscular dystrophy, spina bifida, and other orthopaedic or neurological impairments. The following Table shows the mean scores achieved by both groups of children in eight areas of emotional need as included in the test. It may be noted that there are no statistically significant differences to be observed between the two groups of children.

**Table VIII**

**SIGNIFICANCE OF THE DIFFERENCES IN MEANS OBTAINED BY CRIPPLED AND NON-CRIPPLED CHILDREN.**

Need	Means			
	Crippled group n 87	Non-crippled Group n 193	t-Scores	Per cent level of significance of t
	<b>Part A: Presence of Needs</b>			<b>t</b>
Belonging	3.46	2.88	1.4367	10-20
Achievement	4.45	3.81	1.4286	10-20
Economic Security	3.90	3.97	0.0147	90
Freedom from fear	6.37	6.07	0.4517	60-70
Love and affection	2.56	2.28	0.8505	30-40
Freedom from guilt	5.63	7.12	1.9487	5-10
Decision making	4.57	3.77	1.7010	5-10
Understanding world	4.99	5.99	1.5242	10-20

	Part B: Fulfilment of Needs			
Belonging	5.92	5.82	.1558	80-90
Achievement	5.05	5.02	.0532	90
Economic Security	4.24	3.83	.8888	30-40
Freedom from fear	4.09	4.43	.6730	50-60
Love and affection	5.34	6.19	1.2513	20-30
Freedom from guilt	3.49	3.47	.0488	90
Decision making	4.24	4.35	.2171	80-90
Understanding world	3.41	3.02	.9934	30-40

The same authors had earlier felt that the need to be free from feelings of fear and guilt would be characteristic of the crippled children. Later when they compared the adjustment of crippled and non-crippled children the same results were obtained.

### *The Use of Projective Test Materials*

Utilising children from the same population as included in the Cruickshank and Dolphin group, Broida and his associates made a more detailed study of the need to be free from intense feeling of fear, which was typical of both groups of children to a degree not noted in other areas of emotional need<sup>42</sup>. Broida administered a selected group of cards taken from the Symonds Picture Story Test, a thematic apperception-type test, to three groups of crippled children: (A) a group where the need to be free from feelings of fear was over-met, (B) a group normal with respect to this need, and (C) a group where the need was not being met. The authors state:

"It is interesting that the children in Group C..... produce the greatest number of social themes. Frequently these children expressed the desire in their stories for social acceptance and social participation. On the other hand the children in Group A whose need to be free from fears was grossly over-met also produce a large number of social themes. The significance of this is undoubtedly the same for Group A as for Group C. The earlier study of these children (Cruickshank and Dolphin) showed that the children of Group A were also those whose need for love and protection was, as was the fear factor, over-met. These crippled children who are overprotected to an extreme show in their themes hesitancy and insecurity about entering

into social activities. The wish for social participation is nevertheless present. Conversely, children in Group C whose fears were not alleviated also expressed caution concerning social situations. The children of Group C produced almost four times as many social themes as did the children of Group B.<sup>43</sup>

A second area in which significant differences were observed between the three groups of children pertained to themes containing guilt. "Children of Group B, whose need to be free from feelings of fear is within normal limits, produce five times as many guilt themes as Group A and more than twice as many as the children of Group C"<sup>44</sup>. The authors speculate that "morality is developed, at least in part, through social interaction both in and out of the family". The children of Group B (who were not impeded either through the presence of intense feelings of fear or through oversolicitation) were apparently emotionally free to move into social situations and have greater social participation. This greater social participation and the lack of maturity to cope with the problems encountered in the social situations, may have resulted in the production of guilt feelings. Since the children of Group A and C were restrained from participation in social situations because of the factor of fear, no guilt was experienced and little, if any, was apparent in their themes.

Since Broida's study indicated that with proper testing materials differences are observable within a group of crippled children, Smock and Cruickshank, utilizing another projective-type test, studied differences between handicapped and normal populations of children<sup>45</sup>. The Rosensweig Picture Frustration Study (Children's Form) was administered to matched groups of 30 handicapped children and 30 non-handicapped children. The groups were matched on the basis of age, sex, and intelligence. The handicapped children had a mean chronological age of 157.8 months (S.D. 12.12) and a mean intelligence quotient of 93.73 (S.D.11.02); the normal children, a mean chronological age of 157.3 (S.D.11.39), a mean intelligence quotient of 95.57 (S.D. 11.49). No statistically significant differences were obtained between the two groups on the matching criteria. Fourteen boys and 16 girls were included in each group. The handicapped group consisted of 15 orthopaedically handicapped children, 10 cardiac children, two partially sighted children, and two hard-of hearing children.

"One consistent difference between the groups is that the handicapped group responds to frustration in terms of its ego-threat

value, whereas the normal children's responses were more in terms of reaction to frustration of a specific need or interference with immediate goal activity. The level of frustration tolerance of the handicapped child is apparently much lower than that of the normal child. Consequently, frustrating situations are likely to be perceived by handicapped children as a threat to the total personality structure. This is not only true where the frustrating circumstances elicit a characteristic ego-defensive response from both groups, but is also the only area wherein a differential reaction is noted in the overall comparison of the two groups. Thus the handicapped child is likely to ignore the barrier to need-satisfaction and/or project blame and hostility upon the agent of frustration. The normal child is able to concentrate more of his attention upon the resolution of the problem with which he is immediately confronted." <sup>46</sup> Broida and his co-worker had suggested that a desire for and fear of social participation constituted one source of anxiety and fear reactions in the handicapped child. One of the objectives of Smock and Cruickshank was to observe whether social relations did constitute an area of frustration in greater degree for the handicapped child than for the non-handicapped child.

"Data from the present study confirm the findings of Broida et al; and, furthermore, indicate that the handicapped child simply cannot tolerate any situation wherein personal inadequacy is... implied in the relationship. The lack of any difference between the groups' reactions to ego-blocking situations indicated that interference with goal activity is not significant enough to elicit characteristic group reactions. It is when an individual is accused of some offense by another person that the greatest differences between the groups are noted. In such situations the handicapped child manifests significantly more ego-defensive-extrapunitive responses. There seems to be no question but that the handicapped child is basically insecure in his relationship with others and that he feels quite inadequate in dealing realistically with external appraisal or criticism by other. The result seems to be that in these situations the handicapped child uses a characteristic defense mechanism, i.e., the projection of blame and hostility upon the interpersonal environment." <sup>47</sup> Herein one sees partial verification of the retaliatory behaviour commented upon by Meng which he says grows out of a feeling on the part of the handicapped that nature has been "unjust".

It should be stressed that in use of non-threatening projective techniques basic differences in the adjustive mechanism, in the

emotional development, and in personality problems between crippled and non-crippled children become more apparent.

An investigation conducted by Vivian Harway in the line of the studies just reported, throws more light on the problem. The purpose of her study was to compare the behaviour of orthopaedically handicapped and physically normal children with regard to the extent to which the children were able to evaluate their capacities in a situation and were able to set goals for themselves which were consistent with their capacities. She studied two groups, one consisting of 80 orthopaedically handicapped children and the other of 40 physically normal children, matched for age, sex, and mental age. She employed two experimental situations: One, an intellectual task involving letter-symbol substitutions, the other, the Rotter Aspiration Board.

"The hypothesis that handicapped children would manifest behaviour that was vacillating and inconsistent due to uncertainty in goal setting situations was supported by the data. The low degree of association between the aspirations in the intellectual and motor tasks suggested, however, that both this variability and the tendency toward overestimation observed in the handicapped group were specific to particular situations or constellations of related situations and were not generalized behavioural approaches to the problem of self-evaluation... The second hypothesis, that the handicapped child would be more likely to manifest unrealistic patterns of approach to the problem of self-evaluation was supported in part by the experimental results. There was a tendency for more handicapped than normal children to utilize an unrealistically over ambitious approach on both tasks. In addition, a greater proportion of handicapped than normal children use a confused and inconsistent approach on the intellectual tasks. However, the degree of similarity between the two groups in approach is so great that it cannot be said that this hypothesis was fully borne out by the data."

According to William M. Cruickshank characteristic differences obtain in the adjustment of physically handicapped and normal children when considered as groups. It does not mean that the adjustive problems of the two groups of children are not basically the same. The problems to which both groups of children must adjust are in large measure identical. The techniques of adjustment and learning are comparable to both groups. The developmental processes of crippled children are considered to be no different than of normal

children. The fact, however, that a physical and visible defect is inserted into the life space of the handicapped child constitutes a factor of adjustment that is not in any degree present in the physically normal individual. The manner in which the crippled child integrates the disability into his life space will, of course, vary widely, just as people demonstrate individual differences and uniqueness in most other human characteristics.

## **Areas of Mal-adjustment**

Dr. Usha Bhatt observes that in every physically handicapped person there are two conflicting personalities: (1) the basic personality, and (2) the personality developed after disablement. In order that he may attain normalcy, it is essential that integration of these two personalities takes place. In most cases, the physically handicapped person is faced with conflict in various areas. The areas of conflict are mainly as follows:

### *(1) Body image*

One of the fascinating paradoxes of the human condition is that the human body, which unites us as a biological species gives rise in each of us, on a psychological level, to a body image that is one of the subtly unique features of the individual personality<sup>48</sup>. We have already seen that the exponent of the theory of body image was Dr. Paul Schilder.<sup>49</sup> The body image is defined as the concept or picture each person has of himself and of his physical structure. It is an integral part of the psycho-biological constitution of any individual. The very early, basic body image is incorporated into the psychic make up of an individual during the first few years of life. It depends upon inner impulses from muscles, organs, and skeletal structure in the body. It depends upon the perception one has of one's external body. Further, it is also moulded by the view others have of one's body, and how the person feels others view his body. It is, therefore, a very basic and profound psychic force within the psychological framework of the individual.<sup>50</sup> It plays a significant role in the development of personality as it determines to a large extent, an individual's idea of himself and the ideas of others about himself. The image of our body includes not only the body as a whole but also of different parts of it. When a disease occurs, particularly the one that results in crippling, the body image gets modified. It has to be reorganized in such a way that the disabled person's deformed or

missing limb can somehow fit into his original image. It is not surprising to find that the integration of a physical disability into this body image takes considerable time and psychic energy. In the initial stages, it is difficult for a disabled individual to find any place for the deformity or defect in his old body image. Because of this difficulty, many a disabled person resorts to defence mechanisms such as denial of disability or escape into fantasy. This sort of symptomatology is essentially a defence which the ego unconsciously sets up to maintain its integrity in the face of the new distorted body image. This point is illustrated by Katherine Hathway. When she looked at herself in a mirror after her recovery, she felt that the strange, pitiable, hideous figure she saw therein could not be her own reflection, because inside she felt like a healthy, ordinary, lucky person.<sup>51</sup>

## *(2) Self-Evaluation*

As has already been mentioned, society places certain value on the physical structure of an individual or on any part of the body. This makes it necessary for a disabled person to adjust himself to certain generally prevalent social psychological facts. His social status is perhaps the most important of them. Very often he is considered inferior by himself and his fellow men, not only with respect to his specific limitations, but as a total person. Feelings of shame, inferiority and worthlessness as well as insecurity and frustration may overwhelm him. Inability to cope with the social standards and emotional needs normally creates a sense of inadequacy leading to self devaluation. The devaluation that he encounters in his social contacts reflects upon his idea of 'himself'. Constitutional defects of any sort give rise to a sense of being different from others. In the case of a crippled individual, this sense comes rather easily and quickly. Howard Rusk and Eugene Tayler state: "Physical defect has a unique, personal, and often deep, unconscious significance for the disabled persons, 'for physique is one of the principal raw ingredients of personality.' It also has social significance, for physique is one of the grounds upon which class and caste distinctions are made."<sup>52</sup>

Roger Barker and others believe that "The Physically handicapped person being a member of a minority group and subject to the same economic and social pressures as other minority groups, is likely to develop the same emotional outlook as those who are discriminated against, because of age, sex, religion or race."<sup>53</sup> Katherine Hathway expresses quite vividly the influence of social attitudes on

the personality of the handicapped individual, when she says: "Yet when I found that the only social success I could possibly hope for among the girls and boys of my own age consisted in my being thought cute and funny and childish, in my thirst and hunger to mingle with them and to be accepted I began to cultivate in myself for meeting these social needs the character of the appealing little clown. I slipped into the ancient role that is always expected, it seems, of the imperfect ones of the world. I was Punch, the queer little human toy, the jester at court, respected and beloved in a way in which no other kind of person is respected and beloved." <sup>54</sup>

### *(3) Insecurity*

In addition to self devaluation a physically handicapped person suffers from yet another psychological situation, namely, insecurity. Disablement causes a sort of indefiniteness and uncertainty in many areas of his life. A person handicapped by birth feels that the world is not made for him and the one who experiences the impairment later in life finds it extremely difficult to adjust to a new environment and even the familiar situations become embarrassing. The following are the three areas in which insecurity manifests itself.

#### **(a) Physical Insecurity**

A physically handicapped person suffers from relatively greater feeling of insecurity about the world around him. The cultural world of houses, jobs, automobiles and cities is devised with the requirements of a broad group of relatively "normal" people in view. The special needs of a crippled or a blind person are not taken into account in planning a town or building. Obstacles on the pavements or roads and architectural barriers make the movements of the physically handicapped rather dangerous. A disabled person who is aware of the possibility of such impediments is filled with anxiety and fear. As Usha Bhatt<sup>55</sup> points out, a disabled person before planning his movement has to make sure whether he can climb up the steps, or whether the house to which he is invited has a lift, or whether he can make use of bus, train or any other ordinary mode of transport to find his destination. If he cannot get up or go down, he cannot get out of his dwelling; he cannot get into a bus, tram or taxi; he cannot walk into the milling crowd, and he cannot attend to his job if he has one, he at once feels that he has been cut off from the rest of the world. Inability to cope with an ordinary situation is rather frustrating. The

following words of Ramond Leslie Goldman, a hard of hearing, quoted by Roger G. Barker and Beatrice A. Wright<sup>56</sup> are self explanatory.

"I am in a classroom. The class is a Latin recitation. We hold our books open at a certain page and one by one, as the teacher calls our names, we rise and translate the text, the bidden student taking up where his predecessor left off. I studied conscientiously the night before; I am thoroughly prepared. Yet, agony fills me. I am cold with terror, wretched with desperation, stricken by a sense of impending disaster."

"I do what I can to avoid the horror of catastrophe. I try to save myself with my eyes. But I ask too much of my perceptive wits. My eyes must be on the teacher's lips whenever she happens to call my name. Even so, shall I know whether she says Goldman, or Goldsmith, or Gorham, or Bowman, I must be careful not to rise if it is one of the others whose name has been called."

"And how shall I know where to begin, granting that I rise at the correct time? I know with what page we began; I made certain of it by looking over the shoulder of the student in front of me. I turn a page whenever the others turn theirs. But where, on two pages, are they? I watch the reciting student. If he is behind me, I turn and see his face, but I cannot read Latin from his lips. If he is in front of me, I watch the back of his head. I can tell whether we are on the left hand or right hand page. The head is turned slightly to the left; the chin slowly sinks; then suddenly the chin goes up and the head turns a little to the right. The right-hand page. But what paragraph? What sentence? My classmate sits down. Looks at the teacher. Oh, God, why does she hold down her head that way, looking at the recitation cards; What did she say? Gorham, Goldman, Bowman.....?"

"In spite of my desperate efforts I wasn't always successful. There were times when I didn't rise when the teacher called my name, and sometimes I rose when she called on someone else. On one occasion I thought she spoke my name and I got up and began to recite. The class broke into laughter. Behind me, the boy whose name had been called had risen and began to recite before I got to my feet. When I got up and joined in, like a second alto coming into a musical rounds, the teacher had every right to look startled."

Another area of insecurity is concerned with his independence. In many cases, a physical disability requires the sufferer to accept

assistance from other people in his daily activities—activities which he was quite able to perform unaided prior to his disablement. The more severe the disability, the greater the degree of dependency that is forced upon him. He becomes an inhabitant of an entirely new, strange and unfamiliar world. The vast world around him, where he lived and loved as a normal being, is new to him, as foreign and formidable, as it is forbidden. His world in which everything is now restricted, where he cannot do what he likes. There is no freedom, no privacy, no movement, everything becomes rather stale and hackneyed. His new world becomes contracted and self-centred like that of a child. He may react to the situation in any of the two ways; either he may become excessively dependent on others, or he may try to make light of his disability and insist on doing everything for himself. He may make mistakes, and suffer humiliation or even defeat in his relentless struggle for an independent existence.<sup>57</sup>

### **(b) Emotional Insecurity**

The physically handicapped suffers from emotional insecurity in addition to his physical insecurity. Normally, every one feels insecure at times; but the frequency of such a feeling is increased considerably in the case of a crippled individual. All human behaviour is directed towards a certain goal, the attainment of which satisfies a certain basic emotional need. If progress towards a goal is thwarted, personality is disorganized, unless a new course of action to overcome or bypass the thwarting barrier is resorted to, to reach the goal. Physical handicaps tend to reduce the range of activities in which the individual can engage or to lower the level of his performance in some of the activities. Thus, unless his goals are appropriate to abilities which he possesses or can readily develop, he experiences frustrations with more than average frequency and intensity. When he discovers that his right to live and love is threatened, his emotional life comes to an ebb and creates mental agony of a serious nature.

For example, the sexual need of those who have shattered or distorted bodies is as great, if not greater, than those who are able-bodied. Like time, love is also a sure healer of wounds that cripple the body, mind or heart. Unhappily, this emotional urge remains unfulfilled in the case of many a handicapped person, thus plunging him into a whirlpool of insecurity.

### **(c) Social Insecurity**

In addition to the increased hazards and uncertainties in physical and emotional spheres, the handicapped person is faced with a similar state of affairs in his social world. The conflicting attitudes of normal persons toward the handicapped have been thoroughly established. Acceptance and rejection, sympathy and pity, trust and fear, valuation and devaluation are the rule. This is due partly to ambiguous, unstable perception. The disabled person is seen now as good, now as evil; now as able, now as unable; now as childish, now as adult. The consequence of this is that the handicapped person is inevitably unsure of his reception by others and uncertain of the stability of their attitudes.

#### ***(4) Level of Achievement***

This theory was propounded by Tamara Dembo and others, in "Adjustment of Misfortune." Success increases the valuation of an individual in his own eye and in the eyes of others. A good adjustment depends upon a frequent experience of success. This is largely independent of actual achievement, and is determined by the goals, expectations and aspirations of the person. A person experiences success when he achieves difficult tasks through his own efforts. Normally, an individual sets his aspirations at the highest pitch of his ability. The level of aspiration operates as a protective mechanism, so that most people experience success after success irrespective of their abilities.

This protective mechanism of the aspiration level is sometimes thrown out of gear. There are three situations in which this occurs: (1) If aspirations are placed below the level of an individual's highest ability, he will not experience success. He will feel frustrated, because his needs for self-esteem and social valuation are not satisfied. (2) The same is true of the person who places his goals high but who does not attain them through his own efforts. (3) There are those who regularly place their aspirations above their ability to achieve. They are then constantly confronted with failure and are similarly deprived of self-esteem and social appreciation.

For the non-disabled, it is relatively easy to maintain optimum level of aspiration for psychological success. The physically handicapped people, however, are peculiarly vulnerable to dangers that offset the smooth functioning of the level of aspiration. On the one hand, the temptations to accept as their own, the goals of their

non-disabled associates that are beyond their ability to achieve, are great. The desire for social approval is powerful with everybody, but with the handicapped it becomes an obsession. They experience repeated failures as a result of over-estimation of their abilities. On the other hand, in many cases, the family and friends have a strong tendency to overprotect the handicapped from the rigours of the normal world. In so doing, the handicapped are often deprived of achieving the desired goals through their own efforts. Since they are not allowed to fly on their own, the physically handicapped soon forget that they have wings at all.<sup>58</sup>

## **Mechanisms of Adjustment**

It has already been pointed out that the adjustmental problems of the physically disabled are not categorically different from those of the non-disabled; for, the physically handicapped are motivated by the same drives and respond to drives with the same mechanisms as are used by the able-bodied. Nevertheless adjustment in general, tends to be more difficult for them than for the able-bodied. Consequently they are more likely to use mechanisms, which are less desirable. The essential difference is not in kind, but in the frequency and in the degree of intensity of undesirable mechanisms. There is no special psychology of the handicapped. For the most part, they represent an exaggeration of certain responses to the physical, social and cultural world around them.

Dr. Usha Bhatt in her study 'The Physically Handicapped in India' has succinctly enumerated some of the mechanisms commonly used by the disabled:-

### **(1) Trial behaviour**

This is the most fundamental and widely used mechanism of adjustment. If an old pre-established way fails, an alternative way will be tried. If that alternate way is successful, it is utilized later on to meet a similar situation.

### **(2) Compensation**

It means that an individual is possessed of a shortcoming which he is trying to offset by the development of a special ability. It is a balancing of success against failure. Alfred Adler defines the term in a different way in that it presupposes the existence of an original

weakness which the individual overcomes by developing it into a strength. Adler says: "It is one of the greatest advantages to be born with defective organs."<sup>59</sup> Compensation is of many types. Direct action or compensation occurs when through persistent attack on the source of an actual inferiority it is finally and permanently removed. When the source of deficiency is not only removed, but actually converted into a source of strength it is called over compensation.

The relationship between a physical defect and creative ability has been the source of much literary speculation. The suffering caused by crippled remoulds personality. It acts as a challenge and a stimulus and draws out what is latent in the individual. Disease often produces creative minds that are brilliant in their scope and imagination. Byron had a club-foot. Dostoievsky was an epileptic. Pope, Darwin, Heine, Keats, Stevenson, Wilberforce, Chopin, Massenet, VanGogh were all sick men. Other outstanding physically handicapped personalities in the fields of art, literature, music, religion and politics, were: Kant, Leibnitz, Schopenhauer, Pope Gregory VII, Ignatius de Loyola, Henri de Toulouse Lautrec, Leonardo da Vinci, Mozart, Schubert, Wagner, Queen Elizabeth, Richard III, Beethoven, Edison, Alexander the Great, Vasco da Gama, and the last Kaiser of Germany. The inward quest imposed by restricted mobility might have been responsible for such marvellous achievements.

It is, however, wrong to think that a crippling disability invariably produces a genius. For, "one may have the courage of a lion, but without the energy to exercise it, is it ever courage? Desire is not enough. Ambition is not enough. Intelligence, talent, character, opportunity are not enough. The citadel falls only to him who exerts a ceaseless, relentless, ever-increasing drive and holds on till death or victory"<sup>60</sup>. Lacking the indomitable spirit and invincible courage of the individuals described above, a cripple remains a cripple and nothing more than that ! Compensation is an acquired taste. It is essentially an attempt on the part of the crippled individual to maintain or build up his self-esteem. Often the physically defective individual resorts to compensation, because society expects him to do something to 'make up' his deficiency.

### *(3) Escape Mechanism*

One way of not facing the problem of adjustment to a difficult situation is to avoid or escape it. Mind is a clever contriver that invents

all sorts of strange subterfuges for ignoring the painful reality. The disabled individual may become a prey to his false imagination and crawl into his innermost recesses, becoming unsocial, and even anti-social at times. Mental escapism takes many forms and guises. It may take the form of day-dreaming and fantasy. The physically handicapped person may live in the memory of past life which was easier, or may dive into the ocean of optimism that seemingly lies ahead, thus divesting the present of its past legacy and future prospects. This tendency is symptomatic of the introvert. In extreme cases, all contacts with social environment may be broken. A crippled individual may try to deny the existence of his disability by believing that it does not make any difference whatsoever, either to himself, or to others. He forgets and expects others to forget his disability. Every individual resorts to introvertive behaviour, when environmental demands upon him become excessive, or when he is too frequently expected to attempt acts, which are likely to result in failure.

Prolonged pain and repeated failures destroy morale and lead the individual sufferer into a world of make-believe. Withdrawal or denial of disability is a temporary phase of the process of readjustment. It has its own value in providing the much needed emotional relief. Forgetting for ever is hardly possible, for in his daily life many occasions arise which remind the disabled person of his disability.

Another form of escape reaction is regression. It means a tendency to meet situations by reversion to childish or infantile emotions and forms of behaviour. Disability restricts the scope of activity of the affected individual to a narrow circle and enforces dependence on others, as in the case of a child. Therefore, he may resort to regressive behaviour. This may awaken once again the conflicts of his early life and may give rise to anxiety, irrational behaviour, and distortions in the perception of self and others. This is also a temporary phase, but there are some people who are unable to overcome dependency problems and to widen the range of their activities.

#### *(4) Identification*

Whenever an individual adopts the mannerisms and habits of another person or a number of persons, his behaviour is termed an example of 'Identification'. The danger of this frequently used, and for the most part normal mechanism, is that the individual may substitute the activity of the person with whom he has identified himself for his

own activity. A crippled child may identify himself with an able-bodied child. The satisfaction he has learned to derive from vicarious accomplishments may be sufficient to relieve him of the need to try to do things for himself.

### *(5) Projection*

This is a mechanism which is allied to identification in a negative way. It consists of unconsciously attributing one's thoughts, feelings, and desires to others, although one may decline to accept them as belonging to oneself. An extreme example of projection is that exhibited by the paranoid who is constantly under the delusion of either persecution of grandeur. Projection is resorted to by people when they feel insecure. The disabled individual may think that the whole world is against him and that his disablement is the outcome of deliberate action on the part of others, especially the doctors. Cases of ego-centrism are not uncommon.

### *(6) Rationalization*

When an individual presents socially acceptable and, therefore, good reasons in the place of real reasons, which are undesirable and unacceptable to explain his behaviour, the mechanism is termed 'Rationalization.' A disabled individual may shield his laziness or inability to work under the pretext of disability.

### *(7) Fixation*

It means over-persistence of situations, elements, or characters. Many crippled individuals are found to have fixation for either of their parents, especially when they are disabled in early childhood.

### *(8) Sublimation*

Here blocked drives or motives may find re-expression on a higher social level. Most of the intelligent individuals realise fairly early in their lives that many of their drives and impulses can never be satisfied in their natural form. The physically handicapped are called upon to make more substitutions than the able-bodied. The problem of sublimation is rather difficult for them because in their case the choice of substitute activities is necessarily limited. A crippled person, who cannot satisfy his sexual drive, may divert that energy into other

channels that are socially more desirable like religion, art and literature. Sublimation is easier when the substitute resembles the original activity in some form or the other.

Katherine Hathaway says: "Just by saying, over and over, and believing as I said it, 'God within me, God within me,' I could send entirely out of myself the quick-spreading toxic fear and the disintegration it created. Perhaps this was a symbolic experience by which I unconsciously found relief for my sexual starvation. Perhaps the miraculous sense of peace which I got from saying 'God within me' was a trick of the unconscious, which substituted a religious ecstasy for an ecstasy of the body." <sup>61</sup>

### *(9) Depression*

In the physically disabled, depression may take many forms. There may be a markedly depressed mood, there may be crying, there may be lack of interest in the surroundings, or there may be suicide attempts. The patients may lie in bed and insist that it is useless to continue the treatment. In extreme cases, depression may take a form that may obviously seem quite contradictory. In such cases the individuals show marked elation and become hypomanic. They become unnecessarily overactive. Depression is common at the earliest stage and tends to diminish with time. Its place is later on taken by anxiety.

### *(10) Anxiety*

In psychiatry, a distinction is made between fear and anxiety. Fear is an emotional reaction of the individual to an external threat, while anxiety is an emotional reaction to an internal threat. The fear or anxiety may be about being looked at, being discriminated against, being unattractive, being disgusting and about losing one's femininity or masculinity. As with depressions, anxieties may extend to levels far beyond disability.

### *(11) Psycho-neurotic Mechanisms*

In psycho-neurosis the symptoms are mobilized by physical disability, but their origins lie in the earlier experiences of the individual. The most prevalent types are:

(a) **Conversion Symptoms:** Conversion is the expression of repressed conflicts into sensory and motor-manifestations. Conversion symptoms are usually superimposed upon physical disability.

(b) **Hysterical Crises:** They are panic reactions involving emotional outbursts as well as various types of motor activities. Such reactions are commonly found in an individual soon after he becomes conscious of his disability.

(c) **Phobias:** A phobia is a morbid fear of a thing or a situation which would be normally responded to without fear. It is generally accompanied by an avoidance of the object or the situation feared. Many handicapped persons have a phobia of the situation in which they acquired their handicap. For example, one who may have lost his limb in an air-crash may refuse to travel by air.

(d) **Repression:** It is a complete unconscious inhibition of unpleasant memories. The disabled individual is more likely to suffer from repression than the normal individual, as he is more exposed to situations in which a conflict of two urges is likely to occur.

(e) **Perfectionism:** Perfectionism may take many of the following forms: (i) Patient's refusal to leave the institution on the ground that he is not yet cured; (ii) Patient's taking too long a time in dressing himself; (iii) Patient's refusal to accept substitutes such as artificial limbs, and (iv) Patient's over-zealousness about cleanliness.

## *(12) Hypochondriasis*

A physically handicapped individual is more likely to develop hypochondriasis than an able-bodied person. A healthy person has many fields of activities, and, therefore, may not have the time to concentrate on his body. A crippled individual, on the other hand, has a particular organic defect that constantly attracts his attention. Besides, he has greater chances of becoming a narcissist as the field of his activities is rather limited. Another reason is that he may transfer other anxieties, due to personal and environmental factors, to his organic defects.

The various defence mechanisms which the 'ego' utilizes when faced with a situation that threatens its integration are as discussed above. The most commonly used mechanisms are: withdrawal, over-compensation, denial, projection, regression and conversion. These

defences are found in all types and degrees of crippling conditions and are directly related to the pre-morbid personality of the individual rather than to his disability. There are certain factors in the personality structure of the individual that would determine his proneness to some of the unhealthy mechanisms enumerated above. The factors on the positive side are: an integrated ego; and a history of good interpersonal relations. The negative factors are: poorly integrated ego, excessive bodily concern, brain involvement and paranoid tendencies.

## **Important Factors in Adjustment**

There are several factors that affect the adjustment of the physically handicapped to their disability. Dr. Usha Bhatt has summarised them as follows:

### *(1) Duration of Disability*

This factor seems to have no appreciable bearing on the adjustment of the physically handicapped individual.<sup>62</sup>

### *(2) Severity or Extent of Disability*

According to some psychologists,<sup>63</sup> severity of disablement is an important factor in the adjustment of the crippled individual. However, F.S. Copellman,<sup>64</sup> who studied hospitalized poliomyelitis cases, expresses the view that severity of reaction is independent of severity of disease. Likewise, C.L. Lowman's<sup>65</sup> study of poliomyelitis cases reveals that there is not much correlation between the degree of deformity and personality, social and vocational adjustment of the crippled. These divergent opinions have been reconciled in a theory advanced by Roger Barker and others.<sup>66</sup> They compared the cases of "Beverly", who was slightly disabled, and "Marcia", who was severely crippled. Beverly's condition and attitude prompted her to strive for the appearance of complete physical normalcy. Marcia's handicap was evident, and she had adjusted to her position in society as cripple. The fact that Beverly was neither entirely normal nor extremely disabled placed her between two sets of forces acting in opposite directions. She was on the margin between two different areas. The authors suggest that such "marginality" is likely to result in conflict and maladjustment. In most case, however, severity of disability was found to be an important factor affecting the personality adjustment of the crippled individuals.

### *(3) Type of Disability*

Most of the studies have shown no correlation between type of disability and type of maladjustment.<sup>67</sup> The only cases, where disability is definitely accompanied by certain personality disorders, are those of brain injuries. There are several organic diseases like encephalitis, multiple sclerosis, muscular dystrophy and Parkinsonism which are accompanied by mental and emotional changes. It has been found that the brain-injured have a tendency to irritability, lack of control, emotional instability, disturbance of memory and lack of concentration.

In the past, it was common to associate certain characteristics with a particular type of disability. Even to-day, opinions are divided as to whether a particular type of disability is accompanied by peculiar personality changes. For example, W.M. Phelps<sup>68</sup> states that there are fundamental differences among the various types of cerebral palsy. Introversion movements of the athetoid, on the other hand, are variable in the frustrations caused by them and frequently give rise to outbursts of anger. The athetoid is not cheerful like the spastic and he is much more friendly, sociable and impulsive than the spastic. He is an extrovert in contrast to the spastic who is an introvert. There are others<sup>69</sup> who believe that there are no such differences between different types of cerebral palsy, especially between the spastic and the athetoid.

In many cases, the personality changes produced by disability work in an indirect way. For example, because of his inability to regulate excretory functions, to which society attaches so much importance, a paraplegic is bound to suffer from feelings of shame, guilt and inferiority for behaving on such an infantile and unclean level. Sexual impotence in many of these people is likely to cause depression and withdrawal. The paraplegic is subjected to an increasing number of frustrating situations with a concomitant decrease in the usual outlets of activity to reduce feelings of hostility and anger. Therefore, it is not surprising to find that he resorts to explosive outbursts of anger.

Once multiple sclerosis was associated with a euphoric condition. But this view is now rejected.<sup>70</sup>

### *(4) Cause of Disability*

The circumstances in which a disability is acquired also influence the adjustment of the disabled individual. The reactions of a child who

is born crippled; those of a soldier who has been wounded while fighting for his nation; those of an industrial worker who meets with an accident whilst on duty; and those of a man who sustains a disability while trying to save the life of a fellow being, will be entirely different.

### *(5) The Age of Onset of Disability*

The age of onset of disability is found to be a factor in determining the personal adjustment of the individual. The crippled child, for example, will react in a different manner to his disability than a disabled adult. It is relatively easier for a child, whose modes of behaviour are not well settled, to adjust himself to disability. The further we progress up the age scale, the more difficult, adjustment becomes. The habits and modes of living are well established in an adult, and it is, therefore, difficult for him to change over to a new way of life. R.C. Kammerer,<sup>71</sup> however, states that adjustment does not depend on the chronological age.

In the adolescent the handicap produces more emotional disturbance than in anybody else. Adolescence is a period of storms and stresses. The emotional problems of a crippled adolescent are bound to be intensified because of his inability to express his physical energy in normal outlets, like sports.

### *(6) Level of Intelligence*

Psychologists have found some correlation between the level of intelligence and psychological adjustment. "It is difficult to say how much any one suffers, but the psychologists have established that the pain threshold varies in all of us, and that there is probably less resistance to pain in more intelligent people. Intelligence means a wider imagination, a greater variety of choices, a deeper sensitivity, and because of these, more diverse mental and emotional dilemmas."<sup>72</sup> Dr. Carlson, from his vast experience with spastics, mentions that often a less intelligent boy adjusted more quickly to new situations because of a certain brashness, self-confidence, and lack of sensitivity. According to another view higher intelligence facilitates adjustment. "But just as greater intelligence brings more problems with it, so does it bring a wider range of possibilities. The very intelligent person may well run to extremes in this rebirth and either fail miserably and become suicidal, or succeed remarkably and perhaps join the ranks of those who gain greatly through their path, in wisdom and in vision."<sup>73</sup>

## *(7) Attitude of the Family*

Most of the psychologists have found that the attitudes of parents and other close relatives constitute yet another determinant of personality mal-adjustment.<sup>74</sup> Parents generally tend to be over-protective, especially when they can afford to be so, but cases of negligence are not infrequent.

The attitudes of parents and family members have much to do with the personal and social adjustment as well as personality development of a physically handicapped individual. The physically disabled child at an early age requires an unusual amount of help and attention, and thus receives social status and self esteem. However as he becomes older, his reaction to his disability changes. He is more expensive in terms of both time and money. His parents may reject the child because of resentment or guilt. This rejection may then be transferred to the child, who, in turn, resents the parents. But, being dependent upon the parents, the child is forced to suppress his blame, which produce self hostility, guilt and anxiety. On the other hand, the parents whether from genuine sympathy or guilt reactions, may tend to over-protect the child, with equally harmful results. In either instance, the child's ego and social status needs are frustrated.

Coughlin selected a group of 51 children from the files of the Detroit Orthopaedic Clinic.<sup>75</sup> In all cases the parents of the children were living and the attitudes of the parents were known to the worker. Coughlin finds four broad categories of parental attitudes. "The attitude considered most constructive was that of the relatively small number of parents who had sufficient intellectual insight and were so well-adjusted personally that they were able, while fully realizing the implications of the orthopaedic problem, to accept it and turn their attention and energies toward finding means of compensating for it". A second generally positive attitude was expressed by some parents who apparently had a "complete acceptance of a handicapped child on an emotional level with very little or no intellectual insight." A number of parents had an adequate intellectual understanding of the child's problem, but emotionally were unable to provide him with complete acceptance. Thus these parents demonstrated such feelings as over anxiety, over protection, and "overstimulation of the patient to accomplish more than he was capable." Finally, a group of parents were observed who neither intellectually nor emotionally were able to accept the child. These parents possessed both a lack of understanding

of the physical condition of the child and "destructive attitudes" toward the child. Included among these latter were such factors as fear of surgery, fear that the child might get worse, fear of what society would think, and fear of inability to the economically independent.

Three examples of different parental attitudes and their reactions on the disabled person are cited below:

(a) Lord Byron in his childhood once overheard his mother remarking to her maid-servant: "Do you think I could care anything for that lame boy?" These words were like a stab to his heart. Byron says: "My poor mother and after her my school fellows by their taunts led me to consider my lameness as the greatest misfortune and I have never been able to conquer this feeling."

(b) Katherine Hathaway, giving an account of her reactions to her mother's feelings of guilt, says: "Although I felt an almost unbearable tenderness and love for her in those moments, I felt hatred and rebellion too. I hated and rejected the idea that there was anything tragic about my illness, or that she was to blame."<sup>76</sup>

(c) Dr. Earl Carlson found the attitude of his mother to be most helpful. When her neighbours used to remark about 'bad blood' and 'pre-natal influences,' she would answer that he was 'just born that way'.

The attitude of the spouse is as important for an adult disabled as the attitude of parents for a crippled child. Consciously or unconsciously, many a woman often tries to keep her disabled man pampered into womanly dependence. The right type of attitude is that the family should have what Betswey Barton has described as Brahmanic Love. "Our love must take a strange turn, a turn that seems unloving, sometimes harsh. For when the wounded are becoming well again in body and mind, the mistakes we will make in trying to help them will err on the side of love. Our love may be at fault. The ones who are growing under our eyes, who are becoming strong, may need to try their wings, and we may forget, so long has been the growing time, that they have wings to try."<sup>77</sup>

### *(8) Attitude of Wider Society*

We have already discussed how social devaluation leads to self-devaluation. The negative social attitudes intensify the already present personality problems of the handicapped.

Here is an example of the reactions of a handicapped person to two different types of attitudes. When Dr. Carlson was going to the Yale Medical College, he had many professors out of whom he remembers clearly only two. One of these was lenient to him and made certain concessions to him. But in his examination for that particular subject, Carlson failed. On the other hand, the other professor was very strict and exacting. One day, the professor asked him a question in class. Carlson rose to his feet and in embarrassment started to stammer out an answer. In the meanwhile, his spasticity reasserted itself; twitching and shaking he sat down. The professor called on him to stand up and said: "Carlson, you are nervous because you don't know. Don't think we are going to pass you just because you are a cripple."<sup>78</sup> This attitude of the hard taskmaster knocked out of his head the tendency to take advantage of his handicap.

As social attitudes change, the personality of the physically handicapped will also change.

These are the extrinsic factors that influence the personality of the physically handicapped. There is, however, an intrinsic factor that plays a very important role in their eventual adjustment.

### *(9) Previous Personality Pattern of the Individual*

The previous personality pattern of the handicapped person will, to some extent, act as a determinant of any mal-adjustment that may develop later on. A person who has been overprotected will adjust to his handicap differently than one who has a sense of independence. Generally, one is inclined to attribute the behaviour of an individual to reasons that appear to be more or less obvious. Thus, one attributes good and bad qualities found in a crippled individual to his disability. On the one hand, we explain the greatness of Roosevelt, Byron, and other crippled heroes, by referring to their disability; on the other hand, we attribute the diabolic nature of Richard III, and the political intrigues of the Kaiser of Germany to their disability. "It is extremely unlikely that an accident or a disease resulting in physical alteration of the individual will completely wipe out the role of nature and nurture."<sup>79</sup>

A disability may help the individual sufferer to realize his latent potentialities by affording him an opportunity to discover them. It unfolds what is already there. It does not bring with it anything new. The pre-morbid personality of the disabled individual must, therefore,

be considered in his psychological adjustment. An individual with a dependent, self-pitying attitude toward himself and life will be flooded by relatively minor handicaps. On the other hand, one who is self-confident will compensate for a much more severe handicap and, in some cases, will do better with his handicap than he ever did before. It is not the handicap that determines what an individual can do after his disablement, but it is the combination of the handicap, the person and the society that determines an individual's adjustment to his disability. That is why even when two persons have the same type of disability and circumstances, one may become a Don Juan like Byron or a dare-devil like Bader and lick his disability, while the other may become a helpless invalid, brooding over his past and uncertain about his future, thus allowing his disability to lick him, instead.

Many studies have been made on the personality problems of the physically handicapped.<sup>80</sup>

### *(10) Acceptance of Disability*

Acceptance of disability is basic to any programme of rehabilitation. Rehabilitation will not succeed unless the disabled person accepts his limitations and changes his own goals accordingly. Acceptance of losses does not mean denial of the existence of disability, nor does it mean submission to one's misfortune. It means that the individual should neither overestimate his abilities nor should he underestimate them. Here too, he must follow the middle path. He should attempt to shape his circumstances; but if these are too strong to be altered, he should accept them, and change his own behaviour accordingly. "The desired state which we call 'acceptance of loss' does not mean becoming reconciled to the unfortunate state. Instead, acceptance of loss means overcoming the feelings that one is an unfortunate person – a process of value change."<sup>81</sup> The process of 'acceptance of loss' has been dealt with at length by Tamara Dembo and others in their *Theory of Misfortune*.<sup>82</sup>

The immediate reactions to disability are always colossal. The sense of loss pervades all the fields – even those fields where it will have no significance. The physically handicapped person cannot look beyond the periphery of his own concerns. He cannot forget the past. His thoughts linger on the lost or the affected limb and its functions. He is like a person stranded at the cross-roads. "At this crucial point, the patient has crossed the no-man's land of bewilderment, anxiety,

doubt, indecision, fear, sometimes panic. Behind him is his old self with its intact body and body image, his familiar plans and hopes for the future ahead of him, a disabled self which, although yet to be explored, has lost much of its desolate and lonely outlook. Many disabled persons never find the way; they wander in no-man's waste, wishfully thinking that some miraculous cure will be discovered which will eventually restore them to the old intact self, never finding the potentialities that might be theirs if they would cross into the disabled self." <sup>83</sup>

Denial of disability, that is, forgetting that the disability exists, may afford a temporary relief from emotional strain. But forgetting the fact, that so obviously stares a disabled person in the face at every step of his life, is not only impossible but also injurious. His behaviour 'as if' the disability does not exist, may keep others from intruding into his privacy. But, in so far as his intimate relationships with his family and friends are concerned, this 'as if' behaviour has serious consequences. Persistent role-playing causes a constant strain between the persons. Intimate relationships are based on the capacity of the individuals concerned to share each other's feelings. If the normal behaviour that is appropriate to strangers continues for a long time, they will feel estranged.

The way in which the disabled person tries to adjust himself is determined by the fact that his values are those of the non-disabled individual and, therefore, imply devaluation of himself. Disability changes his physique, but it does not change his value system. His idol is the normal individual. So long as this continues, he will continue to devalue himself as one who falls below the ideal, namely, the non-disabled. By refusing to face reality he exposes himself to more dangers. By trying to conceal his disability in order to be accepted as a normal person, he does not cease to be a handicapped person in the eyes of normal people. They will always regard him as an outsider. Again, in his anxiety to identify himself with the normal group, he avoids mixing with disabled people who belong to his own group, for fear that they may find out his guise. Thus, he neither belongs to the normal group, nor does he belong to the 'disabled group'. He remains on the border-line and suffers from all the disadvantages of an ambiguous position. He is unable to reconcile reality with his expectations. It is very difficult to produce changes in the value system, that is established once and for all. But, unless these changes are effected, so that the disabled person may regard himself as inferior

to the non-disabled only in certain respects and not in all respects, no adjustment can take place. He must see the lost value in a large perspective. He must feel that there are other values too, for which he can live. For most of the physically handicapped, this value fluctuation takes place with the passing of time.

As Dr. Usha Bhatt rightly observes, the diseased, the disabled, or the missing part of the body, can be cured, attended to or replaced, where possible with an artificial one, but the negative attitude of the mind is difficult to surmount. She summarises the different ways in which a physically handicapped person can be made to accept his disability. They are:

(1) **Contact with others who may be in an identical position.** A disabled man without a leg, will listen more attentively to another disabled man without a leg, than to any one who is not similarly disabled. Narrating of success stories of the handicapped or showing such films also helps.

(2) **An accurate knowledge of the causes, consequences and treatment of disability.** Many a disabled individual does not know the natural causes of his disablement. Ignorance creates fear, insecurity, uncertainty and vagueness. Once he gains a knowledge about his loss, he knows where he stands with regard to his disability; he knows whether he will be able to resume his former activities and to what extent.

(3) **Basic to acceptance of disability is the setting up of goals.** Without goals, there is no motivation; and without motivation, there is no restoration. Every human life is purposeful. The handicapped individual is no exception to this rule. The conquest of his handicap lies in having a wide range of interests in as many things and persons as possible. An objective interest in something else, or somebody else, takes him out of himself. The watertight compartment, in which he had confined himself, would thus open out and his self-centredness would at once vanish, making room for something better and wider. Dr. Earl Carlson was so disabled that he could hardly move out. Once, while he was being driven in a home-made wagon, he saw an apple at a fruit-stand and automatically his hands stretched out. He says: "A falling apple suggested the law of gravity to Issac Newton; my stolen apples gave me the clue, not followed-up for years, that the secret of control for the muscularly handicapped lies in concentration on a purpose. The more objective the interest in performing an act,

the easier it is to do it." "Control of motions is won by the control of emotions." He further confesses: "My over-powering interest in the runaway horse had enabled me to take my first unsupported steps. The elimination of emotional factors, such as anxiety, fear, and self-consciousness, from the muscular act by developing the patient's interest in what he is doing, often does more for his physical development than any amount of conscious muscle training."<sup>84</sup>

The goals must be realizable, otherwise the physically handicapped individual may feel frustrated and get confused. "Accepting oneself as a disabled person does not mean accepting oneself 'as is.' It means improving the improvable within a framework that is meaningful for the particular individual. The disabled person also has a strong need to be understood as a disabled person..... The security of genuine acceptance ultimately rests upon his discarding pretenses and accepting the real person that he is. Only then can the chasm between himself and the non-disabled shrink."<sup>85</sup> In order that a disabled individual may experience more success than failure, he must have flexibility of means and a variety of goals in various fields. For example, in the vocational field, opportunities for success are numerous at the higher levels of responsible posts. Unfortunately, the disabled individuals are generally excluded from supervisory and executive posts that give them chances for experiencing success. In the social field, the disabled person suffers from social resistance. His acceptance and social success will be greater in a small community, where the distances are short, and relationships intimate.

**(4) Increasing the feeling of security.** The disabled individual suffers from three types of insecurity: physical, psychological and social; (i) physical insecurity may be lessened by making him independent as far as his daily activities are concerned; (ii) psychological security increases with a rise in the scale of his achievements. But this does not depend on the individual alone. Education of the members of his family will go a long way to make him feel secure. The social worker too has a great role to play in this field. She can help the disabled in giving vent to his inner feelings so that he may speak out his fears, worries and agonies; (iii) social security cannot be increased through the efforts of the disabled person alone. Human life is, from beginning to end, a social enterprise. Social tendencies are as much a part of the fibre of the individual personality as the basic emotional drives. An individual plays the roles society expects him to play. The disabled individual feels insecure socially because he is not accepted by society.

He himself can influence the attitude of society, to a certain extent, although society is disoriented and disorganized as regards his disability.

The disabled individual must look upon his disability with objectivity. He should persuade others to accept his disabilities as they are; but he must also show them his abilities. Only in this way, can he bridge the gulf between his own view of disability and the view of those around him. The social worker can help much to increase this sense of social security by making the community at large conscious of his problems.

A physically handicapped individual, who has accepted his loss, will not devalue himself in contrast to one who has not accepted his disability. This will influence their attitudes towards non-acceptance by society. The former will have a philosophic attitude towards his disability, because he sees that the negative evaluations of others are unwarranted. The latter, however, feels that his non-acceptance by society is justified. Contradictory as it may appear, the maladjusted disabled person desires to be accepted by the non-disabled, although he feels that he ought not be accepted.

**(5) Sports and recreational amenities for the physically handicapped:** Cultural activities, like dance, music and outings facilitate the return of the physically handicapped person to a normal life. Recreation has a socializing influence which makes the handicapped individual feel socially secure. Besides, sports provide an outlet for his pent-up physical and emotional energies. They enable the physically handicapped to lose sight of their disabilities, to recapture the sense of enjoying life's beauty and to overcome the embarrassment of being a member of the minority group. The value of sports for the physically handicapped is not yet fully recognized. The physically handicapped too, however severe their disability may be, have a natural desire for fun, adventure and thrill in life. Camping and other recreational activities offer them an opportunity to improve morale, to build spirit, to better inter-personal relationships and to widen horizons.

**(6) Spiritual outlook on life:** A physically handicapped individual is not free physically. It is, therefore, all the more desirable that he should experience the freedom of spirit. The view he takes of his life, and its purpose, will influence in a profound manner his reactions to disability. Disability in some cases, has shaken one's faith in religion

and God, while in others, it has made one's faith more deep-rooted. Religion has been found to be one of the strongest forces in the acceptance of disability.

Harold Russell, in his autobiography confesses thus: "The important thing is that this seeming disaster has brought me a priceless wealth of spirit that I am sure I could never have possessed otherwise. There is no easy formula for a happy living. It is not what you have lost, but what you have left that counts. Too many of us squander precious energy, time and courage dreaming of things that were and never can be again, instead of dedicating ourselves to realities and the heavy tasks of today. For me that was and is the all important fact that the human soul, beaten down, overwhelmed, forced by complete failure and ruin, can still rise up against unbearable odds and triumph."<sup>86</sup>

The most important factor in the rehabilitation of the physically handicapped is acceptance of loss by himself, his family and society. He is not rehabilitated by others. He is helped to rehabilitate himself by a team of experts in the field and he is himself the most important member manning that team. But for his active co-operation with the team working for his salvage, the very purpose of rehabilitation would be defeated.

The study of the psychology of the physically handicapped helps us to understand normal psychology. For here, in exaggerated and visible form is laid bare the net-work of human character in the making. The physically handicapped represent some of the exaggerated modes of behaviour of the non-disabled. Although a physical disability affects the development of an individual's personality, in a majority of cases, it is only one facet of the total personality pattern. Human personality is not just a series of loose unconnected traits, but an integrated whole. It is wrong, therefore, to think of the cripple as a distinct personality type, introversive, crooked, depraved, paranoid or villainous.

It is unfortunate that while there are anaesthetics and sedatives to relieve the physical pain caused by crippling, the mental pain—fear, insecurity, depression—that usually accompanies a crippling disability, remains for the most part unrecognized. The significance of the psychosomatic nature of disability is only recently realized. It must be remembered that no amount of physical rehabilitation will produce lasting results without the co-operation of the mind.

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## CHAPTER VII

### ATTITUDE OF SOCIETY TOWARDS THE HANDICAPPED

The individual is part and product of his social environment. His social relationships and his status and role performance are the vital areas of his social functioning. He lives in society, community, neighbourhood, and family, not only as an individual but as a responsible person with multiple roles and statuses in a complex network of social relationships. The concept of a full and happy life is linked with the individual's healthy social adjustment and zestful social functioning. An unhappy social life tells severely upon other areas of one's being. In the case of the physically handicapped it is a known fact that many of them, if not all, lead an imbalanced and frustrating social life. Their relationships, their attitudes and their behaviour patterns are vitally affected by the nature and extent of the harmony or disharmony of their relationship with family members, relatives, friends, community members, workplace colleagues and employers etc. Tragically enough, they are "less handicapped by their own physical disability than by the social attitude"<sup>1</sup> meted out to them in every walk of life.<sup>2</sup>

The problems of the physically handicapped are not only those caused by their disability per se, but also those of adjustment in a world whose apathetic or hostile attitude towards them magnifies their troubles and threatens their very existence as human beings. A disabled man, like every other man, is a 'social being' and is, therefore, no different from his able-bodied brethren. It is an irony, however, that he is not accepted by society as he is, for it invariably focuses its attention on his disabilities rather than on his abilities.

Society has always treated its physically handicapped members as a strange species altogether. Often they are regarded as inferior not only with respect to their specific physical limitations, but also as 'total beings'. The physically handicapped are, therefore, most difficult to resettle. Victims of disease, deformity or accident, they have been further victimized by the peculiar and irrational prejudice that society has always displayed towards its physically inferior.

## Historical Perspective

From a historical perspective, there are four distinct stages of social attitudes towards the physically handicapped: (1) Exposure and destruction; (2) Care and protection; (3) Training and education; and (4) Social absorption.

### *(1) Exposure and Destruction*

In the prehistoric days, the elimination of the handicapped was achieved by Nature herself, through the operation of the law of 'survival of the fittest'. Most of the primitive tribes would discard their disabled fellow beings on the grounds of physical unfitness to fight the foes and the wild animals. Deformed children were killed outright with out any objection from the tribal chiefs. The Eskimos and the Dene tribes of North America are accustomed to kill their old and disabled fellow-beings because they are unfit to struggle hard for existence. The Masai, Dieri, the Carib and many tribes of Australia and Hawaii and quite a few of the Negro tribes of Africa, have also been following the same inhuman practice of abandoning the maimed and the crippled. Other tribes like the Navajo and Macri treat them jocularly and nickname them. But then there are some primitive tribes which have shown clemency and softness of heart to their physically handicapped members. "Among Blackfoot Indians, infanticide, even in the case of marked deformity, is unknown and the ill or otherwise afflicted are always cared for by their family, even if sacrifice of the best interests of the rest of the family is necessary." <sup>3</sup>

"The Andamanese and the Bushman of Africa also exhibit a marked consideration for the disabled. Among the Andamanese, members of the group who are disabled in any way are generally better provided for than the normal members of the group." <sup>4</sup> Even the Mongols, who were noted for their cruelty made some provision for the disabled. Marco Polo in the account of his travels through the

Mongol Empire of Kublai Khan mentions that in the city of Kin-Sai there were watchmen patrolling the streets who, if "they notice any person who from lameness or other infirmity is unable to work, they place him in one of the hospitals, of which there are several in every part of the city, founded by the ancient kings, and liberally endowed. When cured he is obliged to work at some trade." <sup>5</sup>

The Todas of India practise female infanticide but they consider it a sin to lay hands on the weakling and the deformed.

"The unwritten law of primitive society that the disabled were to be sacrificed to the good of the group was carried over into the written law of the ancients and determined the course of the treatment of the disabled persons for many centuries." <sup>6</sup>

"According to Daniel, the Babylonians did not admit any person with physical blemishes to the Court." <sup>7</sup> "The Hebrews did not permit a crippled or deformed Levite or priest to officiate in the Temple (because of the fear and dread of the inexplicable). But the attitude towards the cripple as a member of society was one of consideration. This is shown in the Laws of Moses which note that a cripple was not to be destroyed. Crippled priests were given their share of the Holy things." <sup>8</sup>

Early Greeks destroyed crippled members because of their ideal of bodily perfection. The Athenians allowed their crippled children to die of cold and neglect, while the Spartans took theirs to the hilltops and killed them <sup>9</sup>. In Thebes, such offences were punished by death. <sup>10</sup>

Among the early Romans, the father had the right to destroy a deformed child if he first exhibited it to five neighbours and obtained their consent. The attitude of Roman Society toward the cripple even found expression in the form of Law, for, the Twelve Tables, which were promulgated in 541-540 B.C. extended the authority of the father so that he, individually, could destroy a crippled child immediately after its birth. <sup>11</sup> "Trade in slave dwarfs and maimed beggars became extensive among Romans. It was very profitable and the merchants even took entirely normal children and deformed them by binding them in artificial bandages to stunt their growth, or mutilated them, so that they might gain money as beggars for their masters." <sup>12</sup>

Strangely enough, although the Spartans destroyed deformed children, they gave all possible protection to their war-disabled. From

Aristotle's account of the State of the Athenians it is evident that during the golden age of Pericles, i.e. in the 5th century B.C., financial support and work were given to the war-disabled as well as the handicapped civilians by the governing board of Athens. Even great thinkers like Plato and Aristotle, gave their theoretical consent to the gruesome practice of disposal of the disabled. In Plato's ideal State, there was no room for the physically unfit. For, Plato says in his Republic, "Surely then, to him, who has an eye to see, there can be no fairer spectacle than that of a man who combines the possession of moral beauty in his soul with outward beauty of form... No, not if there be any defect in the soul, but if it is only bodily blemish, he may so bear with it as to be willing to regard it with complacency."<sup>13</sup> This means that according to him the body and the soul are considered to be two aspects of a single whole, so that a defect in the one indicates or involves a defect in the other. Likewise, Aristotle declared: "Nothing imperfect or maimed shall be brought up."<sup>14</sup>

## *(2) Care and Protection*

With the spread of Christian ideals in the West and Buddhist doctrines in the East, these outrageous practices were gradually abandoned. But still the physically handicapped were boycotted socially. The twelve defect given in the Bible that disqualify a priest from officiating were: "A blind man, or a lame, or he that hath a flat nose, or anything superfluous, or a man that is broken-handed, or crookbacked, or a dwarf, or hath a blemish in his eye or be scurvy, or scabbed or hath his bones broken." The destruction of human life was considered sinful according to the fundamental principle of non-violence. Both these religions emphasized the need of protecting all types and classes of under privileged groups, including the physically handicapped. One of the most unequivocal teachings of Jesus Christ was that one should have compassion and mercy towards the deprived, the needy and the poor. The Christian community, in general, and the Church officials in particular, became interested in the custody and care of the mentally, visually and the physically handicapped.

There was emphasis on the brotherhood of man and on the responsibility of the strong to protect the weak. St. Jerome urged: "One should be eye to the blind, arms to the weak and feet to the lame." Many hospital fraternities were set up to give shelter, food and clothing to the physically handicapped. The most prominent of these brotherhood institutions was founded by St. Basil in 369 A.D. at

Caesaria, Cappadocea. With the decline in the power of the Church, the care and protection of the poor and infirm were transferred to the State and local authorities.

During the middle ages, a cripple was mocked at in the streets, treated harshly and driven to jugglery, begging or crime. Crippledom was linked in men's mind with malignity, divine punishments and superstitious fears. Parents often refused treatment of a crippled child on the ground that it is contrary to the will of God. The Christian culture prevented the killing of the crippled; but it failed to save them from social boycott. The disabled court jester and the beggar capitalized on their disability and were the focus of private and public attention in mediaeval society. "Among the beggars, jugglers, dancers, the leaders of the trained animals, the players of the flute and bagpipes, the thieves, quacks and mountebanks, who thronged the roads and highways of many ages, who filled the fair grounds and roamed the country, many were hunchbacked, lame, twisted of limb and horrible to look at. We remember the dwarfs and monsters who belonged to the regular retinue of princes and noblemen, immortalized by the paintings of Velasquez and Riberra which enable us today to identify infantile spastic paresis, cretinism and achondroplasia underneath the lace, the feathers and the finery and at the other end of the scale, we think of Breughel's terribly dramatic painting in which a row of miserable, blind beggars are tied together by their common fate and crawl through an unfeeling world." <sup>15</sup>

Even reformers and thinkers, like Martin Luther, held the physically handicapped in contempt and justified their removal from society by death as 'an act well-pleasing to God.'

"Between the time of promulgation of Twelve Tables in Rome and the eleventh century, only one instance of public provision for the crippled has been traced. This was in 590 A.D. when Pope Gregory included the crippled in his classification of the infirm and the destitute, to be supported from public funds." <sup>16</sup>

The first attempts to alleviate the misfortunes of the physically handicapped came from charitable societies of a religious nature. It was not until the sixteenth century that any legislative provision was made for the disabled. The 22nd Statute of Henry VIII, which dealt with the punishment of beggars and vagabonds in England, allowed the impotent to beg in the place of their birth. There was, however,

no provision for maintaining them until the passing of Statute 27th, in 1535-36, which made it incumbent upon the authorities concerned to give succour and relief by way of voluntary charitable alms so that they might not be compelled to beg in the streets. In 1569, by another Statute, the aged impotent, sick, lame or blind were to be taken to St. Bartholomew's or St. Thomas' Hospitals. In England, specific Poor Relief Acts were passed in 1573 and 1601 authorizing the imposition of a rate for the purpose of supporting those who were incapacitated for work.

Some attempts were also made in the ancient and mediaeval times to cure various disabilities, but the methods of treatment were quite primitive and indigenous. Mere care and protection, however, were not enough. The stages of 'cutting off' and 'casting out' came to an end in Western civilization with the Era of Renaissance, which brought in its wake a great intellectual, social and spiritual awakening. Besides, the organization of society itself rendered it impossible to have large numbers of its handicapped members loitering about. As a result, institutions for the poor and the destitute were founded to include the physically, mentally, visually, handicapped. The exploitation of crippled children as mendicants, moved St. Vincent de Paul to establish, in 1634, the first haven of refuge for them.

### *(3) Training and Education*

Thus, a third phase in the history of social attitudes was ushered in. This phase characterized 'training and education' of the physically handicapped. With the advent of the eighteenth century, the ideas of liberty, equality and fraternity gained currency and the rights of the individual superceded the collective interest of the State or Society. This individualism could not but change for the better the conditions of the physically handicapped. Some of the eminent thinkers and educators turned their attention to the miserable lot of the handicapped and pleaded for a better deal for them. Consequently, a number of institutions for the blind, the deaf and mute, for the severely crippled, and for mental defectives sprang up. Crusaders of this mission of mercy were found amongst the priests, the physicians and the psychologists.

The first institution for crippled children was founded by Jean Andre Verrel at Orbe, Switzerland, in 1780. In 1832, the first home which combined care and education was founded in Munich, Germany,

for the exclusive benefit of crippled children. In 1851, the first institution for them was established in England, followed by one in France in 1853, the United States of America in 1863, Italy in 1874, Denmark in 1877, Sweden in 1879, Finland in 1880 and Norway in 1892. But throughout, the physically disabled were still regarded as objects of pity, as can be seen from contemporary literature.

Simultaneously, medical science also made great strides in the treatment of crippling diseases. It was realized that prevention and early care would relieve society of the burden of supporting the physically handicapped person throughout his life. In 1780, an English orthopaedic surgeon wrote: "With the heritage of the ages, it is wise to begin in their education with their treatment, it is wise to begin to build before the mind becomes warped. They have been shunned and restricted in their imprisonment and isolation. Their faults can only be removed by moral and intellectual training."<sup>17</sup>

In 1900, Dame Agnes Hunt, herself a cripple since the age of ten, started the first convalescent home for cripples at Bas-church in England, later to become the Robert Jones and Agnes Hunt Orthopaedic Hospital. She also established the first 'After Care Clinic' in 1907. Similar developments took place in other countries of the West. With the gradual progress of orthopaedic science, the social attitudes towards the physically handicapped softened.

#### *(4) Social Absorption*

Towards the end of the nineteenth century, vocational problems of the handicapped started to attract the attention of the public. In limited measures, some efforts were made to solve them. Before the beginning of the twentieth century, a number of Acts were promulgated in some of the progressive countries of the world, safeguarding the interests of the disabled workers. Several other factors, operating side by side, crystallized public opinion to the basic needs of the disabled. They were: growth in the size of the problem, development of an industrial society, spread of universal compulsory education, and rise of the democratic institutions.

Pioneering efforts to find a constructive solution to the problem of the physically handicapped were made by individuals with profound zeal and foresight. In 1917, a young industrialist of U.S.A., Jeremiah

Milbank, started the Red Cross Institution for Disabled Men, which, in due course, came to be known as the New York Institute for the Crippled and Disabled. He thus paved the way for the vocational rehabilitation of the disabled. In England Robert Jones, in Germany Dr. C. Biasalski and in Vienna H.S. Spitzky - all of them doctors working with the physically handicapped, were the pioneers of rehabilitation in their countries in the nineteen twenties.

Finally, World War I gave a new meaning to the term 'rehabilitation'. Prior to it, the activities for the welfare of the physically handicapped were concerned only with their day-to-day requirements of food, clothing and shelter. Thereafter, a distinctive trend evolved in modern society endeavouring to integrate the handicapped in its fold. After World War II, rehabilitation gained currency in many countries of the West as well as of the East. The war production records of the disabled and the intensive publicity drive to enlighten people in general and employers in particular, on their abilities and disabilities have done much to soften public attitude towards the handicapped. Their inclusion in the United Nations social welfare programme has undoubtedly given them recognition for a desirable place in society.

Thus, the attitude of society has been changing in course of time. The greatest change has been from marked fear and hatred to general sympathy and tolerance. Even the unchanging East is gradually changing its attitude towards the disabled. "In the Orient, lack of scientific knowledge and traditional revulsion for physical deviants is giving place to western science and modern attitude toward the physically deformed. In Japan, where this traditional revulsion had reached height unknown in the western world, there are now societies of and for the handicapped. With large numbers of students in western universities, and through the establishment of proper facilities, scientific rehabilitation is becoming an actuality. India, the home of uncounted millions of sick and disabled, now has her rehabilitation centers and physical therapists. Israel, which will accept immigrants regardless of their physical condition, is organizing an excellent programme of medical and rehabilitative care for its expanding populace. Siam has a programme for educating its blind; Iran has formed one of its own. These developments not only mean more and better care for millions of handicapped persons, but, taken together reflect the international ideal of service, which is the hope of a peace-seeking world."<sup>18</sup>

## History of Social Attitudes towards the Handicapped in India

It has been a part of India's cultural heritage to help the poor and the needy even at a great personal sacrifice. In keeping with this tradition, every possible protection was given to the physically handicapped by society.

In India we do not find any tangible instances of the inhuman practice of exposure and destruction, which characterized the primitive attitude towards the disabled. A foreign writer has stated that "In ancient India the physically deformed children were cast into the Ganges."<sup>19</sup> Nowhere in the recorded history of India do we find any evidence to prove that this was a general practice. On the contrary, a reference to Mahabharata shows that the handicapped were then treated with sympathy. For, Narada interrogates Yuddhisthira: "Do you treat as father, your subjects who are afflicted with blindness, dumbness, lameness, deformity, friendlessness and those who have renounced the world?"<sup>20</sup> The kings were expected to provide for the war-disabled and their dependents, for, Narada again puts a question to the eldest of the five Pandavas: "Do you maintain the women of those who died for you or who have come to a sad plight while fighting for you on the battlefield? And do you also maintain those who are wounded on the battlefield while fighting for you?"<sup>21</sup> Likewise, laws of Baudhayana enjoined: "Granting food, clothing and shelter, they (Kings) shall support those who are incapable of transacting legal business, viz., the blind, idiots, those immersed in vice, the incurably diseased, those who neglect their duties and occupations, and so on."<sup>22</sup>

The eminence of Ashtavakra (literally meaning a man with eight physical deformities) who was first jeered at by the Pandits at the court of King Janaka, because of the crookedness of his body, but whose learning ultimately drew their plaudits, the status of Manthara as the favourite maid-servant of the royal queen, though hunchbacked, and the acclamation of Vamana, a dwarf, as an incarnation of God Vishnu, unmistakably show that even in early times the Hindu society did not hesitate to recognize the individual merits of handicapped people. In India, the attitude towards the crippled never reached that height of cruelty that demanded their ruthless destruction.

Religion stressed the values of charity, philanthropy and mutual help. The giving of alms, and the feeding and care of the destitutes

and the disabled were considered acts of religious merit as well as of spiritual redemption. The Hindu society, as it existed in those days, was virtually based on a joint family system, which, among other things, ensured the provision of food and shelter to the helpless and the homeless.

One of the daily duties of the householder that Manu lays down is: "Let him gently place on the ground (some food) for dogs, out-castes, chandalas (svapak), those afflicted with diseases that are punishments of former sins, crows and insects."....."Without hesitation he may give food, even before his guests, to the following persons, viz. to newly married women, to infants, to the sick and to pregnant women." <sup>23</sup>

These rules show the amount of consideration shown to the afflicted by way of protection and care. While laying down the duties of the King, Manu says:

"The King should always give gifts and do other kinds of charities to a learned Brahmin, to one who is affected by disease or affliction, to one who is young (an orphan), to him who is very old and also to him who is born in a noble family." <sup>24</sup>

Manu further recommends:

"A blind man, an idiot, (a cripple) who moves with the help of a board, a man full seventy years old, and he who confers benefits on Shrotriyas, shall not be compelled by any (King) to pay a tax." <sup>25</sup>

Nevertheless, Manu does not show any inclination to give the physically handicapped an equal status in society, as is evinced from the following excerpts:

"Let him (householder) wed a female free from bodily defects, who has an agreeable name, the (graceful) gait of a hamsa (swan) or an elephant, a moderate (quantity of) hair on the body and on the head, small teeth and soft limbs." <sup>26</sup> "Let him (householder) not entertain at a Shraddha (anniversary of the dead) he who does not follow the rule of conduct, a man destitute of energy like (a) eunuch, one who constantly asks (for favours) he who lives by agriculture, a club-footed man, and he who is censured by virtuous men.".... "If a lame man, a one-eyed man, one deficient in a limb, or one with a redundant limb, be ever the servant of the performer (of the Shraddha), he also must be removed from that place (where the Shraddha is held)." <sup>27</sup> To the

King, Manu prescribes: "At the time of consultation, let him (the king) cause to be removed idiots, the dumb, the blind and the deaf, animals, very aged men, women, barbarians, the sick and those deficient in limbs. Such despicable (persons) likewise animals, particularly women betray secret council."<sup>28</sup> In his Civil and Criminal Codes, Manu lays down:

"He should not make witnesses the following: Nor one wholly dependent, nor one of bad fame, nor a Dasya (slave), nor one who follows forbidden occupations, nor an aged (man), nor an infant, nor one (man alone), nor a man of the lowest castes, nor one deficient in organs of sense."<sup>29</sup>

"With whatever limb a man of low caste does hurt to (a man of the three) highest (castes), even that limb shall be cut off, that is the teaching of Manu." "He who raises his hands or a stick, shall have his hands cut off; he who in an anger kicks with his foot, shall have his foot cut off."<sup>30</sup>

"With whatever limb a thief in any way commits (an offence) against men, even of that (the king) shall deprive him in order to prevent (a repetition of the crime)."<sup>31</sup>

About inheritance Manu says:

"Eunuchs and outcastes, person born blind or deaf, the insane, idiots and the dumb, as well as those deficient in any organ (of action or sensation) receive no share."<sup>32</sup>

The handicapped, the aged, women and persons of low caste or low occupation are put on a par by Manu for socio-legal and socio-religious rights. This indicates that although the handicapped were treated with pity and compassion in ancient India, their rights to social equality were never recognized. This is natural because it was thought that a disability was the result of one's wrong actions whether in this life or the life before.

"Some wicked men suffer a change of their (natural) appearance in consequence of crimes committed in this life, and some in consequence of those committed in a former (existence)." "Thus in consequence of a remnant of (the guilt of former) crimes, are born idiots, dumb, blind, deaf and deformed men, who are all despised by the virtuous."<sup>33</sup>

Satatapa asserts that men guilty of grave sins that have not undergone prayaschitta are, after undergoing the torments of Hell, born with bodies marked with certain condemned signs. One guilty of grave sins bears such signs for 7 births, one guilty of upapataka for 5 births and one guilty of papa for 3 births.<sup>34</sup>

Even medical workers like Charaka Samhita held the belief that diseases were the consequences of actions done in past lives.<sup>35</sup>

In ancient India, when the state and the joint family, and to a certain extent, the caste, took care of the individuals who needed shelter and protection against the rigours of life, the physically handicapped did not present a problem. In the compact rural community, the headman was entrusted with the task of looking after the welfare of its distressed and disabled members.

The theory of Karma was instrumental in depriving the disabled of their inherent right to lead an independent life. It was believed that the disabled were reaping what they had sowed in lives bygone and any attempt to ameliorate their lot would, therefore, interfere with this divine justice.

During the period intervening Smritis and the Guptas the social attitude towards the handicapped became more tolerant due to Buddhist influence. Buddhism emphasized the virtues of mercy, charity, truth, purity, kindness, goodness and above all, non-violence. The followers of the Great Buddha practised the preaching of their Master and showed great compassion and regard for the decrepit, the maimed and the disabled. At the same time, somewhere in the middle of the sixth century B.C., another faith, Jainism, was born. Jainism also followed the same fundamental doctrines of non-violence and selfless service to all living beings, including the physically handicapped.

Vocational rehabilitation presupposes a more humane approach to the handicapped. This foundation was already supplied by Buddhism and Jainism.

The Golden Age of the Mauryas, especially during the reign of Chandragupta, stands out unique in establishing workshops for the vocational rehabilitation of the physically handicapped as well as other socially and economically handicapped members of the kingdom. Kautilya lays down: "The king shall provide the orphans, the aged, the infirm, the afflicted and the helpless with maintenance".<sup>36</sup>

Regarding their employment he states: "Those women who do not stir out of their houses, those whose husbands are gone abroad and those who are cripple or girls may, when obliged to work for subsistence, be provided with work (spinning out threads) in due courtesy through the medium of maid-servants of the weaving establishments". "Widows, Cripple women, girls, mendicant or ascetic women, women compelled to work in default of paying fines, mothers of prostitutes, old women servants of the King, and prostitutes who have ceased to attend temples on service, shall be employed to cut wool, fibre, cotton, panicle, hemp and flax." <sup>37</sup>

Kautilya, one of the greatest politicians of his times, made it a special point to employ dwarfs, the hunchbacked and otherwise deformed people as political spies as well as secret agents in the royal palaces.<sup>38</sup>

After Chandragupta, during the reign of his grandson, Ashoka, philanthropic work on behalf of the decrepit and the down-trodden expanded greatly. A staunch believer in Buddhism, he took special measures to provide medical relief. "Everywhere the King Priyadarsi, beloved of the Gods, has provided medicines of two sorts, medicines for men and medicines for animals. Wherever plants useful for either men or for animals were wanting, they have been imported and planted."<sup>39</sup> Ashoka erected hospitals on all the highways throughout India, stationed physicians there and provided food, drink and medicines. During the reign of Ashoka, charitable institutions for the care of the handicapped were established. Gopas, a type of social workers, kept records of castes, gotra, births, deaths and marriages and looked after people in health and illness. The coins of the days of Samudra Gupta have a figure of a dwarf near the king. He seems to have occupied an exalted position in the kingdom.

We get another insight into the social history of ancient India through the writings of Fa Hien, who came to India from China in 400 A.D. He writes: "The nobles and householders of this country have founded hospitals within the city (Pataliputra) to which the poor of all countries, the destitute, cripple and the diseased may repair. They receive every kind of requisite help gratuitously. Physicians inspect their diseases, and according to their cases order them food and drink, medicine or decoctions, everything in fact that may contribute to their case. When cured, they depart at their convenience."<sup>40</sup>

Once in a year, King Harsha used to give away everything to the learned, the needy and the afflicted. He also employed deformed persons as spies and in his harem.

In medieval India, the Muslim rulers followed the example of their Hindu predecessors in looking after the needs of the aged and the infirm, the destitute and the crippled. One of the Five Rukans (duties) of Islam, Zakat (charity), was strictly adhered to by the Muslim rulers. The forms that this charity took were: alms to the poor and the infirm, construction of mosques, rest-houses, erection of ponds, hospitals and orphanages. The Mughuls had a special department with a head (Sadr) to supervise charities and endowments. During the reign of Emperor Akbar, the benefits of such charitable institutions were extended to include even non-Muslims. During medieval period, local Rajput chieftains looked after all their distressed subjects.

The inroads of Western civilization in the eighteenth century gave a death-blow to many of the old institutions. "The old order changed. The social institutions and the individuals lagged behind. The safeguards which were there in the old order ceased to be effective. The new ways of life made unknown and heavy demands on individuals. Both these situations gave rise to a series of complicated problems. The dumb, the deaf, the blind, the physically and mentally handicapped and the mentally ill, who were formerly cared for in the family were being exposed to new dangers. The state did very little directly for children. Thus, before the state effort had become sizeable and effective the family was incapacitated to take care of the problematic persons. This led to destitution, beggary, delinquency, crime and immoral traffic to a considerable degree. The crumbling of the old order, absence of new healthy substitutes, and confusion in transition made the situation extremely complicated."<sup>41</sup>

Sporadic efforts to set up hospitals and charitable homes for destitutes were made in our country by individual philanthropists. A good deal of spade-work in this field was done by Christian missionaries. By the end of the nineteenth century, schools for the deaf and the blind were founded, but none for the crippled. The problems of the crippled remained unsolved until after World War II, when the attention of the government and the public was drawn to the necessity of establishing centres for the rehabilitation and resettlement of the disabled veterans of war. Only after Independence, did the problem of the civilian handicapped come into the limelight. As a

result, several voluntary government-subsidized welfare organizations have sprung up during the last forty years.

Still much remains to be done to harmonize the attitude of the society towards its physically handicapped members. The common man of India still believes in the antiquated ideas of fatalism. The common woman still attributes the birth of a congenital cripple to some superstitious cause such as the evil influence of the lunar eclipse, or the charm of a witch or the non-observance of certain customary practices during pregnancy. Sympathy and understanding are confined only to those people who are closely associated with the welfare of the physically handicapped. Pity and avoidance are the most widely prevalent attitudes. These attitudes can well be demonstrated by the fact that people are always prepared to part with a coin to get rid of a pestering handicapped beggar, but are never prepared to probe into the causes which forced the unfortunate man to beg in the streets. They are under the impression that by putting a few coins into the begging bowl, they not only come to the rescue of a sinner of the past life, but also unconditionally reserve a seat for themselves in the heaven above. This popular philosophy of charity is misconceived. It is not helping the needy but helping oneself. In spite of repeated appeals from social workers and government officials, people have not given up the wrong mode of alms giving.

This 'beggar producing' philanthropy must be changed into something constructive and desirable, socially as well as economically. We need to think of the crippled child or adult, not as an object, whether of pity or charity, not as a claimant, asking for alms or financial assistance, but essentially as one of us, who has the equal right to live and move with us fearlessly, and with a sense of human dignity and pride; one who does not merely want to exist as a lump of flesh, but one who has a heart within, which throbs to come out of a segregated and isolated social fabric, not only for his own sake but for the sake of others who are dear and near to him. He must not be left alone to ponder over the misdeeds of past life which condemned him to the present life of woes and worries, but must be given a chance to prove his worth as a human being. The problem is no longer confined to mere maintenance by the joint family or the caste council. It has become a national problem demanding rehabilitation from a welfare state. If our social philosophy is not channelized properly so as to absorb the physically handicapped in gainful employment, our already subsistence economy would be heavily burdened and our

already large armies of beggars would multiply. The physically handicapped are different in some ways, but by no means in all ways, from us. By denying them their rights we are negating the basis of a welfare state.<sup>42</sup>

## **Factors Influencing Social Attitude towards the Physically Handicapped**

“Man is a rational animal,” said Socrates. But, unfortunately in his behaviour towards the handicapped, he has proved himself to be rather “irrational”. No two persons feel alike for any particular person, whether he is disabled or non-disabled. There are many factors that influence and determine the inter-personal relationship between the able-bodied and the disabled.

One of the most significant factors is the extent and nature of crippling. A common man’s reactions to gross physical deformities, like cerebral palsy, the victim of which presents a ghastly appearance, with constant jerky movements of the limbs, incoherent speech and saliva dripping down the mouth, are at once indicative of repulsion, apprehension and avoidance. In contrast, a leg amputee, wearing an artificial limb, may not cause such an embarrassment to the onlooker, for, his deformity is not visible to the eye.

Another factor that influences one’s attitude, is the relationship to the person concerned. The attitudes towards the crippled member of one’s own family or a friend or a neighbour vary and are different from those towards a stranger.

The cause of crippling is also a governing factor. A soldier, who is disabled in action against the enemy is hailed as a hero, while another man who loses a limb as the result of a traffic accident, may remain unknown and unheralded all his life. In both these cases, however, it is the man who suffers, irrespective of whether the cause of his suffering is laudable or not.

The age of the crippled individual is yet another factor to be considered. A crippled child is naturally shown more lenient attitude than a disabled adult. Technical knowledge about the physical, psychological and social problems of the physically handicapped also affects one’s attitude and behaviour considerably.

By its very definition, ‘an attitude’ implies a changing emotional state of mind. It must be remembered that attitudes are expressed

not only by word or mouth, but more explicitly by facial expression and behaviour. The immediate reaction towards the crippled individual, whose physical defect is obvious, is that he is a different man, who lacks something which others normally have.

## **Some of the Common Attitudes**

(1) **Curiosity is the most common reaction:** Frequently one becomes so curious that he puts questions to the crippled individual as to how he acquired his disability and how far it affects his life. Some persons do not confine curiosity to themselves, but also call the attention of their fellow brethren to the physically handicapped as if to share their guilt in looking at something forbidden.

(2) **Pity is also a widely prevalent attitude:** It is felt when the seriousness of the problem in question is recognized but there is no understanding of the condition. Pity towards the physically handicapped implies that the person who feels pity recognizes the sorry state of affairs, but it also implies that one who does pitying considers the object of pity less fortunate or less able than oneself. Pity is a somewhat positive attitude, but it is bad firstly, because it makes its object feel inferior and secondly, because it does not result in any constructive effort to ameliorate the situation.

(3) **Over-solicitousness:** This attitude is generally towards the handicapped member of the family. In most cases, it is compensatory, denoting a strong effort to deny an unconscious rejection of the crippled member. Such a behaviour disguises unconscious feelings of non-acceptance-feelings which the individual is not ready to accept consciously.

(4) **Mild dislike or embarrassment:** Many people feel uncomfortable in the presence of a physically handicapped individual and cannot find a topic on which they can talk with such persons. This is a mild form of rejection.

(5) **Repugnance:** A feeling of running away from the person with a severe crippling deformity is more common than is admitted.

(6) **Indifference:** Most of us are in the habit of being indifferent about what happens to our fellow beings unless it happens to us or to our own people. Indifference is another widely prevalent attitude.

(7) **Fear:** Most of the physically handicapped people are feared by the common man. He tries to avoid a handicapped person because of the fear that by associating with him, he may himself acquire the defect. Physical handicap is often identified with the disease that may have caused crippling and people are panicky about catching the infection. The more severe and visible the deformity, the greater is the fear of contagion. Another cause of fear is traceable to the ignorance about the primary cause of crippling.

(8) **Sympathy:** It literally means "feeling with". The difference between pity and sympathy is that whereas in pity the object of the attitude is considered to be inferior by the subject, in sympathy the object is considered to be a fellow human being who is equal in status with the subject. Pity does not result in any constructive help. At the most, it results in charity of the type that is given to the beggar. It does not tend to perpetuate or to restore the sense of independence to the physically handicapped. Sympathy, on the other hand, is actuated by a desire to help constructively and without any obligation whatever, so that the handicapped individual may be able to attain independence. Sympathy is, however, a rare attitude and is based on a complete understanding and knowledge of the affairs of the individual concerned.

In his analysis of social attitude towards the disabled, Hanman describes even 'sympathy' as a 'compensatory behaviour'. He says: "Rather than being shocked by a disability, it is easier on us if we are sympathetic and tolerant. Besides, when we are sympathetic, other people often look upon us as kindly persons, and this makes us feel good, too. Sympathy also allows us to overcome some of our feelings of guilt for looking askance at the disabled. By being sympathetic we can please both ourselves and others more. Our little tricks pay dividends. If we are deeply honest with ourselves we can realize that our sympathy is but a pleasant compensation for more complex feelings of fear and revulsion."<sup>43</sup> But this is not always so. Sympathy is of two types, spontaneous and ethically dictated; and what he says is true of the 'ought' inspired sympathy.

Acceptance and rejection, sympathy and pity, trust and fear, valuation and devaluation—these are the conflicting reactions to the physically handicapped. The right type of social attitude is difficult to find. In most of the cases, there is either avoidance or ignorance or exaggerated concern for the physically handicapped. It is very difficult for an ordinary human being to strike the golden mean. A survey of

the various types of reactions to the physically handicapped is interesting; but its value lies in seeking an understanding of the factors that produce these reactions, so many of which are detrimental to the handicapped person. In turn, this understanding of the causes should enable us to find out ways and means of improving harmful attitudes.

## Sources of Social Attitudes

Two explanations are generally given for these social attitudes: one is relatively superficial and simple; the other is somewhat complex, but very important. The superficial explanation is that all human beings believe that the body and the 'person' are one and the same. For the common man, the visible appearance assumes a major role, not the invisible personality. A person's conception of his own body has a great deal to do with his conception of his own personality and of his relations with other people. Naturally, therefore, when he sees a crippled individual, his body-image about that person becomes distorted. This is the origin of the attitude of rejection. A greater recognition of the personality problems of the physically handicapped individual would lead to a better understanding and a wholesome attitude towards him. The attitudes towards disability are highly subjective and vague. "They are difficult to describe. Worse still, they are even more difficult for one to admit honestly, and harder yet for one to change." <sup>44</sup>

Since attitudes form part of the mental structure, to understand them one must know the way in which the mind functions. A major portion of the mind falls below conscious level and, therefore, beyond conscious control. Technically, it is called the unconscious. Dynamic psychological forces that arise from the unconscious actuate human behaviour.

The central part of a man's personality is formed by the ego. For the development of a balanced personality, an individual must have a balance between the positive instinct of self-assertion and its opposite that is, of self-surrender. The instinct of aggression or self-assertion is expressed in hatred and destructiveness. In a normal individual, it fuses with and is neutralized by another drive to express love. In order to maintain his self-esteem a normal person stresses physical perfection. Anything unfamiliar or abnormal does not fit with his expectations. It is easier for him to depreciate a physically handicapped person than to revise his own expectation of body image. This is one of the tricks that he employs to satisfy his ego. Dr. Kessler

says: "The driving force of ego-satisfaction requires constant fuel for its fires. Its own storehouse is so bare that it must obtain its fuel vicariously from the superiority it gains through comparison with others. The cripple by his deformity, limited function, or grotesque appearance, provides that satisfaction. This is the basis of the prejudice that forms the foundation of the social attitudes towards the physically handicapped. It is a poison compounded of demonology and ego-need." <sup>45</sup>

Another explanation is advanced by Freud, who believes that every child discovers that when his parents do not want him to play with a particular toy, they take it away from him. His immature psychological development prevents him from recognizing or making a sharp distinction between objects that are parts of his own self and those which are not. He may, therefore, develop a fear that parents may take a part of his body away because of disapproval. This is, according to him, the origin of an irrational fear of the loss of a part.

Man cannot resist the temptation to generalize or to spread. He always tries to judge a situation or a person by one most obvious characteristic. He sees that a person is physically handicapped and he believes what he sees, or rather more than what he sees. The disability that he sees in the physical sphere is immediately spread to other areas - psychological, social and moral. In order to prove that man's negative reaction to the physically handicapped is instinctive, some people even try to relate comparable instances in the animal world showing ostracism of those with a typical physique. But their hypothesis cannot be proved by one or two stray instances.

Ignorance of the primary causes of disability is also responsible for negative social attitudes. The natural cause of a disease is clear, but when it has happened is a question for which no easy answer is possible. Physicians may have established that a disability was either inherited through germ-plasm or acquired through virus infection or trauma. They, however, cannot provide an explanation to the simple question that poses before an ordinary man as to 'why' it should have happened. The common man then tries to tap other sources such as religious scriptures, literature, and folklores to find an answer and readily gets it. In the Holy Bible, he reads that the sins of the parents will be visited upon their children upto the third or even fourth generation. In Manusmriti, he reads that a crippled individual reaps in this life the seeds of misdeeds that he had sown in the former life.

In fiction, he finds that a villain is invariably featured by the wicked, the deformed, or the ugliest. As Dr. Kessler says, "But, perhaps, the greatest disservice has been performed by writers who have created the image of the crippled and deformed as a definite stereotype. From Dickens down to the novelists of the present day modern times, writers have been guilty of creating this false picture, an image which can only be dislodged with difficulty from the mind of the average man." <sup>46</sup>

Various interpretations have been given to physical disability in novels like 'Of Human Bondage' by Somerset Maugham; 'Ethan Frome' by Edith Wharton; 'Dr. Jekyll and Mr. Hyde' by Robert Louis Stevenson; 'Mario and Magician' by T. Mann, 'The Hunchback of Notre Dame' by Victor Hugo and 'The Christmas Carol' by Charles Dickens. The characters depicted by these writers vary from Tiny Tim of Dickens to Quasimodo of Victor Hugo, Mr. Hyde of Stevenson to Philip of Somerset Maugham. On the silver screen as on the stage, the crippled person is more often than not, depicted as the villain as for example, Shakespeare's Richard III. A spastic by birth Richard III, is one of the most heinous, unscrupulous and villainous characters ever created by Shakespeare.

In folk literature one finds several tales that tell about a cripple in terms of mental, moral and spiritual degradation. The deformed are regarded as the seat of evil, the devil incarnate, the product of sin. Disability has been linked with insanity, murder, felony and even rape, in some of the folk-tales.

"That corporal deformity in the mind of the people is in some way associated with the expression of unholy influences is proved by the many tales of fantastic hybrids, mixtures of man and beast, which were regarded as the offspring of woman and the devil. The need to externalize forbidden tendencies in one's self, which need assumes cruder expression as society is more primitive, may well be the root of the attitude towards the malformed. Regarding the body as the visible representation of the mind, malformation is regarded as a secret laid bare and shamelessly exposed, an expression of guilty union, or of forbidden desires, which amongst honest citizens are repressed and held in abhorrence. The more sophisticated society becomes, the more the overt expression of these feelings is hidden, but in dealing with the problems of the handicapped, even today we have to take the existence of these deep-rooted emotions into account." <sup>47</sup>

Harold E. Yuker observes that some people are prejudiced toward the disabled just in the same way that some people are prejudiced towards minority groups such as Jews, Catholics and Negroes. He refers to a study in which one of his students found that people who are prejudiced towards the handicapped also tended to be prejudiced towards Catholics, Jews, and Chinese. Conversely, people accepting the handicapped or disabled tended to be accepting of other groups.

Prejudice always involves a prejudgement. It involves the assumption that one knows something about a person, just because one can classify him and pin a label on him. For instance, if some one knows that a person has cerebral palsy, he thinks he has some information about him; in the same way if he knows that a person is a Negro, he assumes that he has some knowledge about him.

Prejudiced persons lump all the members of the group together and do not treat them as individuals. This is the crux of the problem of attitudes towards the disabled.

The hardest thing for most people is to treat the disabled as individuals. It is wrong to assume that all disabled persons need and expect help in the same way and to the same extent. Some of them will appreciate the help and would want to be helped; others prefer to do things by themselves. It is just a matter of individual differences.

There are also people who are positively biased towards the disabled and show themselves kind and friendly towards them.

We have to look for the difference between being friendly toward disabled people, liking them, accepting them, and so forth, on the one hand, and, on the other hand, treating them as individuals. This is the crucial point. We should consider the disabled people for what they are and accept them for what they can do with all their limitations.

Looked at from this point of view, we have not come as far as we should have. We have made a great deal of progress in starting services and getting jobs for disabled people, in getting acceptance for the disabled as a group. But as far as the attitude of accepting each one as an individual is concerned, we still have an awfully long way to go. This is what we have to aim at and strive for; it will not be as easy as we think because prejudice toward the disabled is usually not acknowledged. 'No one wants to think that he is prejudiced

toward the disabled or that he lumps them all together, and yet this happens all the time'. Therefore, the first step in overcoming prejudiced attitudes is to get the person realize that he does think of the disabled as a group and not as individuals.

Perhaps the best way of eliminating prejudice of any kind is through inter-personal contact between people who are equals. The only way we can get people to stop treating the disabled as a group is to let them meet disabled people and get to know them. Once we have had close contact with a disabled person, we can't help but evaluate him as a person and not as group member. And, it is here that the hope lies for the future. As disabled people get around more, as they get jobs, as they have greater social contacts, as all these things occur, attitudes toward the disabled will tend to move away from the attitudes of prejudice to more realistic non-prejudiced attitude.<sup>48</sup>

### **Attitude of the family**

The physically handicapped individual is not so much concerned about the attitude of the people at large as about the attitudes of those that are intimately associated with him—his family, friends, neighbours, employers and co-workers. The attitude of the family is very important. Acceptance of the crippled child, both in the physical and mental sense, goes a long way towards the adjustment of his problems. The most usual parental response is that of over-indulgence. On the other hand, expressions of rejection are not uncommon. This leads to emotional maladjustment. "Frequently the attitudes and maladjustments that result are due not so much to any direct effect of disability as to the attitude assumed towards the under-privileged one by the parents, teachers, siblings or playmates. This is true whether the treatment takes the form of coddling and overprotection or of disparagement, ridicule, or application of jocular or sarcastic epithets."<sup>49</sup>

A child acquires at home an attitude towards himself and an attitude towards the world. He catches the emotion of his parents very easily. If the parents think that his disability is an overwhelming calamity which makes life worthless, the crippled child will also think likewise; if they are bitter against an unjust fate, he will think so, too; if they make his handicap the pivot of their existence, he will use it with self-centred bids to extract sympathy from others; and if they accept his limitations objectively, he will also think and act likewise.

The basic needs of a child or an adult are love, security, independence and adventure. Very few crippled children are able to satisfy them. Every child wants affection from his parents. He must be assured that he is needed. There are some parents who would pile gifts and toys for their handicapped child, but will not emotionally accept him. There are other parents who will never allow their "poor crippled child" to grow up. They would not let him try his wings and be independent. They would do everything for the child and thus burden themselves with more work and their crippled child with more frustration.

Many childish notions about sexual intercourse and its consequences, as for example, punishment of forbidden desires, are associated with pregnancy. When a crippled child is born, these feelings of guilt and anxiety crop up. The parents who had some disease, who had applied abortive means, or who had performed deeds which they regarded as sins, also suffer from a sense of guilt and shame.

Sometimes the crippled child creates disharmony in the family. "The father has to overcome his feelings of wounded vanity, to conquer an often bitter disappointment and to readjust his ambitions. The mother is left with unsolved emotional stresses. Brothers and sisters will experience the usual sibling rivalry in an unusual acute form, since the normal feelings of animosity towards a newborn brother or sister are partly realized. The equilibrium which exists in the normal family is threatened seriously by this situation. The crippled child is the focus in the family on which from all sides strong emotions clash."<sup>50</sup> Not only their dreams for the future are shattered, but also their feelings of fear and repugnance for the disabled that have been latent, come down with full strength from the unconscious mind. Not only does a crippled child suffer from emotional conflict, but his parents too, are torn between two powerful under-currents of emotions; on one side, there is love, on the other, feelings of guilt, disappointment and fear. "It is extremely difficult for parents to accept a child who is deformed or crippled or who has a disfiguring birth-mark. Parents want a child whom they can cherish and love and it is easy to accept a child who is lovable and admirable."<sup>51</sup>

*Parental reactions generally fall into three categories:*

- (1) Those who refuse to face reality and as such deny the existence of the crippling defect in their child. Such parents belittle the defect as much as possible. They make the same demands on the crippled

child as on the non-disabled children. In a few cases, they try to find out exceptional talents in some direction or the other, although they may not be inherent in the unfortunate child at all.

- (2) Those who acknowledge disability on its surface, but who cannot reconcile themselves with its far-reaching effects. In such cases, the child is physically cared for, even cherished, but in numerous small ways one or other, or both the parents, make it known that he is not really loved for himself. More complicated is the attitude of overcompensation that causes parents to lavish on their disabled child love, care and protection, which obstruct rather than foster the child's development. In a few cases, the disabled child is made the centre of the family. Other children who are normal are made to show excessive consideration towards the disabled child. As a result, jealousies and antagonisms develop. In some cases, however, the parents start blaming each other. In the bargain the poor child suffers, and even faces segregation and isolation, for no fault of his own.
- (3) Those who accept the crippled child as he is. Such parents grant full recognition to the handicap of the child, without any mental reservation, and do what they can to make his life worth living. Such was the attitude of Dr. Carlson's mother who used to reply, when questioned about her son's deformity: "He is just born that way."

Many researches have been made on the attitude of the parents towards their afflicted children.<sup>52</sup>

Roger Barker and others summarize the result of their study of parental attitudes thus: "The evidence is rather clear that the attitudes of parents towards their disabled children tend to be extreme more often than toward normal children, centering about the following patterns: over-solicitude, rejection, pressing for accomplishments beyond the child's abilities, and inconsistent attitudes. Overprotection appears to occur more frequently than over rejection."<sup>53</sup>

Many parents need the help of the social worker to understand the problems of their handicapped children. The prerequisite for a right parental attitude is to have harmonious relationship between the parents themselves. Secondly, they should acquire full knowledge about the causes and treatment of their child's disability so that they may also hasten the process of rehabilitation. The third way is to form

an association with other parents in like predicament. In India, a majority of parents are unalphabetic and ignorant and, as such the problem of the crippled child is not given the attention that it rightly deserves. The larger size of the family and poverty are other factors that have been responsible for the neglect of the disabled child.

In case of married people who are disabled the attitude of the spouse is very important. Here, too, one finds two extremes. There are persons who would reduce their disabled partners to mere parasites by doing everything for them. On the other hand cases where the disabled persons have been neglected or deserted by their spouses are not infrequent. Impotency caused by some crippling diseases raises a special problem in marital relations. Very few persons are able to adjust to the disability of their spouses in a proper way.

### **Methods of changing social attitudes towards the handicapped**

The history of social attitudes has revealed that in spite of the belief about the constancy of attitudes they have been changing from time to time, and can be changed rapidly with the use of modern psychological methods. The degree of the success of rehabilitation depends, in a very large measure, on that intangible, but nevertheless, potent factor known as 'public opinion'. Even governmental efforts need the stimulus of an enlightened and socially conscious public opinion. Three factors are to be considered in changing attitudes: (1) The subject or what is to be conveyed; (2) The target or the groups to whom approach is to be made; (3) The technique or methods which are to be employed to reach these groups.

As regards subject, the public is to be enlightened on the abilities of the disabled and the economic contribution they can make to the country. Negatively, the loss suffered by the disabled individual, his family and the community at large must be pointed out.

The target includes the education of various groups who are intimately connected with the disabled. They are: the physicians, nurses, social workers, psychologists, educators, insurance officials, employers, government officials, legislators and the members of the individual's family.

The methods employed are varied and suited to the particular needs and conditions of the community. For example, in a country like

India, where a majority of people are illiterate, audio-visual methods, such as the exhibition of films and documentaries are more effective than propaganda through the press. Achievements of disabled persons must be advertised extensively, for, they are themselves their 'best salesmen'.

Some of the widely used methods are: profusely illustrated articles, interesting fiction, industrial publications and posters, labour journals and periodicals and scientific bulletins and literature on the problems of the handicapped. Seminars, group study courses, international conferences, and exhibitions for medical and allied professions also assist in creating and disseminating a fund of knowledge. Radio talks, television, cultural programmes, social gatherings, and special movie shows depicting the problems and the marvellous achievements of the handicapped pay ample dividends in the shape of a healthy entertainment as well as an instrument of propaganda. Publicity serves a three fold purpose. It stimulates public interest in the problem, makes the expansion of present services possible and detects disabled persons.<sup>54</sup>

### **Attitudes of the disabled towards the disabled**

Attitudes determine behaviour. People who have positive attitudes towards the disabled will behave in positive ways toward them. They will hire them and attempt to help them. People with negative attitudes toward the disabled will behave negatively toward them, with all the negative consequences thereof.

We often ask the question how the non-disabled feel about the disabled and what their attitudes are. While this is very important, equally important is the question how disabled people feel about other disabled persons and how they feel about themselves.

### *ATDP Measurement*

The Attitude Test of Disabled Persons can be used for two purposes. It can be used to measure the attitude of a disabled person both toward other disabled people and towards himself. It also can be used to measure the attitude of a non-disabled person toward the disabled.<sup>55</sup>

First, let us consider what happens when we measure the attitude of a disabled person towards other disabled people. We have

assumed that when a disabled person talks about other disabled people, he is giving some indication of how he feels about himself. If a disabled person says that disabled persons should go to special schools, by implication he is saying "I should go to a special school." Whereas, if a disabled person says disabled people should be treated just like everybody else, he is saying, in effect, "I want to be treated just like everybody else."

One of the things that we get in our measurement is whether or not disabled people are viewed as different. This is the main thing we are trying to get at: are disabled people perceived as being different?

We assume that if the disabled person perceives himself as different, this implies certain things about him. There exist several studies which bring out rather interesting results. It is found that disabled people who think of themselves and of disabled people in general as similar to other people, tend to be happier and much better adjusted. They were also found to be better workers and to get along more harmoniously with people. On the other hand, individuals who think the disabled are a special class and must always be treated differently tend, on the average, not to do as well in their adjustment.

This fact is very crucial, particularly when we contrast the importance of attitudes with the unimportance of the actual physical disability. Many people think that by just identifying a person as disabled they have sufficient knowledge about him. But if we want to know a disabled person, we should take into account more his attitudes than his disability.

Harold E. Yuker reports a study in which he and his associates compared severely disabled individuals with those who had only minor disabilities. They expected that the ones with minor disabilities would be happier, better adjusted, better workers, and so forth. Contrary to their expectations they noticed no difference. Some severely disabled individuals were much better workers and better adjusted while some with minor disabilities were found quite inadequate.

The important thing was not how disabled they were. When they were separated on the basis of attitudes, those with healthy attitudes were found to be better workers, and better adjusted, and tended to get along better with other people. We can very often discover what a disabled person can do by asking him what he is able

to do and what he thinks he can do, than by looking at him and saying: "He is missing an arm; obviously, he can't do so and so."<sup>56</sup>

Thus, the main point is that attitudes are more important as predictors of a person's behaviour than the disabilities themselves. The reason for this is obvious. The 'disability' seems to tell us what the person cannot do; his attitudes tell us what he can do and what he will do. It emphasizes "can" rather than "cannot". In short, attitudes are crucial in the case of disabled persons as they are for the nondisabled.

### Footnotes

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PART II

**REHABILITATION**

## CHAPTER VIII

# REHABILITATION – CONCEPT AND PROCESS

### Meaning of the Term

Rehabilitation in general means restoration to a former state, capacity, privilege or rank. Applied to the disabled, it refers to the process of preparing the person for a normal place within the community or restoring him as nearly as possible to the position in which he was before the accident or illness which brought about the handicapping condition. According to the definition adopted by the International Labour Conference (June 1955), rehabilitation means “restoring of handicapped persons to the fullest possible physical, mental, social, vocational and economic usefulness of which they are capable.”<sup>1</sup> In other words, it is the restoration of the handicapped person, physically, mentally, socially, and vocationally to the fullest extent compatible with his abilities and disabilities.

Rehabilitation involves the whole range of services from the time of onset of the individual's disability to the point at which he is restored to normal activity or the nearest possible approach to it.

Rehabilitation, then, is the process whereby the handicapped in varying stages of helplessness, emotional disturbance and dependence, come to gain new understanding of themselves and their handicap, new skills necessary for their new state and a new control of their emotions and their environment. It is both a science and an art, calling for breadth of knowledge and experience as well as the ability to give mature love. It requires the ability to give support

and to withdraw it at the right time in the right way; all support must be "support toward independence". The total rehabilitation programme is a delicately woven pattern of skills and attitudes for the benefit of the total person.<sup>2</sup>

The terms 'habilitation' and 'rehabilitation' must be understood in their specific meanings. Habilitation refers to the cultivation of human resources or an affirmation of life processes. Rehabilitation is the restoration or conservation of human resources, which have been diminished, or the reaffirmation of life processes.<sup>3</sup> Thus a person disabled by birth would require habilitation, whereas one who become handicapped later in life needs rehabilitation. In this book the term rehabilitation embodies the democratic and humanitarian ideal that each individual is important, that each person has the right to participate in all aspects of national life, and that each member of the community should contribute to society to the fullest extent to which he is capable.

Rehabilitation is not merely a treatment but a way of life.<sup>4</sup> It is not limited in its scope. It commences with the onset of disability and goes right on through the different phases until the disabled person is once again in the society to which he rightfully belongs.

Rehabilitation if it is to be successful, must be a continuous process, right from the onset of handicap or disease until final resettlement, or till the nearest possible thing to a normal life in the community is achieved.<sup>5</sup>

The process of rehabilitation is composed of three parts: (1) Physical; (2) Socio-psychological; and (3) Vocational. Different experts have assigned different means to these three components. Dr. Harold Balme says: "Rehabilitation when applied to the problem of physical disability...must include methods of prevention, of limitation of disablement, of adaptation of disabled persons to their handicap, and of the necessary assistance by means of protective legislation, social security schemes and technical aids for the disabled". According to Dr. Howard Rusk, rehabilitation consists of three phases - prevention, definitive treatment and rehabilitation.<sup>6</sup>

The main aspects of the rehabilitation process namely physical, socio-psychological, and vocational, are so closely related to each other that it is not possible to draw a line of demarcation between any two of them.

## Evolution of the Concept

'Rehabilitation of the handicapped' is relatively a modern concept evolved within the first half of the 20th century. The new concept of 'Rehabilitation' originated in 1907, when Pasteur started a school for vocational training in Belgium, for such pupils as were found too unfit to be admitted to normal training courses.<sup>7</sup> It was only after World War II that the term "rehabilitation" came to be used in connection with the disabled veterans. While some of the experts in the field of social research preferred to call it "re-education", those in the field of physical medicine interpreted it to be the "third phase of medicine." Several factors such as changing attitude of society towards the disabled, application of rationalism in all spheres of human life, the two world wars, progress of medicine, democratic ideals, development of technology, spread of education and changing concept of physical fitness have contributed to the emergence of this new and rejuvenating ideal.

### *Changing Attitudes*

During the period of 'humanism' the work for the handicapped was motivated by sympathy and charity and they were fed and protected in asylums. As time went on, some sensitive minds began to feel that this was not sufficient and the idea that the handicapped people should be made to enjoy the blessings of self-reliance and creative work became prevalent. The handicapped people were taught some conventional handicrafts like cane work, coir work etc., and were kept in special homes for them where their basic needs were satisfied in return for the work they did. This concept of rehabilitation was based on the principles that the handicapped person has a right to live; that he cannot earn his livelihood fully by himself; but he can earn a part of it, which he should be encouraged to do in order that he may not become a total burden to society.<sup>8</sup>

This change of attitude and approach to the problems of the handicapped and their solutions emphasised the potentialities of the handicapped to become useful members of society.

### *Application of Rationalism*

The application of rationalism to all spheres of human life has brought about a radical change in the present social structure. Attitudes,

institutions and mores which were once deep-rooted in society, have since been considerably modified. This dynamic process has remarkably improved the social status of the handicapped. Once branded as a mere burden on society, they are now enjoying a rightful place in many advanced countries of the World.

### *World Wars*

World War I led to a mass disablement in all participant countries. The toll was, without counting the dead, no less than twenty million wounded and crippled persons. The victims of World War II were even more numerous and suffered even more acutely. Millions of men, women and children, both at the front and behind the lines, were either crippled or injured permanently. The number of civilian victims of World War II was considerably more than that of World War I. It was impossible for any nation, however rich to support and sustain such a huge disabled population for an indefinite period, without any return whatsoever from them. The warring nations were, therefore, forced to evolve some sort of a formula to convert these liabilities against their limited resources into productive assets. The exigencies of war demanded that each nation keep as many soldiers at as many frontiers and for as many hours a day as practicable. In order to meet this contingency, the warring nations were often called upon to reduce the days of convalescence of the war casualties to a minimum and to develop the residual functions of these casualties to a maximum. To achieve this end, the new adjuncts of rehabilitation, viz. physiotherapy, occupational therapy and remedial gymnastics were freely used. The experience thus gained during the war period was later of great use and eventually was found to be of supreme significance in the world-wide rehabilitation programme.

### *March of Modern Medical Science*

With the introduction of new health, hygiene and sanitation measures, modern medical science has appreciably increased life expectancy in many countries. All the major killers and crippers of the past have been conquered. This has, however, inadvertently caused a great increase in the incidence of chronic diseases in the aging population, which is inflated day by day by the prolonged lease of life thus acquired. To quote Doctors Piersol and Bortz: "The society which fosters research to save human life cannot escape responsibility for

the life thus extended. It is for science not only to add years to life, but more important, to add life to the years.”<sup>9</sup> In this connection, Dr. Howard Rusk and Eugene Taylor state: Lacking specific measures in the cure of many of the chronic diseases, medicine must look to rehabilitation to teach those afflicted by disability to live and to work as effectively as possible.<sup>10</sup>

### *Development of Machinery & Technology*

The price that we have to pay for our modern civilization is heavy, for its great innovations in machinery and technology have taken a considerable toll of human lives and, more than that, rendered an astoundingly larger number of the population permanently incapacitated. The number of accidents, both industrial and traffic, is daily increasing and is reaching a problematic level.

### *Growth of Democratic Ideals and Institutions*

In a democracy, the state exists essentially for the well-being of its citizens. As such, a modern democratic state provides not only ‘social’ services which are the minimum services offered by the state to the entire community, but also ‘welfare’ services which are offered to individuals and groups in special need. The physically handicapped, therefore, fall within the purview of the ‘welfare’ services and lay a claim on the state for the protection of their fundamental rights.

### *Spread of Universal Education*

In most countries of the world, the spread of compulsory education brought into the open, the problem of many children crippled from the very beginning of their life. It thus attracted the attention of many leading educationists. Because of an early detection of their crippling deformities, these children had a better chance of rehabilitation than the disabled adults, whose condition had reached a stage, where nothing better could be done to rehabilitate them.

### *Changing Concept of Physical Fitness*

Formerly physical fitness was an abstract concept. A man was considered unfit for all work if he was unable to perform a part of it. But gradually physical fitness acquired a relative significance and came to be associated with functional fitness. Today a physical disability is related to a particular job or a particular task.<sup>11</sup>

## **Need for Rehabilitation**

Every citizen is entitled to certain fundamental rights, but the moment he ceases to be a useful and productive member of society, either through his own fault or through circumstances beyond his control, he loses them. While this withdrawal of basic human rights is justifiable in the former case, it is not so in the latter. For instance, an individual, who is incapacitated for work due to disease, accident or congenital deformity should not be relegated to the backwaters of society, but, on the other hand, encouraged and piloted across the troubled channels of a dreary life. The disablement creates a web of problems, medical, social and economic and rehabilitation offers to the disabled individual the unreserved opportunity to lead an independent life to fulfil old desires and new hopes. If no effort is made to rehabilitate the handicapped, the loss of millions of man hours can be well imagined, which no country can afford.

The object of rehabilitating a disabled person remarked one I. L. O. expert, "is to make a tax-payer out of him". In fact it is a question of giving the invalid a chance to become a self-reliant citizen, standing shoulder to shoulder with the able bodied members of the community. The best way for him to earn the respect of his fellowmen is to prove that he is a producer. Similarly, nothing gives him so much selfconfidence as the knowledge that he is a useful member of society, working and paving his way.<sup>12</sup>

## **Integrated Approach**

According to the Expert Committee (1969) of the World Health Organization, rehabilitation "as applied to disability is the combined and co-ordinated use of medical, social, educational and vocational measures for training or retraining the individual to the highest possible level of functional ability". A technical working party, composed of representatives of the United Nations and some of its specialised agencies, in presenting its proposal for the co-ordinated international programme for the rehabilitation of physically handicapped persons stated "that the rehabilitation of the severely handicapped can only be successfully accomplished by a combination of medical, educational and social services working together as a team." These two statements emphasize the need of co-ordination of services in rehabilitation.

The primary task of rehabilitation services is to gain the confidence of the disabled persons, to make known to him the many

possibilities for his restoration to an active and fruitful life, to help him overcome his fear and to demonstrate the effectiveness of the many services available to him. A well organized programme of rehabilitation will provide for the education and training of the disabled and for the community which is required to take the responsibility of the restoration of the disabled into the world of work.<sup>13</sup>

Total rehabilitation does not mean merely the restoration of the 'affected part' in the body of a person by proper medical care, or vocational training in any suitable job. It means an array of services aimed at the development of the total personality of the individual. This process starts with the medical treatment of a person's handicap or disability and ends only when the person has been trained for, and placed in a job or kind of work that is suited to his capabilities. Rehabilitation is in a sense the institution that makes up for the deficiencies of medical care in terms of its lack of comprehensiveness in services rendered and its limited responsibility to the patient.<sup>14</sup> Utilizing a wide range of practitioners, rehabilitation has as a goal the maximisation of ability in all areas of those who at the termination of medical care have residual disabilities that interfere with or inhibit their "normal" functioning. It is fundamentally a social institution established on humanitarian and idealistic as well as utilitarian premises. To work closely to restore a human being to normality or as near normal possible, personnel from different disciplines are drawn together into a closely knit unit where collaboration, co-operation and co-ordination are essential pre-requisites to obtain the ultimate goal.<sup>15</sup>

True rehabilitation must be multiphased and at the same time form an integrated whole. A total rehabilitation programme consequently provides not only the best but the only reasonably adequate answer.<sup>16</sup>

A service of this kind takes from the psychiatric "rehab" centre the idea of the multidisciplinary approach of bringing together the experience of many different branches of knowledge to focus on the multiple problems of each individual. But the psychiatric centre has a basically medical orientation; its main purpose is to restore atrophied muscles and other afflicted parts of the body. The orientation of the total rehabilitation centre for newly handicapped persons is basically psycho-social; its goal is the total adjustment of the person to his new situation, including the necessary attitudes and skills, and his reintegration into his society. This need for psycho-social orientation does not imply that handicapped persons are abnormal, that there is

"anything wrong" with them mentally. On the contrary, it implies that they are "normal" people, accustomed to more or less normal circumstances; they react strongly, each according to his individual temperament, to the strange circumstances of disability.

Total rehabilitation, then, is the process whereby adults in varying stages of helplessness, emotional disturbance and dependence, come to gain new understanding of themselves and their handicap, acquire the skills necessary for their new state, and achieve new control of their emotions and their environment.

A rehabilitation centre that will really meet his needs, should have a staff aware of all these emotional factors and able to assist him in the process of personality reorganization. They should have the ability to give support and to withdraw it at the right time in the right way; all support must be "support toward independence". The total rehabilitation programme is a delicately woven pattern of skills and attitudes for the benefit of the total person.

To achieve the goal of total rehabilitation there must be full co-operation and team spirit between the medical personnel, teacher, physiotherapist, occupational therapist, orthotist, speech therapist, prosthetist, medical social worker, psychologist, vocational training personnel, vocational counsellor, employment and placement officer and follow up worker. It is also of vital importance that the rehabilitation programmes are carried out in effective partnership with the family and the disabled individual. The programme of effective rehabilitation can succeed only if this endeavour has been infused with a spirit of "realistic hopefulness" and a spirit of constant enquiry inspired by ideals of humanitarianism.<sup>17</sup>

The co-ordination needs to begin at the rehabilitation centre or department and should be extended to cover the rehabilitation programmes being carried out at local, district and national levels.

The work of each member of the team and of each service within the centre should be so planned and carried out that it supports and complements the work of all other members and of all other services within the planned course of each individual's rehabilitation process. Every member of the rehabilitation team should be concerned with the whole process of rehabilitation and not only with that part for which he is directly responsible. One of the members, however, should also be charged with the responsibility of seeing to it that there is

continuity in the process, that the disabled person does not fall in any unforeseen gap between two different services.

Who of the team members should be assigned this task and how it could be best done is a question to which several different answers can be given. It very much depends on the nature of the service concerned, the personnel it employs and their qualifications.

When we take into account the fact that co-ordination has to be extended to include follow-up measures and thus to maintain contact with the rehabilitee's home, employers, and local authorities, the profession of social work offers itself as one most suitable for that purpose. We should recognize the fact that the need for co-ordination does not end with the discharge of the rehabilitee from the centre or department. Already during the rehabilitation process in the centre contacts have to be established with the rehabilitee's family, employer if there is any or otherwise with a prospective future employer, with medical, educational and social authorities of the rehabilitee's home, village etc. After the discharge the contact between the centre and its former patient could be maintained during the educational or vocational training period as well as through the first stages of employment until a follow-up service has produced convincing proof of a successful re-adjustment to the community.

It should be emphasised here that this responsibility of ensuring the continuity of rehabilitation of each individual rehabilitee throughout the entire process is only a part of the co-ordination function. While one member of the team may be given this particular task the team as a whole should be responsible for co-ordinating the work of the various units of the centre.

After the discharge of the rehabilitee from the centre it is appropriate for a local officer, a social worker in the disabled person's own community, to follow-up the case.

It would then be his or her duty to see to it that the rehabilitation measures continue as they were prescribed or planned at the centre, that the various professionals who may be involved with the process after the discharge of the patient from the centre do work in co-operation with one another and do maintain proper contact with the centre.

It should be again emphasised that this particular task is only a part of the co-ordinating efforts at the local level. What else is

needed and can be provided for depends on the size of the community, its location, customs, traditions etc. Obviously, in a large city, a fairly well developed organisation is required while in a remote small village it may be hard to find even a single person to take care of the handicapped.

At the national level in any country the problem is much more complicated. Here, the coordination should involve all the authorities and voluntary groups concerned with various aspects of rehabilitation. Close co-operation should be established in the first place between the various ministries concerned, very often those of Public Health, Education, Labour and Social Welfare. Secondly, co-operation should also be established between institutions – governmental, semi-governmental and non-governmental – that provide rehabilitation services. In addition, there may be a number of organizations and voluntary groups, professional societies etc. not necessarily providing services but supporting them and working for the disabled in other ways. Their co-operation too is needed for the accomplishment of a comprehensive co-ordinated national programme.

Usually, a national rehabilitation commission or another equivalent body is established for achieving the necessary co-ordination between all these agencies and groups.

The mere existence of such a commission may not necessarily solve the problem. All depends on how the commission is formed and how effectively it works. Negative experience has been observed in several countries in this respect and some of the reasons for the ineffectiveness of a national commission have been given as follows:

- (i) the commission is too big;
- (ii) it is not representative;
- (iii) its members cannot devote sufficient time to the commission's work;
- (iv) it does not influence what is going on in rehabilitation;
- (v) it is isolated from the practical rehabilitation work.

A commission which has too many members, most of whom have too many other activities to take care of, is not an uncommon phenomenon. It is of course true that a commission which is to co-ordinate the activities of various agencies and institutes has to incorporate preferably all of them within its programme and sphere of

influence. A commission which is not representative many not properly command authority over such agencies and organisations which feel that the commission does not represent them.

The following measures may be considered in order to find a way out of this seemingly contradictory state of affairs.

(a) A co-ordinated rehabilitation programme has to include within its system the maximum number of government agencies, voluntary organizations as well as individual rehabilitation centres or services which are responsible for or carry out any aspect of rehabilitation.

(b) This all-inclusive system needs an executive body. In some countries the system as a whole may actually be the commission which then appoints an executive committee and or committees for specific purposes. In other countries there may well be a three-level operation: an all-inclusive assembly of agencies, organisations and institutes, a national commission appointed by the assembly or by a government authority and an executive committee.

(c) For the implementation of the policies and decisions of the commission and its executive committee the commission must have a secretariate. This secretariate is also needed to maintain close contact with all the various elements within the system. The size of the secretariate may vary depending on the conditions in each country.

Two main problems any national co-ordinating body will invariably face are the following:

- (i) How to ensure access to rehabilitation for all disabled persons who need to be rehabilitated regardless of where they live (i.e. in remote villages) and whether or not they have financial means to pay for the services they need.
- (ii) Profusion of Services: When most of the countries of the world are suffering from inadequacy and insufficiency of services for rehabilitation of the disabled, particularly so in vast rural areas, it is not uncommon to experience the profusion of services in the capitals and other big cities. The profusion of services does not necessarily mean that the services are adequate and sufficient. There can be, in some communities, a considerable number of small services established by well-intentioned but not always as well-qualified groups of parents or other interested persons. Each of these groups may be looking for contributions

from the community, each will soon want to expand its service, to employ the best experts available and also, occasionally to fight the other groups doing the same.

The co-ordinated international programme worked out by the U.N. technical party stressed the following principles:

“(a) That every handicapped person should be entitled to receive such protection, assistance and opportunity for rehabilitation as may be necessary and appropriate to enable him to share, in as great a measure as possible, the privileges and responsibilities of full life in the society of which he is a member.”

“(b) That every state should in principle recognise its responsibility for the taking of possible measures for the prevention of handicap and for the provision of appropriate care, social assistance, education and rehabilitation for its handicapped citizens.”

Effective co-ordination of all existing rehabilitation services is required among other things in order to have these carried out in practice.

## **Different Stages in Rehabilitation Process**

As has already been explained earlier in this chapter, rehabilitation is a multiphased process. In this process we can identify eight basic factors, contributing to the total rehabilitation of disabled persons in any society. They are case finding or identification; case study or assessment and evaluation; counselling; medical services; education; vocational training; employment and social integration.

### *Case Finding or Identification*

This is the first step in rehabilitation. It is important that a disabled person is identified and located as soon after the onset of disability as possible so that rehabilitation may begin before he is unduly subjected to the disintegrating effect of idleness and hopelessness. Some countries like U.K. have introduced compulsory registration of certain categories of disabled persons like the blind. But few countries in the world have a complete register of disabled persons. A system of compulsory registration and regular referral of the handicapped persons by the registering agency to the rehabilitation centre or an appropriate body is very essential both for planning and executing rehabilitation services in any community.

## *Case Study or Assessment and Evaluation*

The second step involves a thorough and comprehensive case study or assessment and evaluation of the disabled rehabilitee as a total personality. It includes thorough medical examination appropriate to the nature of disability, as well as, administering of a series of psychological tests and social case work techniques. The purpose of such a study is to ascertain the nature and extent of disability, measure of residual ability, chances of recovery, cure and improvement in the physical condition. It should also diagnose aptitudes, interests, motives, emotional balance, and other characteristics of the disabled person which facilitate or inhibit his satisfactory adjustment to rehabilitation programmes.<sup>18</sup>

The assessment and evaluation programme may be carried out within the large frame work of a comprehensive rehabilitation centre with many services or in a small rehabilitation unit. Such a programme should be of at least three month duration and carried out by a professional team of a caseworker, mobility specialist, technique instructors and psychologist in consultation with doctors, physiotherapists, occupational therapists, speech correctionist and psychiatrists. In this programme all the clients are required to go through various courses for evaluation and diagnosis in such fields as: communications, techniques of daily living, orientation and mobility, work skills, and recreational activities. During the courses, not only the client's physical, educational and vocational potentialities are evaluated in both their strengths and weaknesses through various kinds of tests but also his motivation, stability, maturity, personality traits and mental adjustment to disability are diagnosed through the services of case work, counselling, group discussion, and so forth.

## *Counselling*

Counselling is an important step in the rehabilitation process. It is not a single act but a continuing process that binds all of the other services into an organized co-ordinated plan in terms of the needs and characteristics of each disabled individual. It begins with the initial interview and runs through to the satisfactory placement of the individual in employment.<sup>19</sup>

The main objective of counselling in rehabilitation of the disabled is to clarify and explain to the rehabilitee the logic or process of going

about the selection of a suitable programme. The effectiveness of the counselling depends to a large measure upon the degree of rapport established and maintained between the counsellor and the rehabilitee. This is obviously a varying relationship and there are no general rules which fit all situations.

Another objective of counselling is to cultivate self-understanding on the part of the rehabilitee. To be effective, counselling must be based upon an enlightened understanding by the rehabilitee of his own assets and liabilities and of the implications of the diagnosis. The rehabilitee must understand just where he is weak and in what things he is strong. In attaining this objective the counsellor must translate the technical facts made available by the analysis into the rehabilitee's own language. In interpreting and translating the diagnosis, the counsellor must make certain, as he proceeds, that the rehabilitee is following him at all stages.

Counselling should always help in the joint planning of a specific programme of action. In developing this plan it may also be necessary to provide the disabled with information about various occupations such as the training required, nature of the work, opportunities for employment, scales of pay, availability of services and community resources. The counsellor also presents to the rehabilitee reasons for or against alternate vocational goals, and assists him in arriving at an intelligent decision. Once a decision which is emotionally and intellectually acceptable to the rehabilitee is arrived at, the problems of selecting and providing appropriate services becomes more realistic and meaningful.

After a plan of services has been decided upon, the counselling process is then directed towards assisting the client in adjusting to his programme and motivating him to make the maximum utilization of his capacities and interests. In this process the client is assisted to solve new problems which might arise during the period of rehabilitation. Studies have indicated that the disabled requested more frequent assistance from counsellors during the early period of their rehabilitation programme.

In recent years the value of counselling and guidance has been increasingly recognized by rehabilitation experts. Counselling and guidance need be offered at different stages of treatment, education, vocational training and employment. Parent counselling

and family guidance programme form yet another area of counselling in rehabilitation. In general the duties of a rehabilitation counsellor should include integrating and evaluating information received from a variety of sources for meaningful presentation to parents, the school, other professionals and placement agencies.

### *Medical Services*

The role and significance of medicine in rehabilitation requires no special emphasis. It is evident from the fact that till recently rehabilitation was considered a part of therapeutic medicine. The development of specialized branches of medicine such as "rehabilitation medicine" or "physical medicine and rehabilitation" will explain the relationship between medicine and rehabilitation.

Undoubtedly, the first concern of a rehabilitation service is to find ways and means of limiting the extent of the disability. Correct diagnosis and early treatment can prevent many a tragedy.<sup>20</sup> For instance, early treatment of poliomyelitis may leave the patient with little or no defect, whilst delay may result in total crippling. Similarly, corneal grafting may restore vision to the eye with corneal opacity which might otherwise cause blindness.

Restoration and conservation have become the watchwords of modern day rehabilitation programmes. The definition of a sound rehabilitation plan for any disabled individual is largely derived from the physical restoration, both immediate and potential, that can best result from the inclusion of adequate medical services in the rehabilitation programme and from the strict adherence to the safeguards against incurring additional disabilities or aggravating existing disabilities that may be indicated through proper physical examination and follow-up.<sup>21</sup> An effective medical rehabilitation programme ensures the following steps<sup>22</sup>:

- (1) Early detection and treatment of the cases.
- (2) The treatment being domiciliary, near the patients' homes.
- (3) Simple methods of physiotherapy to be used as an essential part of the treatment.
- (4) Treatment of deformities – of early deformities by physiotherapy, and of established deformities by appropriate surgical measures.

- (5) Educating the patients in the care of their hands, feet, eyes, ears etc.
- (6) Training of the patients in some art or craft, if it is found necessary to change the previous occupation of the patient because of the effects of the disease; and
- (7) Education of the public with a view to removing their prejudices, and helping them to develop a rational attitude towards the disease and persons suffering from it.

### *Education*

The value of restoring handicapped children to the full social and economic potential of which they are capable through right education and training has been well established. Education in its broadest sense, is a process which aims at developing and enriching the total personality of the child by providing a well rounded programme of academic excellence, vocational orientation and cultural fulfilment. By this definition, the educational needs of the handicapped child would relate, directly or by implication, to all these factors and forces which operate to prepare the child to face the challenge of life and take on the responsibilities of a first class citizen despite the fact of disability.<sup>23</sup> Education has to be organized not merely on humanitarian grounds, but also on grounds of utility. Proper education generally enables a handicapped child to overcome largely his(or her) handicap, and turns him into a useful citizen. The primary task of education for a handicapped child is to prepare him for adjustment to a socio-cultural environment designed to meet the needs of the normal.<sup>24</sup> Therefore it is essential, that the education of handicapped children should be an inseparable part of the general educational system. The differences lie in the methods employed to teach the child and the means the child uses to acquire information. These differences in methodology do not influence the content or the goals of education. This form of education is, therefore, conveniently referred to as 'special education'.

### *Vocational Training*

Vocational training may be defined as any course of training, the objective of which is the attainment of a skill or a body of knowledge required by an occupation.<sup>25</sup> It includes proper selection of candidates,

proper investigation of jobs and proper training. Vocational training is one of the major services utilized by the rehabilitation agencies in preparing the disabled persons for employment. Carefully selected training, occupational or work therapy may help to develop in the handicapped a consciousness of power and ability to achieve and to give his individuality a chance to assert itself as well as to develop work tolerance and habits.<sup>26</sup> It may also provide the handicapped person with an opportunity to compensate in constructive ways for those characteristics which are unalterable and reduce to a minimum any feeling of inferiority or "differentness". For the disabled, who has to compete in the open labour market against the prejudices of the employer and co-workers, equipment with a special skill is the only alternative. This task is achieved through vocational training, the aim of which is to enable him to live an economically productive, personally satisfying and socially useful life.

### *Employment*

The goal of rehabilitation is regular and appropriate employment of the clients in various fields like agriculture, industry, government or self employment, in a job consistent with their residual abilities with a remuneration that is equivalent to what is paid to other workers in similar occupations. The rehabilitation process is complete only when a disabled person has been placed in remunerative and congenial employment. Education and training lead nowhere unless they are followed by employment.<sup>27</sup> Selective placement ensures the matching of the job demands with the residual abilities of the handicapped. Only where a disabled person can give full commercial output and efficiency, could the placement be considered successful.

### *Social Integration*

Integration of handicapped persons in the community as normal and fullfledged members is the ultimate goal and most desired result of rehabilitation. It is the final stage in the multiphased process of total rehabilitation. Integration means uniting separate entities into a cohesive whole. Social integration of the disabled refers to the process of ending or minimising segregation and deep-rooted misunderstandings, suspicions and hatred between the handicapped and the non-handicapped sections of population. It enables the disabled to attain their rightful place as equally important and contributing members of society as the non-disabled by removing areas of conflict and promoting

harmonious ties between them.<sup>28</sup> It is a complex process brought about by accommodation, assimilation, diffusion and amalgamation. It involves mutual adjustment, participation and acceptance by both the handicapped and non handicapped sections of the society.

## Rehabilitation Centres

The rehabilitation centre epitomizes the modern idea of synthesizing many special skills to bring about a better result for the disabled individuals. This can hardly be accomplished if they had worked individually.<sup>29</sup> A rehabilitation centre is "a facility for combining and making efficacious use of any or all parts of the process of rehabilitation."<sup>30</sup> Such a centre has many advantages. Aside from the obvious advantages of saving time, there are greater advantages to be obtained from an integrated, co-ordinated and complete rehabilitation service than those sought from a piecemeal service howsoever specialized it may be in itself. Switzer and Rusk have noted a number of characteristics of a rehabilitation centre — which will be useful in constructing a definition:

- (1) "They combine within one organization the facilities and processes for moving the disabled persons as far as possible along the road from the hospital bed to productive employment."
- (2) "They provide a co-ordinated approach in the evaluation of the patient's condition and the prognosis of the degree and character of his physical and vocational restoration."
- (3) "They are not hospitals, schools or industries, but partake of the characteristics of all these."
- (4) "They are a tool for use by all social agencies, by the medical profession, and by representatives of groups who are interested in the fullest possible rehabilitation of the disabled."
- (5) "They are patient-centred in that, around the problems and prospects of the patient, there is formed a programme in which each of the professional and non-professional services functions simultaneously. The rehabilitation centre supplements rather than supplants the physical medicine and rehabilitation activities and programmes of hospitals and other agencies within the community. Centres by themselves cannot meet the entire community need for rehabilitation services, but by their existence they increase the quality and quantity of the work performed by other rehabilitation agencies which focus on special aspects of the entire problem."<sup>31</sup>

A rehabilitation centre furnishes integrated services, most of which are provided by it, but some of which may be procured elsewhere. Integration implies not merely the harmony between services, but the uniting of these services to attain a common goal without at the same time stifling initiative or bringing about standardization.

Six types of rehabilitation centres are generally found in countries like U.S.A. viz: teaching and research centres, centres operated by hospitals and medical schools, community centres with beds, community out-patient centres, insurance centres and vocational rehabilitation centres. Whatever be the nature and type of the centre, the services they render should be of high quality and in consonance with the noble ideals of total rehabilitation.

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## CHAPTER IX

# MEDICAL REHABILITATION

### Meaning

Medical rehabilitation means the restoration of the physical capacity of disabled persons, either to its original level or as close to it as possible.<sup>1</sup> It also aims at developing to the maximum extent the physical and mental functions of the disabled. The principle of rehabilitation is, first, to minimize the initial loss of power and second, to restore the maximum amount of function. The aim is not only total restoration but speedy restoration. According to the present day concept the rehabilitation of an injured person should start in the casualty department or even in the ambulance and of a routine surgical patient the moment he comes under treatment. This involves surgical and manipulative treatment, which is accompanied and followed by physiotherapy, psychological treatment, social service, muscle development, joint mobilization and diversional therapy and is completed by retraining and resettlement.

The restoration of function is the aim of rehabilitation and the term medical rehabilitation covers the methods employed in this process. Physical medicine (medical rehabilitation) according to Bach, is the application of the physician's art and his particular knowledge of biophysics to the investigation and treatment of his patient and to the maintenance of health and the prevention of disease.<sup>2</sup> Physical medicine involves the employment of light, heat, cold, water, electricity, massage, manipulation exercises, and mechanical devices in the diagnosis and treatment of disease. Rehabilitation medicine is not

merely the third need in medical care, as Howard Rusk has put it, but it is a primary, core need.<sup>3</sup>

## **Development of Rehabilitation Medicine**

Remarkable changes in the pattern of services for the handicapped occurred throughout the world in the post world war years. When the war was at its peak, hospitals were flooded with large numbers of very severely disabled persons who required prolonged medical treatment. The physical condition of these patients was such that simultaneously with medical attention, they could be usefully trained and helped in their total rehabilitation. The minimum time required for hospitalization was thus fruitfully utilized in evaluating the patient, assessing his medical and rehabilitation needs and initiating his training, aimed at his successful rehabilitation.<sup>4</sup> While treatment was continuing the patient was emotionally adjusted to his disability and assisted to regain normalcy.

Experts like Dr. Howard A. Rusk and Dr. Henry H. Kessler demonstrated that excellent results could be achieved through comprehensive individualized services. They also proved that few men were so disabled that they could not learn to use their remaining capacities in some kind of useful work.

The concept of modern medicine aims at the treatment of the total man. In the past, the definitive, medical and surgical care was directed toward the treatment of diseases only. Little attention was paid to the recovery from the effects of those diseases during the convalescence stage or the sequels resulting from them. The advances made in various fields of medicine during and after second world war have profoundly influenced all disciplines in medicine. Although these advances have solved many problems they have also created newer ones which have added to our responsibility. These new problems have created new demands on the medical profession. With the discovery of anti-biotics a child affected by cerebral palsy or a paraplegic has greater chances of longer survival than in the days of old. The patients with heart disease and arrested tuberculosis are surviving much longer than they did few decades ago. Even the expert medical and surgical skills have little to offer to improve the plight of these cases. Paradoxically, our efforts to prolong the span of human life have created more demands. It is, therefore, necessary to provide a scientific programme to enable these persons to lead a

useful life compatible with their disabilities. This is the role of rehabilitation in medicine.

The word "Rehabilitation" came to be introduced in medicine when it was most frequently used to describe the efforts to restore the physically handicapped to a remunerative occupation.<sup>5</sup> During the war, it was expanded to include the combined efforts of the medical and para-medical personnel to achieve for the handicapped, physical, mental, and vocational as well as economic usefulness. Rehabilitation then focussed its attention only on the individuals whose future was modified by disabilities over which definitive care had no further control. Later on, it entered into the convalescent care of the medical and surgical patients. The Physicians recognized that by using the techniques and facilities of rehabilitation medicine they could minimize the disabilities and cut down the convalescence period of the patient. It was also recognized that the effects of disuse and in-activity in diseases which require long convalescence could be prevented or minimized by proper care during the pre-operative and post-operative period. Today, rehabilitation has become so much integrated with other disciplines in medicine that it is very difficult to demarcate where definitive care ends, and where the rehabilitation begins.

Basic to this new development of the "team" concept of rehabilitation is our changing concept of disability. As the Task Force on the Handicapped of the office of Defense Mobilization pointed out in the extremely significant report in early 1952, "when physical standards were drawn up during the first and second decades of this century, they were influenced by the 'anatomical' concept of medicine which was then in sway.<sup>6</sup> Competence was measured in terms of anatomical perfection. A man was either fit or unfit for work, depending on whether or not he was anatomically whole. It was all or none. A man could do the whole job or none of it. He was disabled for all work if he was disabled for any part of it."

With the development of the physiological or functional concept of medicine and the specialization and subdivision of jobs into their components, the report states that the "perfect anatomical specimen" concept of man is no longer valid in determining suitability for employment.

With the "anatomical" concept of medicine gradually being replaced by this newer "functional" concept, it is apparent that medicine

must rely also upon the psychologist and other members of the rehabilitation team.

Experts in the field have developed the various dimensions of the rehabilitation concept in medicine. Henry H. Kessler approached rehabilitation through orthopaedic surgery. Howard Rusk, George Deaver and Elkins contributed to the development of 'rehabilitation medicine'. Howard Rusk developed the administrative aspect while the others concentrated on the clinical aspects. Frank H. Krusen promoted 'physical medicine', while Mary Switzer approached the problem from the social and vocational stand point.<sup>7</sup> Rehabilitation medicine has today attained a status equal to that of medicine or surgery in the medical field. Total medical care of disabled is not just a question of acute medical, surgical, or pharmacological management; it is the challenge of a total rehabilitation care programme involving all the emerging sciences of ergonomics, sociology, cybernetics as well as the already well established specialities in medicine.<sup>8</sup>

## **Process in Medical Rehabilitation**

Medical rehabilitation involves prevention of disabling diseases, restoration through remedial treatment and the use of prosthetics.

### *A. Prevention*

Prevention is better than cure and it is the first step in the process of rehabilitation. Although rehabilitation means restoration of functional capacity to the disabled, prevention of disability is none the less of greater importance. "Just as curative medicine led in turn to a study of the conditions which cause disease and the adoption of invaluable national measures of public hygiene and preventive medicine, so does a study of modern rehabilitation lead back to a careful investigation of the methods by which crippling disease or injury could be avoided, or its disabling effects reduced".<sup>9</sup> Prevention of disablement constitutes one of the major tasks of rehabilitation and thus a matter of direct concern for all rehabilitation workers. With the advancement of medical science prevention of disablement is no more a remote possibility. The basic role of medical science in the prevention of handicapping conditions is to understand the genesis of disabilities and the natural history of the underlying diseases or pathology as well as to take effective measures for eliminating these from the community and for reducing the impact of the problem on the patient himself.<sup>10</sup>

Prevention of disablement is a matter of grave importance to any country in the world. As a United Nations report mentions: "Although it may not be possible to do a great deal in the way of direct therapy and rehabilitation in countries which do not yet possess an organized hospital and school system, it must not be forgotten that it is just as important to prevent or limit disability as it is to rehabilitate and train those who are already disabled. From the viewpoint of a nation's total economy and the well-being of a maximum number of its citizens, preventive efforts deserve the very highest priority. Campaigns to improve public hygiene and sanitation, to attack infective disorders, to raise standards of nutrition and child-care, and to spread knowledge on the prevention of disease and injury, deserve all possible encouragement and support." <sup>11</sup>

The methods of prevention are numerous and varied. Sometimes the method may be a specific one, directly attacking the cause of the disease, as for example vaccination or inoculation. In certain other cases, it is more complicated and influenced by social and economic factors, such as nutrition, sanitation, and standards of living.

Prevention efforts are often <sup>often</sup> impeded by such factors as neglect in the initial stages, lack of medical facilities, lack of trained personnel and ignorance regarding existing medical facilities.<sup>12</sup>

### **Prevention of Hereditary Defects**

Very few defects are directly inherited; therefore, preventability of hereditary defects is limited to a few cases. Prevention is feasible in cases where the defect is dominant but it is seldom effective in cases where the defect is recessive. In India, the age-old practice of exogamy, which forbids matrimonial alliance between closely related individuals, has provided an effective safeguard against the occurrence of hereditary defects amongst the Hindus. Nevertheless, conscious efforts to prevent hereditary defects on scientific lines need special attention. Genetic counseling of potential parents is one among them.

### **Prevention of Congenital Defects**

Most of the congenital deformities are traceable to unhealthy pre-natal environment. Therefore a good system of maternal and child health services would go a long way towards prevention of congenital

defects. Unfortunately, these services are not sufficiently developed in the developing countries as is evident from high infant and maternal mortality rates.

### **Prevention of Acquired Defects**

Inefficiency and ignorance of antiquated midwives, non-availability of immediate maternity facilities and negligence on the part of uneducated expectant mothers are some of the distressing causes of disabling at birth. In developing countries majority of females, especially from rural areas are illiterate. Its inevitable consequences are reflected in the lack of care and upbringing of children and of post-natal care of the mother and child. Prevention of natal injury demands sound obstetric care at the time of delivery. Progress in this field is possible only with sufficient number of qualified personnel and equipment.

Prevention of any disease must be regarded as the most effective safeguard against the disablement caused by it. Today it is the accepted goal of medical science to prevent illness and disabilities, and also to take every possible step to promote positive health. The marvel of modern medical science is that so much is now known in comparison with what was known even half a century ago. But of equal marvel is the systematic manner in which what is known about the characteristics of disabling diseases and hazards has been put together to give form and content to a strategic community-wide attack upon them with a view to preventing the preventable problems and, for those already established, to diminishing the resulting functional handicaps. These functions can best be categorized under three heads:<sup>13</sup>

- (a) Community-wide disease prevention and control;
- (b) Detection, diagnosis and treatment; and
- (c) Application of specialized measures early in the course of treatment, whenever necessary, for prevention of secondary disabilities.

Closely related to these functions, and supporting them all in a general way, are three important undertakings: environmental sanitation, health education of the public, and educating medical and allied health personnel on practice of preventive medicine and preventive rehabilitation.

In a wide disease-prevention programme, control of such highly infectious diseases as poliomyelitis, trachoma, small pox, viral encephalitis etc., has priority over less acute health hazards. The value of vaccination against small pox and immunisation against poliomyelitis, diphtheria, tetanus and whooping cough has been established already and an increasing number of children are being protected every year.

Organised medicine should also contribute its share towards accident prevention – in the home or on the road or in the factories. Medical ideas about prevention of serious damage during accidents are highly valued by the automobile industry. Industrial medicine is a speciality by itself on its own right – this concerns itself with the task of providing safety and health promotion for the industrial worker.

The most effective step in reducing the incidence of handicapping diseases is early detection and recognition. Another step is an organised and co-ordinated service of physical rehabilitation; both in the hospital and out of it.

## *B. Restoration*

The maxim in rehabilitation is "Never train around a disability that can be corrected or reduced". It means that every medical, surgical, and auxiliary service should be used to remove or reduce a disability to the minimum before giving vocational training. It is important that early institution of the correct treatment is the surest way to assure maximum restoration of the patient's health and to minimise residual handicaps if any. Physical restoration has been defined as "the system of treatment that employs every device and measure to expedite recovery, shorten the period of convalescence and secure for the patient the maximum development of his physical and mental capacities. It does not mean exclusive use of the techniques of physical medicine, but implies the use of all medical and surgical measures as well as the ancillary services which will restore the individual to the full use of his faculties". The duty of every physician is to strive for correct, early diagnosis and institute appropriate treatment. In fact, from the point of view of the sick person, this constitutes the whole purpose of medicine. Physical restoration includes adequate diagnosis, appraisal of the individual's working capacity, surgery, convalescent care, physical therapy, physical conditioning, occupational therapy, remedial gymnastics and prosthetics. In some

cases, all these services, or a majority of them, are required; in others only one or two of these are needed.<sup>14</sup> For example, in cases of cerebral palsy, surgery is not of much help; hence treatment is directed to physical independence and education through physiotherapy and occupational therapy. In a few cases, speech therapy is also needed. In most of the amputation cases, on the other hand, only surgery and prosthetics are required.

Community-based schemes are essential to achieve early detection of handicapping states. The best known example is perhaps the school health services. Here early detection can be successfully combined with skilled diagnostic procedure and treatment services. It also permits continued medical care for the young, making it possible to prevent the crippling effects of certain disabling conditions such as rheumatic heart disease. Mass radiological screening to detect tuberculosis and the working of anti-natal clinics for expectant mothers have contributed substantially to detect diseases early and to effectively prevent handicapping states. Improved obstetric care should be considered as a corner-stone of the efforts to prevent physical and mental handicaps; it has been responsible for the reduction of birth injuries and the incidence of congenital syphilis and ophthalmia neonatorum.

Advances in therapeutic medicine have not only saved hundred of thousands of lives but have substantially reduced the incidence and severity of handicapping conditions. The best known example is the profound change brought about by the corticosteroid drugs on the outcome of rheumatic diseases. Antibiotics and chemotherapy have changed the course of handicaps resulting from tuberculosis, syphilis and leprosy. Yet we are only on the fringe of achievement as far as anti-cancer chemotherapy and treatment of degenerative, and even some infectious diseases are concerned. However, the promise is always there that tomorrow's medicine might meet these challenges successfully.

This is the era of specialisation. Because of rapid advances in medical science, specialists and specialised diagnostic and treatment procedures have become part and parcel of present-day medical practice. This has made it possible to reduce or even eliminate handicaps hitherto considered hopeless. The new vista opened by open heart surgery is a remarkable example. While such advances afford successful treatment to a small number of the severely disabled

the skill and the expense they call for have induced a new surge towards shifting the emphasis to early rehabilitation. Medical rehabilitation service is being increasingly considered an essential department of a hospital.<sup>15</sup> Its usefulness is not just limited to providing physical-medicine treatment for paralytic or painful disorders and to re-abling the disabled through adaptive gadgets or prosthetic appliances; it is also a highly useful service to prevent severely handicapping sequelae of long-term diseases. By using simple inexpensive protective splints correctly at the correct time and by diligent application of principles of positioning, changes of posture and movements, major crippling can be prevented very often and drastic surgical procedures avoided.

Technological and organizational advances in physical medicine have further helped to reduce the effects of severe disabilities, thus reducing the resulting handicaps. The technical advances include a shift in emphasis on active motion and use of the disabled part by the patient instead of assisted motion and massage; improved prostheses primarily designed for function rather than appearance; and training equipment and programmes which stress self-care and independence.

## **Medicine**

The miracles of modern medicine have gone a long way to restore many a physically handicapped person to normalcy. Medicines like ACTH, prednisone, streptomycin and penicillin have completely changed the outlook for the crippled. Primary medical treatment is given in hospitals and secondary treatment is given at the out-patient departments. The organisation of a sound public health service is essential to a rehabilitation programme in any country. Public Health Service provides physical restoration facilities. Primary health centers in rural areas would serve much in fulfilling the purpose of medicine.

Medicine brings not only the scientific endeavor to the patient but compassion to the disabled people. The doctor must realise that he is not only a physician but also an educator, not only medical and para-medical personnel but also of the patient in matters pertaining to rehabilitation. Medicine must accept the need for concerted action in creating total care units.

For medicine to play an increasingly effective role in rehabilitation, more attention is to be paid to the educational and

research aspects of the problem. On the educational side, a lot more instructional material is to flow to the general practitioner as well as to the public. Pamphlets explaining certain common but serious diseases, and their remedies could be kept at all hospitals for the guidance of parents, patients, social workers and others. Refresher courses are to be given in major medical centres for the orientation of doctors and nurses, stressing the use of medicine in preventing and treating handicapping diseases as well as accidents.

## **Surgery**

A comparative new branch of surgery, namely, orthopaedics, has come to play a very important role in the rehabilitation of the physically handicapped. Orthopaedics is that branch of surgery which deals with all ailments of bones, joints, muscles, tendons and nerves. The science of orthopaedics received a new impetus during World War I. Sir Robert Jones of Great Britain established a school of orthopaedic surgery during the first World War and thus laid the foundation for the development of orthopaedics not only in England but throughout the World. In most countries, medical, surgical and rehabilitation facilities are available only in large cities.

## **Physical Therapy**

Physiotherapy is the application of physical agents and forces to reduce pain and to maintain or improve function<sup>16</sup>. Pain may be relieved by heat, massage and immersion; function may be improved by exercise, training and stretching. The physiological effects of different physical agents are utilised for therapeutic purpose in physiotherapy which is the science of physical treatment by means of therapeutic exercises, heat, cold, massage, electricity.<sup>17</sup> Some of the uses and applications of physical agents used in physical therapy are summed up below:<sup>18</sup>

<b>Physical Agent</b>	<b>Application</b>	<b>Desired Effect</b>
Heat	Moist heat	Relief of pain Muscle relaxation
	Diathermy	Sedation
	Short wave Ultra sound	Increase circulation Effect on connective tissue

Physical Agent	Application	Desired Effect
Cold	Ice	Raise pain threshold
	Cold objects	Decrease spasticity Sedation
Exercise	Range of motion	Maintain mobility
	Active	Increase strength Improve co-ordination Improve posture Overcome muscle imbalance Improve endurance
	Specific	Improve respiration Improve vascular tone Increase vascular bed Improve function
	Training	Lifting; transfer Gait; ambulation
Massage	Effleurage	Reflex muscle relaxation Reduce edema
	Friction	Reduce muscle spasm Counter irritation
Traction	Stretching	Improve joint range
	Non-surgical traction	Elongate shortened tissues Separate tissue surfaces
	Manipulation Wedging	Break adhesions Stretch contracted tissues
Electricity	Ion transfer	Introduce ions locally
	Stimuli	Contract muscles
	Continuous current	Anesthesia; narcosis
Ultraviolet	Mercury or carbon arc	Destroy surface organisms Increase local circulation
Water	Whirlpool	Local heat and massage Debridement
	Hubbard tank pool	Exercise without gravity or against viscosity.

## Heat

The principal indication for heat is the relief of pain. It may be applied in its radiant form (electric light bulb, sunlight, infra-red burner), conversive form (diathermy, ultrasound) or conductive form (water, solid or semi-solid pack, paraffin, hot water bag, electric heating pad). It may be given dry or moist (saturated moist warm air, wet towel, immersion). Heat is also used to dilate small blood vessels in the hope of increasing local circulation where it seems indicated.

Heat may be applied locally or generally to relax or sedate. Although almost any of these forms of heat can be applied so that there is heating in depth, deep heat is most readily achieved with some form of diathermy – conventional or short wave, microwave or ultrasound. The choice of the source of heat will depend upon the training and experience of the physician.

Although one form of apparatus may be used more often at one clinic than in another, the relative popularity in 1968 was about as follows: for muscle spasm – hot moist packs, especially silica gel encased in canvas; for low back pain – diathermy; for arthritis of the hand – paraffin bath; for arthritis or pain in the neck region – incandescent lamp. Dosage is a matter of opinion, not fact. Opinion varies greatly on the source of heat, the method, the duration and the frequency of application.

Other ways of applying heat include infra-red radiation, microwave radiation, ultrasound, moist air, heated water, hot compress and a heating pad.

All forms of physical treatment (as with drugs) should be prescribed in terms of dosage of heat and should be related to the physiology of the tissue treated and to its therapeutic effect.

Heat should be comfortable throughout its application. There are patients who feel that if a little heat is good, a lot is better. Although it is difficult to prescribe what is optimal, it is certain that when the intensity exceeds a certain point, heat may be deleterious. Following a heat treatment, the skin should be pink and warm, not red and hot. The deep pink colour should disappear in about 20 minutes following treatment.

The part receiving heat should be divested of clothing during treatment. Parts should be covered only for modesty, comfort and

safety. During the first treatment, the operator who applies the heat should ask the patient about heat sensation. On the basis of response, particularly during the first and second treatments, the therapist is usually able to determine the limits of comfort for future treatments by repeating the application with attention to distance, position, duration and other determining factors.

Most forms of treatment can be dangerous if administered carelessly or with errors in quantity or timing. Precautions of thermotherapy are based primarily in lowered heat sensitivity, diminished skin sensation, circulatory embarrassment and unreliability of the patient. Since heat may cause tissue swelling and perspiration, the part treated should remain readily available for inspection during treatment.

### *Laser Therapy*

Low energy (about 1-50 mW) lasers are promoted as a new, effective way to produce analgesia and accelerate healing. Low power laser treatments are done in many countries and are supported by some experimental evidence.

In the United States, treatments typically involve 1 to 5 minute exposures with 1mW helium neon (HeNe) or gallium aluminum arsenide (GaAlAs) lasers. These energies are too small to elevate tissue temperatures more than 0.1°C. Nevertheless, low energy lasers are reported to stimulate collagen production, alter DNA synthesis, accelerate wound healing, and improve function of damaged nerve tissue. Although studies frequently find wound healing speeded in rabbits and rodents, the changes often occur primarily in the early stages of healing. Healing benefits are more difficult to find in other animals such as pigs and humans. Some studies of osteoarthritis, back pain, headache, and neuropathy find good to excellent local and systemic pain relief in 60 to 80% of the subjects. Other studies, however, find no benefit.

At present there is no accepted mechanism to explain the effects of low energy lasers. In addition the energies, wavelengths, and treatment approaches have not been established. Until theoretical and clinical questions have been addressed, the value of laser treatment will remain unclear. In view of the number of positive reports and the innocuous nature of treatments, further evaluation should be done.<sup>19</sup>

## *Cold*

In terms of physics, cold is an aspect of heat. The body or its tissue can be cooled by removing heat from it. Several methods may be used. Temperature may be reduced by convection (blowing of air over the uncovered skin), by evaporation (spraying with a highly volatile liquid) or by conduction (the application of solids, liquids or gases at temperature lower than that of the skin, especially, ice).

Cryotherapy (cooling) may be used to reduce the heat locally to lessen abnormal muscle tone (spasticity); to relieve pain, primarily by raising the threshold of pain receptors, especially following the swelling of trauma or inflammation of the acute stages of thermal burns, and to lessen local circulation. Local cold may also lessen local metabolism sufficiently to gain time before surgical treatment such as amputation in a gangrenous limb.

Equipment is available for the application of cold through packs and circulating coolants but the simplest and probably safest method is the use of ice as a pack or a massaging block.

## *Range of Motion*

Motion may be used in one or more of several ways. If the patient engages in it actively it is called exercise, if passively, it may be called stretching, traction, or manipulation, depending upon the amount of force used, the direction of the force and the manner of application. If the skin and underlying tissues of the patient are moved, the procedure is called massage.

The chief form of therapeutic motion is exercise. Exercise may be classified in many ways. First, with relation to the force expended by the patient, it may be assisted, in which case the patient does some of the work and the therapist or some other person supplements it. The patient may also do the exercise unassisted.

Another classification of exercise is based on whether a joint or joints are moved when the muscle contracts. The traditional exercise is related to motions of parts required in locomotion or manual work. When the contracting muscle shortens, if it moves one or more joints the contraction is called isotonic; if there is no joint motion, the contraction is called isometric. It is disputed whether isotonic or isometric is more valuable for achieving strength or maximum function.

In general, it may be said that each form of exercise has its value. Most prescriptions call for isotonic exercise since it is more applicable to more muscles in the body and its rationale is more immediately apparent to the patient since it is traditional. Either of these forms of exercises may be performed with or without equipment. Apparatus is used primarily to make exercise more attractive or at least less monotonous. Exercise done with apparatus can usually be performed for a longer period and requires less time of personnel. Also, it is easier to grade the exercise when equipment is used. The virtue of prolonged exercise is that for activities of daily living and employment, endurance is a more important aspect of muscle work than great strength for most jobs.

There are many other classifications of therapeutic exercises. There are exercises named after parts they purport to improve. For example, breathing exercises aim to deepen inspiration or expiration or even to alter the rate and rhythm of respiration. There are exercises designed to improve the working function of the vascular system, but for the most part, exercises are given to strengthen muscles sufficiently, to make them functionally useful, whether to achieve better ambulation through crutch walking or the better use of an artificial limb. Some orthotic devices are built to exercise certain muscles in an attempt to improve spinal alignment (Milwaukee brace) and some exercises are intended to improve scoliosis without bracing (Klapp exercises). Other exercises stress repetition as a means of conquering inco-ordination (Frenkel's exercises). The principles of exercise can be applied to any number of conditions. They are: to improve strength (local and general), endurance, joint range, coordination, posture, but most of all, function.

Exercises may be given in conjunction with the assistance of nervous reflexes, normal or pathological. Exercises called PNF (proprioceptive neuromuscular facilitation of Kabat) take advantage of reflex arcs in an attempt to activate or support certain motions.

Exercises should begin gradually and increase in intensity. "Warming up" both externally and internally is desirable. The use of some heat before exercise is recommended – the simpler the form the better. The gradual increase in exercise intensity is an internal "warm up". Exercise should not cause fatigue but it should demand progressively increasing energy expenditure. If exercise causes pain during its performance, either the motion or intensity is usually contra-indicated; if there is pain the following day it may be natural reaction

to exercising an unused muscle. Such muscle pain should diminish progressively after twenty-four hours.

If exercise is indicated, it should usually be given daily, as in fact should most forms of treatment. More often than not, exercise should be given several times a day in increasing duration and with increasing effort. For example, a quadriceps femoris muscle which has been imprisoned in a plaster cast, should be exercised (isometrically) by "setting" as soon as the surgeon is satisfied that such motion will not compromise the injury or his surgery. Setting exercises should be given a few times during the first hour of the first day of exercise and then increased in number and frequency daily until the cast is removed. Isotonic exercises should then be instituted several times a day with increasing frequency and effort, with the addition of progressively increasing resistance as tolerated by the patient. Exercise should be continued until a "functional" level is exceeded or in muscles which cannot return to normal, until a plateau is reached.

Although exercise should be prescribed by the physician and supervised by a therapist, maximal results can be achieved only if the patient continues to exercise in the ward or at home under the supervision of the nurse or intelligent relatives.

Many exercises are prescribed for preparing the patient for a return to ambulation. After prolonged bed rest, it is usually desirable to adjust the patient to the upright posture by controlled, gradual elevation, best achieved by the use of a tilt-table. Ambulation may then proceed in stages, from standing between parallel bars, to independent walking. Some physicians employ additional aids: a walkerette, with or without wheels, or a harness suspended from an overhead trolley. Physicians who oppose the use of such devices insist that they may establish poor walking habits.

### *Traction*

Traction is the mechanical application of opposing forces to separate articular surfaces in malposition or to stretch soft tissues.

The surfaces may press on each other or on a nerve. The surfaces may be parts of movable or relatively immovable joints, for example, finger joints or the articulating surfaces of vertebrae or

vertebral facets. X-ray studies often show that vertebral foramina are encroached upon by osteophytes which in turn may irritate or compress the spinal roots passing through them. It is possible to "pull" the narrowed space open by traction. Some patients with hypertrophic cervical arthritis improve following traction but not from any other conservative measure. There are instances in which patients with low back pain, especially of spondylolisthetic origin experience relief from traction in flexion.

Traction should be applied where indicated in the neck and low back. Since the forces required are often too great to be achieved by one or two operators manually, mechanical devices are usually used. This permits accurate measurement of time, force and rest periods. The machine used contains a motor which pulls on a cable or heavy cord attached to an encircling garment such as a corset. The weight and friction of the patient are often sufficient to act as counter force, but if they are not, the body can be secured with a fixed circling garment. The amount of force to use is the amount of force which will give the patient some relief without endangering his skin or other tissues. In general, this may be considered as about 25 pounds for the neck and about 75 pounds for the low back. Relief sometimes occurs during the traction. If there is no relief after two spaced sessions it is unlikely that traction will be effective later.

### *Stretching*

Stretching is a procedure which is not used often enough. There are many fasciae, ligaments and muscles which "shorten", for example, the fascia lata, the hamstrings and the tendo Achilles. It is safe, simple and sometimes necessary to manually stretch such structures if they cause symptoms of disability. Shortening must be proven by measuring limitation of motion. Stretching should be preceded by heat which, although not always essential or even effective, is of physiological preparatory value. Stretching is sometimes called mobilization.

Stretching is not to be confused with manipulation which it may closely resemble. Stretching implies a steady distraction of tissue with one hand of the operator pulling a part in one direction and the other hand pulling in an opposite direction. A slow, sustained stretch with the use of an appropriate mechanical device may sometimes be more

effective than a short, manual stretch. Manipulation is not gradual but usually a sudden distractive or rotatory force.

Stretching should not only be applied daily, if indicated, but whenever possible. Its gains should be maintained by the use of interim splints, corsets or other orthotic holding devices.

### *Massage*

Massage is the application of the hands and fingers to the skin and underlying tissues to produce pressure in motion. The psychologic value of the laying on of hands by a "healer" is as old as medicine. Many patients feel more secure if the hands of the healer touch them, particularly if the operator has established proper rapport or has a reputation for helping. If the laying on of hands is accompanied by "health talk" the patient may be even more impressed. Massage is a manual skill which is as difficult to teach by the printed word as is the playing of billiards. Massage is practical as well as scientific. It has been with us for more centuries than most other forms of treatment because, when other methods fail, massage may work.

Massage did not begin as a rational treatment; it was used only because it gave relief of symptoms or simply because when given correctly it is soothing, relaxing and even pleasurable. We can explain some of its rationale. Massage has a direct or indirect effect on circulation. When administered with sufficient force, for sufficient time and in the right place, massage may overcome muscle spasm and its concomitant pain. Massage is probably most useful in back pain caused by minute disturbances in normal vertebral alignment. It is possible that massage may relax muscle spasm sufficiently to allow vertebrae to "slip back" into place. The physician who will not prescribe it because of so-called "science", violates the scientific attitude of therapy which is trial and error. Of more importance is the fact that he may be denying his patient the only relief immediately available.

Massage may also be used to reduce edema where there is a local lymphatic obstruction; for example, in the arm following radical mastectomy. Massage may be used to push fluids mechanically into the veins.

Tissue manipulation may also be used to break up adhesions and scar tissues.

## *Manipulation*

Manipulation is the use of the hand to distract tissues, usually by a suddenly applied force, in the hope of breaking periarticular adhesions or restoring motion to a joint in which excursion has been diminished by soft tissue pathology. It is used most often in patients with arthritis, periarthritis, contracture, tenosynovitis, or hysterical paralysis. Because of its inherent dangers, it should be done by a physician only after he has made a definitive anatomical diagnosis.

## *Electricity*

Electricity has many applications in medicine, and when used for therapeutic ends is called electro-therapy. To be all-inclusive such a term would include X-ray electro surgery, electro convulsive therapy, cardiac defibrillation and viscus stimulation, but these are considered not within the realm of physical therapy. For the purpose of this chapter, electro-therapy is the application of the electric current in treatment without the generation of perceptible heat. Thus, electro-therapy includes electrical stimulation of nerves or muscles, the passage of current without galvanism or with the introduction of ions into the body (iontophoresis) or the use of interrupted currents of low intensity to raise the threshold of the skin to pain. Of these, the most widely used is electrical stimulation.

When the motor nerve ceases to transmit impulses normally to a muscle because of disease or discontinuity, the muscle begins to atrophy. Atrophy can be delayed by contraction of the muscle. If the muscle is forced to contract against an external resistance, the atrophy will be halted. Thus, in peripheral nerve injury, in the absence of nerve inflammation (if this can be determined) daily electrical stimulation is indicated. It is customary to precede such treatment with the application of heat to the part. Stimulation should be given with a current intensity and duration great enough to cause contraction without pain and the duration of each stimulus should be long enough to cause a contraction without pain, usually 200 to 300 milli-seconds, at intervals of 300 milli-seconds, for several minutes.

When ions in solution are applied to the skin few of them penetrate. If the ion solution is placed between the skin and an electrode of the same polarity as the "therapeutic" ion, the ion can be driven into the skin. The depth of penetration is limited by the capillary circulation in the dermis which sweeps away the ions into the blood

stream. If there were no capillary absorption, depth of penetration would depend upon the voltage applied. The quantity of ions introduced will depend upon the tolerated milliamperage and the duration of current flow. This is not a large quantity, but a relatively large number of ions can be driven into a small area where they may exercise their effect. Among ions which have found popularity from time to time are histamine, mecholyl as well as some colloids such as hyaluronidase which carries a positive charge.

A low intensity current with a frequency of about 100 per second, if applied long enough, may result in local anesthesia. When a similar current is applied to the head with electrodes placed over the eyes (and even on other parts of the head) a certain number of patients may become drowsy and even fall asleep. There is considerable variation in this phenomenon from questionable to convincing positions.

### *Ultra violets*

The colours of the visible spectrum are seen because the retina translates wave lengths of electro magnetic radiation into nerve impulses interpreted by the higher centres as colours. When the wave length is about 800 millimicrons, we see red; when the wave length is about 390 millimicrons, we see violet. When the wave length is shorter than 390 millimicrons, in the range of about 200 to 380 millimicrons, colour does not register. Such light may be called "black" but more properly it is called ultraviolet radiation. The shorter the wave length, the more powerful its chemical effect. The most striking biological property of shorter ultraviolet rays is its lethal effects on living cells and tissues. This accounts for the reaction of the skin to irradiation and for the germicidal properties. Ultraviolet rays also convert ergosterol to vitamin D, and histidine to histamine, which, when diffused through the skin, causes capillary dilation or erythema, the conversion of tyrosine to melanin and a thickening of the dermis. The capillary dilation caused by ultraviolet may be transient or prolonged. When prolonged the skin becomes reddened or sunburned. The inflammation of the skin causes the separation of the superficial layers of the epidermis which eventually "peel off".

Ultraviolet is used largely in skin diseases and especially in psoriasis where it seems to give a fairly rapid, quite definite but not permanent effect. Most psoriatic lesions clear in the summer sun or

artificial radiation, particularly if combined with the exhibition of coal tar products before radiation.

Ultraviolet is applied with a generator which usually depends for its generation upon passing electricity through mercury vapour. The radiation is deleterious to the eyes and these should be protected in both the operator and patient during treatment. Although natural ultraviolet radiation is accused of causing skin cancer in some people, it is unlikely that the clinical use of ultraviolet, regardless of how often it is repeated, will result in the formation of neoplasm.

### *Water*

The external use of water is called hydrotherapy. It can be used as an aid in exercise since it assists through buoyancy and resists through viscosity. Water is also used as a medium to carry heat or cold to or into the body either by surrounding the part or by a compress. The amount of heat applied in water must be watched carefully since skin burns more rapidly in water at 125° than in air at 190° F. When water is whirled it acts as a form of massage and also as a debriding agent for open wounds. Water is usually applied in a container which is called a tank, if large, or a whirlpool bath, if the water is agitated while the part is immersed.

Water is also used to irrigate body cavities and may be used as a means of applying pressure to a small or a large area in varying degrees and at different temperatures.

Water in motion is also used to clean wounds, to give massage and to sedate or relax, if the pressure is low; to excite if the pressure is high.

### *Physical Exercises*

In addition to treatment, physical therapy departments are usually called upon to perform tests related to treatments, primarily in relation to the progression of muscle strength and range of motion, response of nerves and muscles to electrical stimulation and sweat production.

In most hospitals, the physical therapist is also assigned the task of teaching transfer to and from a wheel chair, elevation, crutch

training and ambulation. Patients are also sent to physical therapy for improvement of posture, gait and the use of artificial lower limbs.

In fact, physiotherapy demands the active mental and physical participation of the patient. It further takes into consideration the function required to be performed by the patient.

In the rehabilitation set-up, treatment is aimed at the patient as a whole rather than at relief of pain locally or mobilisation of a joint. It needs to be planned in accordance with the total programme, taking into account co-ordinated efforts of other members of the team. The aim of physical therapy in the rehabilitation of the orthopaedically handicapped is restoration of function. Of course the most desirable end of any treatment is normalcy. If there is to be any permanent disability, then physical therapy aims to develop the best possible function within the limits of disability, so that ultimately the patient returns to life as well-equipped as possible for normal living in a normal world.<sup>20</sup>

In orthopaedic cases the use of active exercise is often more important than the application of various physical agents. Physical therapy begins as soon as possible after disease or injury. In surgical cases, exercises for strength and co-operation might begin even before the operation takes place.

### *Role of the Physiotherapist*

Although physical therapy as such, especially in cases of orthopaedic disability, is usually begun in the convalescent stages of recovery, the physical therapist should be a member of the treatment team from the very beginning, and should work with the other rehabilitation personnel. He then works with the patient to develop first the specific goals of increased strength and flexibility, and finally their co-ordination to achieve as complete an adjustment to the demands of daily living as is possible within the limits of his disability.<sup>21</sup>

The physical therapist plays an important role in physical evaluation which is supplementary to clinical examinations. When the physical therapist meets this patient after having received instructions from the doctor, he must first of all test muscular strength and joint mobility. This initial test is of utmost importance, both as a guide to treatment procedure and as a starting point from which to assess results and determine the measure of ultimate success. The tests

include manual muscle-testing, measurement of range of joint movement, reflex maturation and motor development charts, gait analysis, work analysis, measurements of vital capacity etc.<sup>22</sup> In addition to routine electrical muscle tests to assess impairment of nerve-muscle, tests to assess impairment of nerve-muscle function, sometimes electromyography and measurement of nerve conduction velocity are carried out. Using the test results, as a guide to his patients' needs, the physical therapist plans his course of objective and realistic treatment. If he finds stiff joints, he may use heat, hydrotherapy, or massage in combination with exercise to increase their mobility. For weak muscles specific exercises of many different types can bring an increase in strength. Perhaps muscles fail to function not because they are weak but because their nerve supply is impaired. In this case various electrical stimulations combined with massage and active exercise may bring the desired results.

The treatment may be either active or passive. The latter form, which comprises massage, baths, electrotherapy, heat and so on, precedes or alternates with active treatment which involves personal drill, machanotherapy, group gymnastics, games and competitive sports.

As treatment proceeds, regular repetition of the strength and mobility tests show the patient's progress, point out any difficulties, and indicate the needed changes. At intermittant stages it is possible to assess progress by subsequent evaluations. During the early days of treatment the physical therapist and the patient work for rather narrow goals: an increase of strength and flexibility per se. As these increase, the patient begins to see that the achievement of these smaller goals and their co-ordination will lead him towards the ultimate goal of functional self-sufficiency.<sup>23</sup> Now the physical therapist will test the patient's performance of 'activities of daily living': sitting, standing, walking, stair-climbing, opening and closing a door and a multitude of simple daily tasks unnoticed in the 'normal' world.

### *Training in daily living skills*

Retraining in the basic skills of daily living is primary to a process of rehabilitation. These activities are divided into three major groups: (1) Self care, (2) Locomotion and travel with appliances, and (3) Hand activities. Each of these is further sub-divided. Patients are classified into three groups: (1) Bed fast, (2) Wheelchair, and

(3) Ambulatory. Each group must be made independent within its limitation.<sup>24</sup>

The physically handicapped person must be retrained to walk and travel, to care for his daily needs, to use normal methods of transportation, to use ordinary toilet facilities, to apply and remove his own prosthetic devices and to communicate either orally or in writing. Apparently, these activities appear to be simple to an able-bodied person, but for the physically handicapped they may take months, nay, even years to master them.

Self-care as a rehabilitation objective is as worth-while for the severely handicapped as employment is for the less severely handicapped. In some cases, special devices made of aluminum or plastic are used to help the disabled person in his activities of daily living, such as combing hair, brushing teeth, holding knives and forks, writing and reading, ablutions, etc. There is also training in kitchen for house wives.

The need for braces, crutches, canes, even a simple lift on the heel or a shoe will be determined by the physical therapist in consultation with the doctor and other members of the team.<sup>25</sup> After the appliances are fitted, the patient must be taught to care for them and to use them to the greatest advantage. He must venture further afield, crossing busy streets, climbing on and off buses, operating a telephone, preparing a cup of tea, and so on. At first glance many such activities will seem impossible for him to accomplish. Each situation which the patient is likely to meet in his daily life, – whether he is a farmer returning to his fields, a worker to the mill, or even a child resuming his studies – must be analysed by the physical therapist and the other members of the team, and the best way of meeting it determined in consultation with the patient himself. The active participation of the patient in every step of his treatment is absolutely essential for his ultimate rehabilitation. He must be convinced that his success depends solely on his own efforts which are only guided by those of the team.

## **Occupational Therapy**

Occupational therapy literally means treatment by work. The American Occupation Therapy Association defines occupational therapy as “any activity, mental or physical, prescribed by physician for its remedial value”. According to a group of occupational therapists in the

Department of the Fairmont Alameda County Hospital, San Leandro, California, occupational therapy is the art and science of evaluating and facilitating independence in those persons with physical and, or mental dysfunction, through the retraining of skills of daily living and/or the development of new ones.<sup>26</sup> It is recognized by the medical profession as a valuable adjunct to recovery.<sup>27</sup> Occupational therapy is the term given to the use of activities of many kinds, for the distinct purpose of contributing to recovery from disease or injury or for the maintenance of function when complete recovery is possible.<sup>28</sup> It is remedial activity and is a medically prescribed programme aimed at improving mental and physical disorders by active participation of the patient under the guidance of specially trained persons - trained not only in arts and crafts but in pertinent health sciences.<sup>29</sup> The many basic aims of occupational therapy include restoration, improvement and maintenance of physical function - of muscle strength, muscle compensation, joint function, co-ordination, dexterity, posture, body mechanics and work tolerance. Physically, its function is to increase muscle strength and joint motion as well as to improve the general health; mentally its function is to supply normal activity as early as possible, through vocational projects.

Occupational therapy differs from other types of treatment in that the patient is himself doing the treatment, and not having it done to or for him. It is based fundamentally on the recognition of the treatment of the individual rather than of a disease or injury.

The aim of occupational therapy is usually divided into two parts, psychological and physical.<sup>30</sup> The first objective under the psychological needs of a patient suffering from some form of orthopaedic disability is to arouse the patient's will power, drilled by inaction and to aid him in adjustment to the disease or injury by relieving his mind of excessive worry (Diversional therapy). Examples of this need are in his initial adjustment to the injury and to aid in his realisation and acceptance of residual limitations, particularly of deformities or disfigurement and to help plan his home life or work so as to meet the needs of his limitations. To do this it is frequently necessary to motivate him to the desire to make the adjustments and to understand his frustrations and help to overcome them. At the same time the occupational therapist is helping to alleviate the patient's fears with regard both to his treatment (fear of surgery) and outcome, and help him have a proper understanding of what is being done both to and for him. Those patients who have the most difficulty

in adjusting to long-term hospitalisation or who become over-dependent on nursing care are to be provided with resources of interest and to have their abilities developed even in a small way. Two other objectives combine with the occupational therapist's first major one, and they are to explore the patient's abilities (skills) and aid him to realise that he has them, that he has the aptitude, comprehension, and interest which he has not recognised, and to aid in his adjustment to the post-treatment period when work habits must come back or be developed. The patient must be reassured as to social acceptance, job opportunities and informed about the availability of facilities for him.

Under the physical objectives are two primary ones - to aid the patient in attaining, maintaining or regaining desired patterns of movement in individual or several joints by stimulating wasted muscles and stiff joints (remedial therapy) and to aid the patient in planning for and achieving maximum physical independence. Under the first of these two, come such things as joint function, strengthening of weak muscles, increasing the power of good muscles to compensate for weaker ones, development of endurance and work tolerance and a full sense of his bodily movements. The occupational therapist will keep careful records of the patient's progress in these areas and report it to the physician along with the psychological problems of the patient. The second objective in the physical treatment by the occupational therapist covers such things as providing opportunities for the patient to make use of his abilities and directing him. It may be necessary to help him regain the ability to communicate either orally or in writing and also how to take care of his personal daily needs such as cleaning his teeth and feeding himself. It may become necessary to re-awaken his desire to work, and even to arouse interest in a new activity which may become the patient's future trade (vocational therapy). There may be need to give pre-vocational training and also explore physical factors such as work habits, manual dexterity, posture, endurance, muscle compensation, strength etc., which knowledge is needed for the total rehabilitation of the patient. The occupational therapist is to be an integral part of the team which works together to bring about a complete rehabilitation of the patient. Not all those objectives will arise in any one patient; but it is for the occupational therapist to work along any or all these lines as the patient's requirements indicate. Occupational therapy usually follows physical therapy but often both may be given together. Both the physical therapist and the occupational therapist work under the physician and with a prescription which may vary from a specific order

for strengthening a particular muscle to a more general need for exploration of deviations in body mechanics or for the discovery of abilities.

The occupational therapist also guides the patient in the efficient use of orthotic and prosthetic devices, especially the upper limb, and in the activities of daily living. He may be called upon to supervise the educational, vocational and recreational aspects of convalescent care. Evaluation of physical capabilities and correlation with realistic life goals by the rehabilitation team make it possible for the occupational therapist to outline and guide the patient in the prescribed direction. Although the occupational therapist may perform tests of perception, strength and joint range, his major goal is therapeutic and requires the use of such physical activities as arts and crafts but also other physical and intellectual pursuits.

In the early stages of rehabilitation, treatment may be individual and restricted to the patient's bed or room; later, group activity may be introduced to allow and observe interaction and encourage competition among peers.

### *Arts and Crafts*

The physical function of a disabled patient may be improved by the use of properly selected arts and crafts. The activity may be chosen to increase strength of the upper limbs, for example, by carpentry or gardening. Co-ordination and dexterity will gain from repetitive and increasingly finer handwork. Similarly, general strength, balance compensation, attention span, mental, visual and perceptual awareness, may all be improved by the use of adapted devices and equipment of sufficient interest. Each activity is analysed for its physical and emotional requirements and potential benefits.

Among the arts and crafts used in occupational therapy are weaving, leather craft, wood work, ceramics, needle craft and general arts. Eventhough a patient has some interest in a specific activity, it may not be therapeutic for him, and may, in fact, be detrimental to his progress.

### *Other Activities*

In addition to the usual arts and crafts there are many activities which may benefit a patient in the hospital or an out-patient clinic.

These may be divided into activities of communication, recreation and industry.

### *Communication*

There are many able-bodied people who find it easier to write with a typewriter than with a pen. For the child with cerebral palsy, an electric typewriter may supplement a halting and unintelligible speech – it may be his only means of communication.

Typewriting training should begin as soon as the potential for it is found to be realistic. Typing motions may be started in the motor-handicapped child as soon as he is able to match letters, provided that he has head and trunk control and is able to typewrite without supportive equipment. If there are perceptual problems training should be matched to their improvement.<sup>31</sup>

Some patients type best sitting, others while standing or even lying in bed. Not all will be able to memorise the key-board.

There are many possible adaptations. A stick to depress the keys may be held in the mouth, attached to a helmet or placed in a universal handle. For those with inco-ordination a key guard may be attached to eliminate striking the wrong key or keys. Special tables allow the typewriter to be placed in the most efficient position. Cotton recommends a table for cerebral palsied children with a recessed well for the typewriter. For those confined to bed, the central portion of the over-the-bed table can be raised. For those on their backs, the typewriter may be bolted to an overhead frame.

### *Music*

Most people enjoy music, the majority as listeners but a significant number as performers. In hospitals where patients are confined for a long period, some type of musical programme is desirable, and if the hospital is not large enough for or cannot afford to hire a full time worker in recreation or music, the task will often fall to the department of occupational therapy. The person assigned to music must be willing to cater to the tastes of different age and ethnic groups whose tastes are varied for music as they are for food and the satisfaction of other appetites.

Rhythm bands are popular with children and the mentally deficient. It is quite easy for such patients to operate and find enjoyment

in simple percussion instruments, bells, kazoos and other sound makers.

Farmer believes that musical games emphasizing rhythm and body parts improve ego development, attention span, group interaction and enjoyment when pursued for at least six months.<sup>32</sup> Group singing is enjoyed by all age groups and serves the greatest number of patients with the fewest personnel.

### *Games*

Games of all types and levels of sophistication may be used profitably in a hospital or out-patient programme. Card games, chess, checkers and puzzles may be used for eye-hand co-ordination, to increase attention span and to improve socialisation. Games requiring greater physical exertion may be substituted for part of the therapeutic exercise programme. Bowling and table tennis encourage good body mechanics and promote speed and co-ordination. Many games can be adapted for wheelchair patients.

Most games can be adapted to different disabilities. As skills increase through practice, confidence is established, activity tolerance is increased and the patient's interests are extended to other patients and additional activities.

### *Reading*

The art of reading enriches life as it orients the individual to the world in which he lives - the past, the present and the future.

Reading readiness tests given in the early phases of education are of prime importance in determining the future progress in education. They uncover skills and information for learning to read, such as visual and auditory discrimination, motor control, verbal comprehension, range of vocabulary and information.<sup>33</sup>

The therapeutic values of reading are great. In the treatment of the physically disabled, a wide variety of reading materials should be made available. The visually handicapped may need enlarged print or a magnifying glass; the patient with a short attention span, such as a patient after cerebral vascular accident, may need another person to stimulate him through verbal elaboration of short passages.

Reading may open new educational horizons and vocational goals within the new physical limitations. It offers mental stimulation

and participation where the patient may compete without regard to physical achievement. It assists in the development of "being" rather than "doing".

### *Activities of Daily Living*

The ultimate goal for all disabled people is to return to gainful employment, to maximal independence. Although this goal is possible for many, there are others for whom minimal dependence is a triumph, viz, those whose disability has deprived them of the ability to perform those simple, often automatic functions which are so basic that they are not appreciated until they are lost. They include such activities of daily living as personal hygiene, eating, dressing and other operations.

Evaluation and training in activities of daily living (ADL) should be carried out in an appropriate environment using suitable equipment and furniture to stimulate true life and practical home situation. The patient must perform the actual activity to know and prove that he does it.<sup>34</sup> If a patient is dependent in any activity area, the occupational therapist must determine what aids must be used to complete the activity. For example, a patient may be able to bathe, dress and feed himself in bed, but someone will have to bring the necessary items to him. Eventhough a patient may be able to ambulate within his home he may require someone to do the housekeeping and shopping.<sup>35</sup>

In teaching the activities of daily living, the members of the family as well as the patient should understand the techniques, the use of adaptive equipment, work tolerance, and safety precautions to be applied at home. All these exercises should be taken daily to maintain a maximum level of function. In progressive diseases such as multiple sclerosis, good handling based on daily observation will support the morale while function deteriorates.

### *Self-help Aids*

Many disabled persons become able or more able by the use of assistive implements which are called self-help devices. The device must be well designed, relatively inconspicuous and the patient must receive adequate training in its use. Some devices used early in rehabilitation may be discarded later. Unless contraindicated, the patient should be encouraged to take advantage of any devices which will increase his functional independence.

Some self-help aids are commercially available but quite often the therapist will design and construct part or all of the aid. This requires a good knowledge of materials, their weight, strength, flexibility, fatigability, corrosion tendencies and other factors which may determine design, cutting, shaping and ability to support. A knowledge of the tools used to make assistive devices is also important.<sup>36</sup>

### *Feeding*

It does not matter how gentle or considerate a nurse may be in feeding a disabled person; it is degrading and frustrating and the patient does not enjoy a meal as much as when he is relaxed or feeding himself. Many crockery items are available in adapted form and many tools may be custom-made.

The rocker arm knife is appreciated by those who are unable to extend or flex the shoulder but who have enough wrist motion to substitute rocking for the usual sawing motion. It is also useful for those with one functional hand since it eliminates the need for stabilizing food to be cut. Custom-made splints are also popular for easier food handling. The plate guard made of stainless steel may be slipped on to the side of the plate toward which the food will be pushed in an attempt to place it on the utensil. It is especially useful for the patient with limited supination, pronation and wrist mobility.

### *Work*

Most intelligent human beings are easily bored in the absence of occupation. Thus, it is to be expected that the hospitalized patient will experience a growing need for work as the acuteness of his illness or disability diminishes. Occupational therapy can play an effective role in restoration of this lost man power, because it is intimately concerned with the abilities of the disabled rather than disabilities. In this respect occupational therapy has an advantage over types of treatment because "work" is one of the dynamic media of treatment.<sup>37</sup> Restoration of the individual to work through judiciously guided work acts simultaneously both on the physical as well as mental health of the person. An injured industrial worker does not only need to regain lost range of movements of the joints or muscle power but also needs necessary work tolerance, morale and confidence to resume his work. This could be achieved within the minimum possible period if the patient is also given an opportunity for evaluation, treatment and

testing through suitable work media. The disabled person could demonstrate his readiness to return to the community through participating in work situations. The treatment involving suitable work will be much more reality-oriented. It acts as a bridge, filling the gap between uselessness and usefulness, between hospital and occupational situation of home, office or industry.

### *Intellectual Consideration*

In determining the work capacity of a disabled person, his educational or experimental background is usually of major importance. In general it may be said that severe illness or disability does not alter greatly the ambition of a person; a man who was on the way up before injury will usually want to resume his former condition for successful living after rehabilitation attempts. Although most persons may return to their former employment or place of employment after illness or injury, those who are severely disabled may require a new job which will call for new training. From the nature of an industrialised society, it is apparent that those workers most subject to severe trauma in dangerous and heavy work are more susceptible to disabling injury than more educated persons. It is common for those with severe disability to face up to the alternative of return to education and training or welfare status for life. Fortunately, a significant number of persons whose formal education ended at age 10 to 16 are able to profit from resumed education and vocational training.

### *Diversion*

One of the earliest uses of occupational therapy in hospitals was the prevention of boredom by the diversion of occupation. The diversional aspect of occupational therapy was the first to be recognized: "Occupational therapy is primarily a psychological treatment. Whether it is practised upon physical or psychiatric cases, its therapeutic value essentially depends upon the transference of the patient's focus of attention from a subjective to an objective centre. In all cases, the patient's interest must be diverted from pre-occupation with his disability and inadequacy to purposeful activity and achievement." <sup>38</sup> Diversional occupational therapy remains a fact of hospital life especially where the medical staff does not appreciate other therapeutic possibilities of activity. In such institutions, the patients seek occupation and request the physician to assign them to the occupational therapy department.

There is nothing wrong with occupational diversion for those patients who are physically able and must spend time in a hospital while waiting for some diagnostic procedure or the delivery of an artificial lower limb. The learning of new skills or constructive use of leisure time sustains morale, encourages socialisation and lessens hospital disciplinary problems. Diversional activities in the ward furnish opportunity for self-expression and encourages good work habits and the good habit of work.<sup>39</sup>

### *Prevocational Evaluation*

As the name implies, prevocational evaluation offers an opportunity to observe the patient at work, to determine whether he may resume his former type of employment and if not whether he may be suited to some other kind of work represented by the crafts, tools or services available in the hospital unit. There is not substitute for an actual work situation but the prevocational evaluation shop must strive to imitate as nearly as possible the atmosphere, requirements, frustrations, difficulties and conditions of real work.<sup>40</sup>

In the interest of saving time and buoying spirits pre-vocational evaluation should be started early, even while other restorative services are offered to the patient. In some cases this is not possible. Where an institution is large enough to have a vocational rehabilitation counsellor, he is responsible for performing psychological and other tests to determine the most suitable direction for the patient to follow. At or about this time, other members of the rehabilitation team are consulted, the social worker to supply information about the home situation and financial considerations and a placement officer to advise on likely jobs in the geographical area to which the patient will return. Appropriate members of the team combine to arrive at a reliable job objective based on such considerations as physical and mental capacities, social adjustment, work history, habits and interests, skills, and potential employability.

The occupational therapist is concerned with all of these to some degree. The therapist must know whether the physician considers the patient independent or whether he will be confined to a wheelchair or require crutches for ambulation and standing. The therapist can test gross and fine co-ordination, dexterity and general work tolerance. Skills may be assessed by noting the manner in which the patient follows instructions by observing the execution of the Tweezer Dexterity

Test, the Multiple Assembly Test, the Kent-Shakow Industrial Form-board Test and by evaluating the results of problems solving tests.

Most patients experience a psychological lift during pre-vocational exploration since the tests are relatively simple and completion is very gratifying. The fact that some effort is made to return him to previous employment or preparation for another, engenders confidence and responsibility.

The therapist, with the aid of the vocational counsellor, must engage in continuing community surveys to keep abreast of job opportunities and relate tests to them.

### *Objectives of the Occupational Therapist*

A Working Report published by the Scottish Association of Occupational Therapists (the Shaw Report) identified six clinical objectives which the occupational therapists must meet in order to achieve an adequate standard of patient care.<sup>41</sup>

1. Ability to assess patient needs and to plan and implement appropriate therapeutic programmes which will improve function, social competence and work ability.
2. Ability to assist the patient to develop substitute skills to compensate for loss of movement or special senses, and to overcome problems of perception, intellect and mood.
3. Skill in training or retraining patients in self-care or domestic activities and in finding leisure activities relevant to the limitations of specific disabilities and the age of the individual.
4. Ability to provide pre-vocational assessment and to contribute towards a normal development of the handicapped child.
5. Skill in the design, construction and use of simple splints and aids.
6. Ability to assist the patient and relatives in adjustment to hospital, to permanent disability and/or disfigurement or to progressive disability. It is the responsibility of the clinician to establish the medical and social status of his patient and clearly define the aims of treatment, and ensure that the concept of 'continuing patient care' becomes a reality. As has been stated by Nicholls in 1962, the occupational therapist is in the most suitable position to take

on "the essential function of functional assessments", this being an integral part of the rehabilitation programme and necessary for its efficiency.<sup>42</sup>

### *C. Prosthetics*

A prosthesis is the extension of any human organ to restore or improve its function when such function has been totally or partially lost through deterioration, disease, or trauma. The science of prosthesis is called 'prosthetics'.<sup>43</sup>

Within the new science, called bioengineering, prosthetics has become an important objective, based on the multidisciplinary approach. In its clinical aspect it is deeply rooted in orthopaedics and medical rehabilitation. A prosthesis is an artificial substitute for the lost limb. Prosthetic devices are composed of prefabricated parts and items, which must be produced and fitted in the clinic. The industrial part has become increasingly greater in recent years and the principle of modular prosthesis and orthosis creates or enhances the demands for national and international standards. In some cases, it is needed for the sake of appearance, such as a dress arm; in others, for the sake of morale that the disabled person may feel and appear like a normal person.

The recent advances made in the field of prosthetics have made it possible to substitute a lost limb by an artificial limb or support, and stabilize a paralysed limb by a brace or caliper. The fact remains that an artificial limb or appliance is essentially meant to make the limbless person mobile and active and to develop in him a sense of independence. By replacing the lost limb, a prosthesis serves to remove the psychological aversion towards the crippled and offset the prejudice of the employer.<sup>44</sup> Early records indicate that the Greek and the Roman soldiers had used peg legs.

The minimum requirement of walking is strong upper limbs, powerful back and abdominal muscles, long leg braces and crutches. This statement may appear incredible. But it is a fact that even children with both the lower limbs absent can be made to walk with the help of artificial limbs and crutches. The problem of persons whose lower limbs are paralysed either as a result of poliomyelitis or damage to the spine can be better dealt with. Persons having some power in one or both lower limbs should present lesser problems.

The materials generally used for the manufacture of the artificial limbs are willow-wood, leather, steel, plastic and aluminum. The fitting

of the limbs must take into consideration certain special factors like the height, weight, age, sex and occupation of the person as well as the length of the stump.

Prosthetic appliances fall mainly into two groups:

(1) Artificial limbs

(2) Braces, calipers, splints and corrective shoes.

## **Physical Medicine and Eye Diseases**

The eye is so accessible an organ that it lends itself readily to all forms of topical therapy. There must be few substances and agencies that have not at sometime been applied by the more credulous or adventurous eye practitioners in the history of mankind. It is then not surprising that most forms of physiotherapy have established their place in ophthalmology, and if the territory of the physiotherapist is becoming more and more restricted to the use of short-wave diathermy, it is a testimony to the very recent advances in other methods of ocular therapy rather than any reflection on the virtue of those physical methods that are now less widely adopted.<sup>45</sup>

### **Electrotherapy**

*Low voltage therapy: This may be used to activise cells, stimulate nerves, or transfer ions.*

1. *Electrolysis.* The passing of a current (about 2 milli amps) from a small active electrode to a large indifferent electrode elsewhere on the body is a familiar method of destroying the follicles of ingrowing eyelashes, and historically used in the treatment of detached retina.
2. *Galvanism* is alleged to relieve ocular pain and blepharospasm.
3. *Faradism.* Muscles that are mechanically embarrassed but with unimpaired nerve-supply may be exercised by means of Faradic current.
4. *Iontophoresis.* Ions may be readily repelled from the appropriate pole into any of the superficial ocular tissues in concentrations considerably greater than those that result from normal diffusion.

Iontophoresis is of particular value in promoting the following tissue effects.

- (a) As an astringent, zinc will often give relief in any indolent inflammation—blepharitis, conjunctivitis or keratitis, especially when oedema is prominent.
- (b) The halions can cause sclerosed cells to swell by hydration, and for this reason iodide iontophoresis has often been given to expedite the dissolution of corneal scars.
- (c) Specific effects include the introduction of antibacterial drugs for infective kerato-conjunctivitis, and the various autonomic drugs.
- (d) In painful eyes, especially associated with blepharospasm, calcium ions should decrease the excitability of nerve endings, and the anodal current alone has a slight analgesic effect.

5. *Acetylcholine* may be used retrobulbarly to antagonise various ischaemic conditions of the retina (retinitis pigmentosa), choroid (chorioretinal degenerations), and optic nerve (retrobulbar neuritis, central artery occlusion). The specific autonomic drugs can all be introduced in subconjunctival injection, and this is the best method for penicillin and the antibiotics generally.

6. *Calcium*. Calcium ions have been given empirically in iritis as well as in other more superficial inflammations to reduce the inflammatory exudate.

*High Voltage Therapy*: The high-frequency alternating current, as used elsewhere in the body has a considerable and a widespread importance in modern ophthalmic therapy. Apart from its use of "coagulation" or "cutting" diathermy in eye operations, its principal effect is that of causing an increase in heat which can be localised in the eye itself: the familiar side-effects of heating are capillary dilatation, relief of pain and metabolic stimulation. In addition there is a lowering of viscosity that is particularly relevant in the eye.

Wavelengths between 3 and 30 metres are generally used. It is said to give the optimum even temperature for the whole eye. They are administered by placing the eye in high-frequency condenser field,

or in a high-frequency electromagnetic field, from an adjacent insulated cable.

There are, however, certain risks in applying microwaves to the eye, and these have so far precluded their use in ophthalmology, since experimentally cataracts have been caused as well as corneal opacity and mydriasis. The treatment is usually given for ten minutes and repeated twice daily, daily or alternate days depending on the availability of the patient and the acuteness of the condition.

## **Actinotherapy**

### *General Ultra-violet Irradiation*

The use of general ultra violet light in ophthalmology is largely a general stimulant as in the case of ophthalmic foci of recurrent infections, of ophthalmic allergy from constitutional disease and of any chronic eye disease as a general metabolic stimulant analogous to protein shock therapy.

Of the various eye diseases that appeared in earlier years, particularly phlyctenular disease, blepharitis and iritis, the first has now become very rare both as a result of improved living conditions in the lower income groups and because of other more rational treatments due to a clearer knowledge of its aetiology. Blepharitis responds well to antibiotic applications and iritis to cortisone.

### *Local Ultra-violet Irradiation*

Local ultra-violet irradiation has a more specialised use in ophthalmology, and because of the greater technical difficulty of administering it and the greater risks involved, has enjoyed a much more restricted popularity.

It may be administered to cornea or conjunctiva simply by screening an ordinary mercury-vapour lamp. Alternatively, the filament of a gullstrand slit-lamp may be replaced by a small mercury-vapor lamp with quartz replacing glass in the condensing lenses and the head-rest being utilized for the patient, which allows more accurate focusing on an affected cornea.

### *Infra-Red Radiation*

This has little application in ophthalmology; it causes heating of the tissues, more penetrating than surface heaters, but less than

diathermy, and as such it is sometimes convenient for ward treatments. It has certain notorious effects on the eye that discourages its use.

### *Ultra-sonic Therapy*

As a further, and largely unexplored form of radiational therapy, ultra-sonic applications have been used as metabolic stimulants in removing the vitreous opacities after haemorrhage and in promoting resolution of chalazia. The principal objection is the risk of causing a concussion cataract which has been observed to follow such treatment in exercised eyes and since the physiological effects are apparently due to the heat generated, the established methods are normally preferred even where ultra-sonic generators are available.

### **Ocular Prosthetics**

Optical glasses are perhaps the most popular form of ocular prosthesis. Glasses are used as complementary to the optical lense in front of the eye ball to correct defects in the focussing of light on the retina. Concave lens, convex lens, concavo-convex lens are the major types of lenses used.

Lenses fixed in front of the eye ball within the eye lids are called contact lenses. According to the National Society for the Prevention of Blindness, U.S.A., they do not provide enough safety and protection in industrial job situations involving high risk.<sup>46</sup> Many younger persons with poor eyesight who would not wear glasses use contact lenses without hesitation. According to them they make the wearer look attractive.

### *Corneal Grafting*

The most significant development in medical rehabilitation of visual disability is the introduction of corneal grafting, or corneal transplantation or keratoplasty. Through operation, the opaque or white portion of the cornea is removed and replaced by a transparent piece of cornea of equal size and thickness from a dead man's eye.<sup>47</sup> The new cornea grows into one's blind eye and becomes part of it, thus restoring sight. It is just like having a pair of frosted glass replaced by a clear one. The supply of cornea for such operations must come from healthy human eyes which have been removed from recently deceased persons. In order to be able to use these eyes they must

be removed as soon after death as possible, preferably within two hours. If this is not done the cornea loses its transparency and becomes cloudy, and is then useless for grafting. If the eyes are not required for immediate use they can be chemically treated and stored for a considerable length of time. The removal of eyes from dead persons, their preservation and storage are the prime functions of an Eye Bank.

It may be interesting to learn that corneal grafting operations are resorted to for the following four main purposes: (1) for seeing (optical graft); (2) for wound healing (therapeutic graft); (3) for cosmetic purposes (aesthetic graft); and (4) for building of anatomical architecture of the damaged cornea (techtomic graft) prior to optical graft.<sup>48</sup>

The cornea can become cloudy or opaque from injury or disease thereby shutting out light and resulting in poor vision or blindness. The opaque window can be removed in full-thickness, and it can be replaced by a clear fresh healthy one from the cadaver eye within a limit of 72 hours and sight can be thus restored in many instances. The average results are varying between 30 to 35 per cent, but, in certain conditions, the results are encouraging – upto 75 to 80 per cent.

If the cornea is cloudy in only the outer layers of its thickness it can be replaced by a clear, healthy cornea of partial thickness to improve or restore sight. For this operation, fresh or preserved donor tissue can be used. This operation does not involve the full-thickness of the cornea but only the layers clouded or diseased. It is valuable not only in aiding vision but also in replacing corneas suffering from active disease which disables the patient. Corneal disease (Keratitis) is common today, especially from viruses (feverblister type disease) for which no medication would help. The average results in such conditions are between 60 to 80 per cent.

In complicated cases where the cornea is clouded involving the full-thickness, a full-thickness donor tissue is placed in the centre and half thickness at the periphery in a single piece in the shape of a mushroom. The operation involves complete removal of central portion of the diseased cornea, but at the periphery only the outer clouded layers are removed. It is valuable not only in aiding vision but also for replacing corneas suffering from chronic diseases and the sight is restored in 40 to 50 per cent of the cases.

## *Vitreous Implantation and Transplantation*

The bulk of the eye, from behind, is filled by a jelly like material called vitreous. Loss of this substance in persons with complicated detachment of retina (when the photosensitive layer peels off like wall-paper) can often be replaced by implanting or injecting healthy donor vitreous together with a sealing operation. This method may prevent blindness or often restore sight to blind persons.

In some other cases of blindness, due to cloudiness of the vitreous fluid from haemorrhages caused by injury or disease, the cloudy or muddy gel can be withdrawn and clear healthy vitreous can be transplanted, restoring vision in some cases.

### **Eye Bank**

It is an organisation formed to collect human eyes and to distribute them to hospitals where corneas are needed for grafting or transplantation. It also stores the vitreous fluid (jelly-like material in the eye) for use in retinal detachment operation or transplantation, as well as sclera (white portion of the eye ball) and conjunctiva (thin membrane over the eye ball) for use in cases of perforation of the eye-ball, tumours (unusual growth), actesia, burns, etc.

#### *Functions of the Eye Bank*

- (1). To educate the public on understanding the value of donating their eyes after death, and how to donate them.
- (2). Collection, laboratory examination, sterilization and distribution of donor eyes.
- (3). Preservation of this precious donor material.
- (4). Establishment of "Cornea Clinic" for registration, examination and investigation of patients suffering from corneal diseases.

Cases are classified into three groups for corneal transplantation:

- (a) favourable cases
  - (b) complicated cases
  - (c) incurable or unfavourable cases.
- (5). Performing the operation of corneal grafting and transplanting of other donor tissues.

- (6). Post-operative follow-up for observation and therapy.
- (7). Scientific research-experiments on animals to evaluate the donor material, new therapeutic drugs, improvement and modification of techniques of corneal grafting and instruments required for this purpose.
- (8). Eye Bank teaching programme to train surgeons in the art of Keratoplasty.

One of the main functions of the Eye Bank is to educate the public as to how they can generously donate their eyes at the time of death. Not only the cornea but other tissues from donor eyes are used for restoration of vision, prevention of blindness and in the repair of damage caused by injury. The eyes of donors will be received by the Eye Bank and distributed to surgeons in different hospitals (after laboratory examinations) for performing the delicate operation of corneal grafting.<sup>49</sup>

#### *What the Eye Bank does with Donor Eyes*

Fresh donor eyes stored in a refrigerator at 4°C to 6°C must be used within 72 hours after death, (preferably within 24 hours). Fresh donor cornea is generally used for elective surgery but, for emergency cases, this is not often available; therefore, the Eye Bank stores a good amount of donor material (cornea, vitreous and sclera) removed from the donor eyes for later use.

#### *Procedure for Donating Eyes*

There are three ways of donating eyes:

1. By signing eye bank donation forms or cards before death.
2. By signing consent forms or cards by the nearest blood-relative (next-of-kin) after death, such as father/mother, husband/wife, brother/sister or guardian, or by one in whose possession the body is.
3. By making a "declaration" by patients, on admission to a hospital, having no relatives to claim their body after death (destitute).

The eye bank will be able to carry on its sight saving programme only through the co-operation and sympathy of the public who have thoroughly understood the purpose and function of the eye bank.

To enable the eye bank to perform the function enumerated above, a nation-wide propaganda is necessary by way of a national educational programme through the press, radio, magazines, clubs, civil organizations, slides projection or by showing movies, etc., so that surgeons may never feel the want of donor material whenever they are in need of it.

## **Physical Medicine and Ear Diseases**

### **Electrotherapy**

Dr. Henry K. Puharich and Dr. Joseph L. Lawrence of Intelectron Corporation, New York developed a device to treat sensorineural hearing loss or "nerve deafness" by electrical stimulation through the skin. The patient wears a head-set with a pair of electrodes placed in front of and behind each ear. Then the therapist switches on amplitude-modulated, low-frequency radio waves.<sup>50</sup> A typical treatment lasts an hour and is repeated daily for a month. The improved ability to distinguish words and other sounds is reported to last for days or weeks after a series of transdermal applications and to be capable of maintenance by occasional treatments with a home unit.

### **Ear Drum transplantation**

Just as corneal transplantation in regaining vision, ear drum transplantation is being developed in restoring lost hearing. Ear drum transplantation is used in correcting auditory defect due to chronic suppurative otitis media (CSOM) or chronic discharging ear.<sup>51</sup> Since the naked eye cannot clearly see the inside of the ear and the operation has to be performed at a depth of 2.5 cms., micro surgery is necessary. The development of ear drum transplantation depends on the availability of ear drums. Establishment of ear bank on the same lines of eye bank is necessary. U. S. A. had its first ear bank only in 1970. The first ear drum transplantation in Asia was done in April 24, 1971 by Dr. Kakar assisted by Dr. A.K. Lahiri and Dr. N. Puri at Maulana Azad Medical College, New Delhi.

### **Surgery for Deafness**

Deafness is curable by modern microsurgical methods, provided the nerve function is good. The invention of the operating microscope has made possible a whole new range of operation for the restoration

of hearing to the deaf and for the cure of chronic ear discharge. For example, it is now a simple matter to close a hole in the drum or even to replace entirely a diseased drum. Fixed or damaged ossicles can be replaced and deep disease-causing chronic ear discharge can be eliminated with precision.

The normal ear consists of three parts: the external ear; the middle ear and the inner ear and auditory nerve. Sound waves entering the external ear cause the drum to vibrate. The vibrations of the drum are carried across the middle ear by a chain of three mobile bones to the inner ear, whence the nerve carries the impulses to the brain.

External and middle ear deafness is curable, but inner ear nerve deafness is not curable by operation. For example, if the deafness is due to a hole in the drum, we can patch it in an operation known as myringoplasty.<sup>52</sup> If the bones in the middle ear are destroyed by disease as in mastoiditis, they can be placed by an operation known as tympanoplasty; or if a bone is fixed as in otosclerosis, a teflon piston or a wire prosthesis can be used to replace it.

By giving a patient a hearing test known as audiogram we can assess his nerve function. It is possible to tell in advance not only the percentage of the hearing defect the patient has but also the probable percentage of improvement we expect after the operation. If the nerve function is good, the result should be excellent; and if the nerve function is moderate, a moderate hearing improvement may be expected. But if the nerve function is poor, surgery is not advised. About 30% of the cases are due to nerve deafness and cannot be operated upon.

## **Training of Rehabilitation Personnel**

At present, rehabilitation has two main problems in most countries. The first is the shortage of trained personnel in medical and non-medical disciplines in these countries and the second is the inadequate attention paid to the principles and practice of rehabilitation in medical education, all over the world. In order to improve the professional standards in the practice of rehabilitation medicine an expansion of education in medical rehabilitation process among doctors, nurses and medical social workers has to be brought about. Attempts should also be made to a much greater extent to enlist the co-operation of these medical and paramedical personnel.

As it is neither necessary nor desirable that all patients for whom rehabilitation is required should be treated by specialists in this field, undergraduate education is extremely important, so that the general practitioner can handle most of the ordinary cases. The aim of the medical curriculum is the development of attitudes that will enable the student to see his patient as a whole and the acquisition of specific knowledge and skills for diagnosis and treatment. In this way, medical education is essentially a social science, and the basis for this activity must be educational and not training.

Planned education of graduate students in rehabilitation medicine is of utmost importance. Future physicians must be trained:

1. to evaluate the functional capacity of the severely disabled persons;
2. to understand the physical, psychological, social and economical implications of residual disability and the relationship of these to long term rehabilitation planning;
3. to understand the treatment goals of various therapists and to become familiar with the major modalities used in physical medicine; and
4. to be able to understand the expected functional capacities of patients fitted with both prosthetic and orthotic devices.<sup>53</sup>

Specialists in physical medicine are the back bone in the organisation of physical medicine departments. They develop long term plans for rehabilitation of patients and give leadership through the multi-disciplinary approach in solving patient problems by mobilizing a team of applied science professionals.

### *Training of rehabilitation specialists*

Those who are entrusted with the training of the rehabilitation personnel should emphasize the following.<sup>54</sup>

1. Functional assessment with respect to the social situation, using the methods available such as goniometry, muscular tests, dynamometry and analysis of energy expenditure.
2. Creation of a proper physiotherapeutic and occupational therapy programme to prevent disability. The objective of this therapeutical

programme is the elaboration of all therapeutical possibilities to enable an earliest possible return to normal social life.

3. Creation of possibilities for application of artificial limbs and other orthopaedic and technical aids.
4. Analysis of the possibility of surgical reconstruction in case of deformations, contractions etc.
5. Supervision of the patient's training in the use of technical aids, to enable normal life and work.
6. Consultation with other medical disciplines, in order to introduce individual programmes of comprehensive rehabilitation as early as possible.
7. Consultation on education possibilities, at the hospital, in the school and in special organizations.
8. Consultation and supervision of vocational possibilities, and introduction of other techniques for the assessment of vocational capabilities.
9. Consultation on all the structural and technical barriers in the patient's social surroundings.

It is of primary importance that all practising doctors should acquire a greater understanding and knowledge of physical medicine. Since they are to guide and co-ordinate the work of auxiliary paramedical rehabilitation personnel, they should have a mastery of the concepts used in medical rehabilitation.

In developed countries like United States, Canada, Austria, West Germany and Great Britain, one notices a trend to include rehabilitation in the study curriculum of medical students. In all these countries, the thesis that a student cannot have a complete course in medicine if he is not introduced to the problems of rehabilitation has been generally accepted.

## **Organization of Medical Rehabilitation**

Socio-economic conditions vary considerably from one country to another. While basic principles of the practice of comprehensive

rehabilitation are applicable to all humanity, application of their components depends on local conditions, customs, beliefs, traditions, codes of behaviour, economy and climate. The approach to evaluate and to apply rehabilitation to persons in need (physically handicapped, chronically sick, fragile, aged and socially disadvantaged) cannot be prescribed. The achievements of one country cannot be copied by other countries. Each country evolves its own pattern of service. They plan programmes in relation to their total needs. They evaluate epidemiologically their priorities and available resources. Evaluation of their services should not be based on rigid indices or utopian ideas of planners. Relations between theory, hypothesis and practical delivery of service should not be disregarded.

The organization of medical rehabilitation requires a great deal of wisdom, professional-technical knowledge and sound judgment of facts. These must be matched by experience, intellectual honesty, and integrity of the personnel.

Progress must be maintained, with a balance between flexibility and stability. An erratic organization makes little real progress, but at the same time unenlightened stability crushes endeavor. Therefore the position and role of each member of the rehabilitation team such as Medical Director, Chief of Treatment staff, Physiotherapists, Remedial Gymnast, Occupational Therapist, Vocational Training Instructor, Medical Records Secretary, Medical Social Worker in the organization need be clearly understood.

In most countries, medical, surgical and rehabilitation facilities are available only in large cities. In developing countries a majority of the handicapped persons reside in rural areas and are, therefore, unable to make advantage of these facilities. The key to the rehabilitation of the disabled residing in rural areas is to bring the service to the patient's door-steps, for otherwise, however excellent the provision may be, they will certainly be unable to take full advantage of it due to financial stringency. The introduction of mobile eye clinics, E.N.T., as well as orthopaedic units, adequately equipped with modern rehabilitation facilities, and orthopaedic eye and E.N.T. camps manned by a team of experts who may investigate and treat patients on the spot, or remove them, if necessary, to nearby hospitals or rehabilitation centres, may prove helpful in doing the greatest good to the greatest number of the physically handicapped residing in rural areas.

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## CHAPTER X

# EDUCATION - GENERAL PRINCIPLES

### General Considerations

Education is a cumulative process leading to the total development and formation of a human person. Its purpose is not restricted to the intellectual development alone but aims at the integration of the physical, moral and social dimensions as well. Education is the means by which society socialises children in order to enable them to become its functioning members. It is through education that a child imbibes the culture of the community he belongs to and equips himself for a fuller and richer life in the community. It guides and strengthens him in his onward march for a 'good life'. This embodies the hope that every individual will, through education, participate freely in the social, economic, religious, political, aesthetic and scientific aspects of his culture to the limits of his capacity.

A handicapped child is primarily a person. He has to develop into a full-fledged citizen of his country. Therefore he has a right for education. "Proper education generally enables a disabled child to overcome largely his handicap, and makes him a useful citizen. Social justice also demands it. It has to be remembered that the constitutional directive on compulsory education includes handicapped children as well".<sup>1</sup>

According to a 1972 verdict of Joseph Waddy, the Federal District Judge of Washington D.C., the handicapped child has the same constitutional right to education as a child without any handicaps. The judge further observed that no child could be suspended from a school because of a physical, mental or emotional handicap in him.

No school could refuse admission to such children and be eligible for public funds in U.S.A. "The inadequacies of the school system certainly cannot be permitted to bear more heavily on a handicapped child than on the normal child". The same Judge ordered the Washington Board of Education to provide education for all children afflicted with physical, mental or emotional handicaps.

For a handicapped child education is a vestibule between medical and vocational rehabilitation. Many a physically handicapped child is called "stupid" merely for the fact that his 'intellectual capacity has not had a chance of expressing itself to the fullest by means of usual modes of reception and expression'.<sup>2</sup>

In certain cases disability retards the physical and mental development of a child. His mobility is restricted. He is forced to devote the most precious and rewarding early years of his life to hospitalization and treatment. He is devoid of opportunities to mingle with his peers and adults outside his home setting. He falls short of physical and social experiences comparable to those of his non-handicapped counterparts. A properly planned educational programme should help him to overcome these limitations. Further the education of the handicapped children must follow the law of compensation, i.e., the development of intellectual abilities to compensate for physical inadequacy.

The physically handicapped child is first and foremost 'a child'; he is a child with differences. He differs from the 'normal' in certain physical characteristics. In some, physical deviation directly or indirectly leads to differences in mental abilities, as well. These differences call for special adjustments and efforts on the part of parents and teachers. Special methods and techniques of education need be developed and adopted. In order to meet the special needs of these children special facilities such as a bus with a lift, building without stairs, attendants, hearing aids, embossed globes of the world, braille dictionaries, crutches, wheel chairs, standing tables, braille paper, audiometers, increased finances, specialized medical personnel, specially prepared reading materials, ramps, physiotherapy, speech therapy, and a variety of other materials and services may have to be arranged. In short, the physically handicapped children have all the needs of non-handicapped children and some additional needs according to the nature and extent of their disability. Special education must meet both these needs in its effort to bring these children 'to a maximum of their development

potential, and to prepare them adequately for a satisfactory life adjustment as adults who may also have differences.'<sup>3</sup>

Physically handicapped children are not a homogeneous group. They differ among themselves in the nature and degree of special defects as well as in their intellectual capacity and temperament. Moreover circumstances peculiar to each handicapped child often add to their individual variation and need. Hence the educational abilities and needs of each individual child must be evaluated and his educational programme should be made to conform to his actual ability and need. Any attempt to fix him in a programme formulated according to a stereotyped pattern and without reference to his special circumstances will only handicap his educational achievement. The education of handicapped children is not therefore to be limited to their adjustment in ordinary schools and to the provision of special schools. It should be ensured that at every stage of life, they are given the opportunity of living happily, richly and usefully in spite of their disability.<sup>4</sup>

Special education, like normal education is based on the concept of the whole child. Education must develop the latent abilities, whether physical, mental or moral. It is concerned not only with the development of the mind, but with the whole life of the pupil.<sup>5</sup>

Besides it is also the purpose of education to bring about a proper adjustment of the child to his social environment, "changing frustration into fulfilment and replacing partially or wholly what has been displaced by disease, accident or injury, cleansing soiled heredity and restoring non-normals to the greatest possible normality".<sup>6</sup> Education thus plays a vital role in the building up of individual and social health.

Frances P. Connor observes that education must be part of the child's total programme and it requires intensive integration to help him develop intellectually, socially, and emotionally as well as physically.<sup>7</sup> For comprehensive planning for each child, it is necessary to define as specifically as possible, the child's educational assets and liabilities, to attempt to determine causes of educational disability, and to search for methods of correction or compensation. Educational programmes with idealistic aims based on the realistic foundation of each child's physical and intellectual capacity will challenge to the maximum the endeavours of the total staff involved in education. The

team will look at the child's assets and, whenever possible, minimize his liabilities. A realistic assessment forms the basis of educational planning of the child by the family and the school. Early recognition of the child's capacities will lessen the future heartaches, facilitate satisfactory adjustment to permanent disability, and extend these capacities to the utmost.

Education for these children is dynamic in practice. Changes are to be expected as new medical knowledge evolves, as psychological implications are discovered, and as educational methods and materials prove successful.<sup>8</sup> Teachers are determining means for independent activity and recitations for the severely involved children and for including them in a class in school. They are seeking curricular changes to meet immediate and long-range needs of children. A programme different from what is generally expected in school must be prepared for children with defects of various kinds. Even this changing programme will not satisfy the more advanced thinkers; they will continue to seek the optimum educational facility for handicapped children.

Equality of opportunity for children who are disabled should be interpreted in terms of realization of maximum potential rather than in terms of time, effort, and financial expenditure necessary to reach these goals. Transportation, teacher-pupil ratio, and/or necessary extra services are some of the factors leading to increased costs.

The success of such an educational programme depends upon honesty and integrity in school functioning. Only children capable of benefiting from the activities offered should attend the programme. This facility should declare its objectives, draw up criteria for admission, provide as complete a programme as possible, and then carefully evaluate its effectiveness. Sympathy as a sole basis for admission is illegitimate.

In modern education, the collective and authoritarian methods of the past are replaced by techniques that take account of the interests of the particular child. "It is not the educator who puts new powers and faculties into man and imparts to him the breath of life. He only takes care that no outward influence will disturb nature's march of development. The moral intellectual and practical powers of man must be nurtured within himself and not from artificial substitutes."<sup>9</sup>

## **Educational Considerations**

The educational objectives for disabled children are as broad and varied as those for the non-disabled. Premium is placed on intellectual development, academic ability, and facilitating of the child's total adjustment to present limitations. In school, he must be aided in living better as a child and prepared to face the future squarely. The specific goals will vary in degree and emphasis from child to child. Therefore in planning both immediate and long range objectives, emphasis is placed on the efforts of a professional team composed of all persons with major responsibility for the care of the child. Frances P. Connor enumerates the educational objectives for disabled children as follows:<sup>10</sup>

### ***1. Intellectual and Academic Development***

Levels of intellectual maturity must be achieved developmentally. Self reliance, initiative and the ability to make choices are important to the disabled. Limited mobility and dependence on others make it necessary for them to learn to plan ahead. Acquisition of academic skills will be of considerable importance to the children. Through these skills they can increase their understanding of the world in which they live, and communicate more effectively. These children of limited motion, vision and/or speech problems may be forced to rely heavily on conversation and verbal presentation of ideas. For deaf children communication through visual methods must be developed.

### ***2. Fostering Physical Development***

The teacher of handicapped children has greater responsibility in developing good physical and hygienic habits in them. He has to work more closely with the medical staff to determine the amount and kinds of suitable activity and to learn the limitations and physical restrictions necessary for the child's well being.

### ***3. Promoting Emotional and Social Development***

Development of a workable self-concept in the child is an important objective of education for the disabled. A school environment conducive to mental hygiene will assist the child in setting realistic expectations and goals, in adjusting to the handicap which cannot be eliminated and in appraising his need for outside help. He will learn

to judge the time required for accomplishing a task and to prepare in advance for ventures beyond the confines of his sheltered school or home environment.

Adequate adjustment will be fostered also through opportunities for achievement and participation with handicapped as well as non-handicapped persons. Satisfying human relationships will tend to develop self-appreciation and a respect for others. These children will need preparation for the rebuffs and, often, open rejection of those who do not understand the disability nor appreciate the effects of the handicap.

#### *4. Moral and Spiritual Maturity*

In adjusting to physical disability, the need for moral and spiritual maturity may be even greater than for the non-handicapped. Value in terms of a personal code of ethics and philosophy of life will help these boys and girls appreciate the unique dignity of man, spiritual realities, and religious ideals. Consideration of others and sensitivity to their needs will inspire the child who is forced to receive help all the time from others to extend himself and derive satisfaction in helping others.

#### *5. Creating a better life today*

Children with limited physical function need skill in daily living-in living as a child. The school must encourage activities for creative expression in art, rhythm, music, dramatics, and handwork; social experiences and opportunity for personal development must be abundant. Establishing a balance of activity and an over-all pattern of living that consider timing, physical needs, and variety can be achieved with the aid of a skillful professional team, including sensitive parents.

#### *6. Preparing for future*

Education of disabled children must be planned with broad ultimate objectives in mind. First, a clear picture of future physical status will be important. Additional considerations and systematic evaluations will be made as the child grows. The prognosis expounded today may not be completely accurate 15 years hence, but it will serve as a guide to be altered as growth and other factors show their effects.

Adolescence may relatively be a more difficult time for children with physical limitations. Preparation for satisfying interpersonal relationships when boys and girls cannot freely go out and participate in games and group activities may require serious adult guidance. The question of possible marriage and family responsibility must also be faced. Living alone, a possible necessity, may be difficult. Yet, the school can help prepare the pupil for a happy and productive existence. Readiness for occupational placement will essentially be the task of the vocational counsellor, but teachers have responsibility for establishing good work habits, academic skills, and healthy interpersonal relationships necessary in the work situation.

Here again, the use of leisure time is emphasized for the worker not normally included within the working hours. The young adult who has community affiliations, pleasurable hobbies, or a store of creative resources will be a happier person and indeed a greater asset to his employer, family, and neighbours.

## **Systems of Education**

A survey of administrative plans in vogue in the field of education of the handicapped reveals that there exist two different systems - segregated and integrated. Segregation means isolation; the handicapped children are isolated from the 'normal' children and are educated in schools solely intended and planned for them. In most cases they are residential. Integration implies bringing together. In the integrated system of education the handicapped and non-handicapped are brought together under the same roof of a school to participate in the same or a similar programme of instruction.

The following are the various types of school programmes prevalent in different countries of the world: (1) the residential or boarding school, (2) the special school in a local community, (3) the special class, (4) the resource room, (5) the itinerant teacher or consultant, (6) hospital and home teaching.<sup>11</sup>

### *1. The Residential School*

The first schools for the handicapped were residential in nature. They were often called 'homes' or 'asylums'. The first school for the blind and that for the deaf established in Paris by Valentine Houy and Elepy respectively were nothing but asylums. This type of schools evolved from the sixteenth and seventeenth century 'foster homes'.

The earliest and leading schools for the blind and the deaf developed in England and other European countries as well as in the United States were segregated and residential. Other countries also adopted the same pattern. In India the first schools for the blind as well as for the deaf were started by missionaries from the West. They were, and still continue to be, residential.

**Reasons in favour:** The advocates of segregated and residential system hold that the facilities in these schools are of considerable help in developing the total personality of the handicapped child:

(i) All handicapped children from a particular region, district or a state, can be brought together in a single residential school or in separate schools for different categories. In any case these schools can follow and cover the same syllabus as specified for normal school children. The spokesmen of this system point out that in a 'normal' school the physically handicapped children are not usually encouraged to participate in co-curricular and extra-curricular activities, whereas in a school for the handicapped they are most generously encouraged.

(ii) Each child in a residential school is offered facility and encouragement to move about freely and independently. This in turn will enhance his sense of confidence.

(iii) In a special residential school for the handicapped there will be an adequate provision for special equipments, teaching aids and appliances, specially devised or adapted to suit the particular needs of the children. This is not likely to be the case in a normal school.

(iv) Physically handicapped children usually show certain mannerisms which are often related to the nature of their disability. In a residential school such mannerisms and other behavioural defects can be easily and conveniently detected and corrected in a friendly and informal way.

(v) In a residential school the number of children in a class is limited to an optimum. Hence individual attention to the students is more easily ensured.

(vi) Children in these schools get an opportunity to discuss freely the ways in which their seniors have overcome obstacles. Such discussions help them in tackling successfully their own handicaps with confidence.

(vii) Those schools provide for special extensive social training.

(viii) In a residential school the handicapped children always get the services of specially trained teachers, administrators and other competent personnel.

**Reasons against:** Despite the above arguments in favour of the residential special schools, this concept of segregation has been strongly criticized by many a modern educator. Even Dr. Samuel Gridley Howe, the founder of the first residential school for the blind in the United States viewed it as 'unnatural', undesirable and very liable to abuse.<sup>12</sup> These criticisms are based on certain vital and specific issues.

(i) The residential special school situation deprives the children of the socio-emotional satisfaction available in the natural and informal home and community setting. Children need the security of their homes, and this need is all the more intensified in the case of a disabled child. Handicapped children need contacts of a social nature with non-handicapped children of their own age. This is not possible in the residential school as there they are isolated from their non-handicapped peers. Eventhough such contacts can be purposely planned, they can never be on an informal basis and in a natural setting.<sup>13</sup> Wardens or matrons can never take the place of true parents. The emotional climate of the residential school normally cannot be as rich and as meaningful as that of the child's own home. In spite of the excellent attitudes of numerous residential school administrators, the best residential school must of necessity contain elements of discipline which are more intensified than in the child's own home. In accepting a child into the residential school, the school personnel must assume responsibility for his health, personal safety and education. Thus, a certain degree of uniformity and regimentation is a necessity as residential school administrators and teachers work with groups of handicapped children. This is often verbalized by handicapped children as being one of the distasteful necessities of residential school living.

(ii) Closely related to the disadvantages discussed above is the stigma which is often associated with institutionalization and which carries over to the residential school. References to the "blind school" or the "deaf school" are often heard. The emphasis is herein placed on the disability rather than on the child. The isolation of the exceptional child by reference to his handicap is objected to by both the child and his family. Residential school placement intensifies this stigmatization in the minds of many of the children who are enrolled in them.

Unfortunately, some popular novels have intensified the worst features of the residential school, and this has only served to degrade the image of such schools.

(iii) A third criticism of the residential schools relates to the quality of teaching staff and to curriculum development. It is often said that residential schools do not compare favourably in these matters to the ordinary schools because it is rare that the former have all the professional services which are available to the latter. Further, because of the geographical isolation which often characterizes the location of the residential school, opportunities for in-service training and professional growth for the teaching staff are limited. Psychological and psychiatric services, social case-work services, guidance and counselling programmes are often lacking in the residential school system. The standard of training given to the teaching staff is likewise frequently not comparable to that available to ordinary school teachers.

**Improving residential schools:** Despite their many drawbacks the residential schools have rendered considerable service to thousands of handicapped young people. To make the residential school system more effective certain improvements should be made. First, the administration of residential schools, if not already so, must be placed under the jurisdiction of the educational body of the State, that is, the State Department of Education. The expertise of the Director of Public Instruction and the resource personnel of the Department should be as available to the residential special school as to the ordinary school. Training of staff and their standards of teaching should be similar to those offered in ordinary schools. There must be adequate budgetary provision for ensuring better scales of pay for the regular staff and to get the services of specialized staff in the fields of medicine, social work, psychology and guidance. Extensive programmes of socialization with nonhandicapped children must be developed to the point where there is a continuous relationship between handicapped and non-handicapped children. Finally, the residential schools should develop special programmes in which they can make unique contributions.<sup>14</sup>

There is a great need for programmes for the multiple handicapped child. The blind mentally retarded child and the deaf mentally retarded child should become a major responsibility of the residential school. In most countries there is hardly any specialized institution taking care of the needs of these categories of children. They are usually mingled with the major categories such as the blind, the deaf and the mentally retarded. Highly specialized teaching personnel will be required for such groups of multi-handicapped

children. The need is great. Because of the small number of such children in a given community, the ordinary schools are probably not the best agencies to meet this need. The residential schools, with an expanded psychological, counselling, and psychiatric staff, could meet the needs of the emotionally disturbed blind child or the emotionally disturbed deaf child. The specially trained personnel serving them should have a high degree of competence in their speciality and in their knowledge of the deaf or blind.

Two other important questions regarding residential schools are: (i) Do they maintain the closest possible link with the pupils' parents? (ii) Do they provide the vital emotional and psychological stability which children who have been separated from their parents require, whatever the reason for the separation may be?

It is absolutely essential, except in certain extreme cases of parents with serious psychological problems, that residential schools do all in their power to maintain a close and cordial relationship with the parents. This would help them to understand the aims of the school and needs, both general and special, of their handicapped children. It is equally vital that they provide not only a good education but also a warm and stable atmosphere which will meet each pupil's deepest emotional needs during the periods of his separation from his parents.

Moreover, residential schools, whether Government or private are directly responsible to the public in ensuring that the limited funds which are channelled for their maintenance are used wisely for the maximum benefit of the pupils.

It is commonly known that the education of the handicapped is a relatively expensive programme. This fact should not in any way discourage the state or the community in providing the handicapped children with the best services possible. Each country should take pride in giving high priority to these services for the handicapped who have an equal right to everything which is available to other citizens in the country and who, if not helped initially, become a burden to their families and to society.<sup>15</sup>

## *2. Special Day School*

The transition from the residential school to the special day schools in the local community started in the United States, immediately

prior to World War I. Numerous cities began the development of local programmes for handicapped children. Two factors were chiefly responsible for this extension of special education. Firstly, cities had grown to a sufficient size to make special education programmes feasible. Secondly, parents began to urge that their children be educated at a point nearer home. Therefore educators began to search for ways in which exceptional children could be educated in the local school.

**Two types of special schools:** In U.S.A. there evolved two types of special schools:

(i) Those serving a single category of disabled children only.

(ii) Educating different categories together.<sup>16</sup> Even in the latter type each category is taught in separate classes. In such schools the entire staff is professionally prepared to seek solutions to the particular educational problems of the children being served.

**Advantages:** The special school has the advantage of keeping the child in his own home and in association with his parents, siblings, and his non-handicapped neighbourhood friends. Subject to the limitations imposed by his physical disability the handicapped child is permitted the freedom of the community as in the case of all children. Thus in a local special school, the life of the handicapped child would go on in a much more normal way than when he is in a boarding school situation.

Another advantage of the special school in the local community is that with good public relations, the professional skills of many members of the community can be brought to support the programme of the special school. The services of many specialists in the medical profession, psychological services, the facilities of community agencies and hospitals can be mustered and organized into an effective programme for the rehabilitation and education of the handicapped child. Furthermore, the school centered-services of guidance and counselling, health, and related specialities can be provided to the school for handicapped children as a part of the normal educational administration. The children in the special school and the teachers who work in the school can have at their disposal all the professional consultative and supervisory assistance which is made available to all the children of the community. Thus a rich educational experience can be provided. Teachers of exceptional children are stimulated to

continued professional growth; easy exchange of ideas can take place, materials and equipments which might otherwise be not available to handicapped children are available because they are provided to all children. The special cultural events and activities of the community which are available to everyone can be experienced by handicapped children living in their own homes.

Special schools where normal children are also admitted can achieve under good educational leadership an even greater number of the positive features described in the preceding paragraphs. In such schools both handicapped and non-handicapped children share all common experiences. They quickly come to appreciate the limitations and capacities of each other. An experience which broadens the life of all the children can readily be provided. The teachers of the handicapped children also profit, for they are continuously able to observe the activities and achievements of normal children and, thus, maintain a positive perspective regarding normative growth and development as they work with handicapped young people.

**Disadvantages:** The special school in the local community which serves only handicapped children has some of the same disadvantages as the residential boarding school, although not in the same degree. In the special school the handicapped children have only infrequent contact during the school day with their normal peers. This, however, is offset in large measure by the possibility of contact with normal children on an informal basis during the after school and weekend hours in their neighbourhood. On the other hand, there is an undeniable richness to the life of a child in the ordinary school which is obtained through the continuous contact with friends in the class room, the dining hall and on the playground of the school. The handicapped child in the special school is deprived of valuable informal experiences of this kind.

Moreover special schools are costly, as they need specifically qualified teachers, special building construction, special techniques of instruction and special equipment to suit various types of disabilities.

A major defect of the community special school system is that the general educators can easily avoid their responsibility by referring to such a school, a child who in reality, with minor educational adjustments, might just as well have attended a school for non-handicapped children. This is particularly true if there is not a very careful policy of admission and selection established for the special school.

However the disadvantages outweigh the advantages of the community special school as one considers it in comparison to the alternative of a residential school.

**Functions:** The community special school, like the residential school, has an important and highly specialized function in the total educational system. Its purpose is to meet the needs of seriously disabled children: (1) who are judged to be unable to cope with the normal school situation by reason of their differences; (2) who require a sheltered environment; and (3) who require specialized equipment for treatment or education that is too costly for decentralization. Not all exceptional children need a special school any more than they need a residential school. Only those who meet the rigid standards of a well-developed selection policy should attend a special school. Thoughtful educators always must ask themselves an important question: Can the special school realistically meet needs of this child which would remain unmet in any other type of school situation? An affirmative answer thoughtfully given will result in a special school which operates within the best of contemporary educational philosophy.<sup>17</sup>

In most countries, special schools are founded in big metropolitan cities where a large number of such children live. A special school cannot easily be organized in rural communities where there may not be sufficient number of such children.

The provision of special schools depends upon two factors: (i) The ability of a particular community to pay the necessary high costs required for special schools. Economic considerations demand that the number singled out for special schooling be kept as low as is compatible with communal resources. (ii) The need of the child for specialized attention.<sup>18</sup> This is always a matter of degree. For children who are handicapped in multiple ways, the provision of special schools must be made. For many children who are handicapped in more than one way, education in the usual surroundings means daily experiencing of failure and consequent loss of self-respect and self-confidence. They must, therefore, be given at least a beginning in the sheltered surroundings of a special school. In the case of many a child, special schools are invariably deemed as feeding institutions to prepare him for a regular school in due course. If a child is oversensitive to his disability or his helplessness, he may need for his mental health, sometime in a special school which would provide him with an

environment, where it is normal to be a disabled. To be with others who are more handicapped or as handicapped as himself will save him much of that embarrassment that would otherwise be caused by the attitude and funny remarks of his able-bodied class-mates in an ordinary school.

Special schools for crippled children should, however, provide facilities for frequent mixing of crippled children with regular school children at parties, picnics, debates, games and entertainments. It should be remembered that crippled children will have to live most of their lives constantly rubbing shoulders with normal human beings.

### *3. The Special Class in a Regular School*

The special class is composed of a group of handicapped children of a given classification that is located in a regular elementary or secondary school. There may be only one such class in a single school or there may be several special classes. The number may be increased to the point where the programme may resemble a modified form of special school as mentioned in the preceding pages.<sup>19</sup>

The underlying philosophy of the day school classes has been to adjust each handicapped child individually to the regular class curriculum, to supplement instruction in such areas as might be required to accomplish well rounded progress on the part of the child, and to keep in mind constantly the fundamentals of educational adjustment to the end that at the conclusion of his school career the child may not only have met the scholastic requirements but as well have made satisfactory adjustment in his emotional and social life.

Since the establishment of the first public school class for blind children in Chicago under the direction of John B. Curtis in 1900, the movement has grown steadily, though not rapidly. The movement represented a new trend in the changing philosophy of the education of the handicapped. It also had its impact on accepted procedures in the education of handicapped children in residential schools. It was in the education of the blind that the special class system was specially tried out. The day school plan made the child an integral part of the public school system of his own community. He was one in a class of five to ten pupils placed under the direction of a teacher trained to give specialized instruction in braille, typewriting, craft-work, and other special subjects necessary or desirable in the instructional curriculum

of the child. He participated in the regular curriculum of the class where the school was located, attending the regular class for that portion of his work in which, through his own study or with the assistance of his braille teacher, he was able to make sound educational adjustment and progress in competition with his sighted classmates.

A number of residential schools began sending some of their high school students to the local ordinary schools, providing reading service for them and supplementing their daily programmes with additional instruction at the institution.

In part these changes merely reflect an adaptation on the part of residential schools to a change in the attitudes of thinking people toward institutional care for children, a more universal appreciation of social factors in education, and a general broadening of their educational philosophy. The general conception that institutional care should be substituted for life in the family and the community only as a last resort has been gaining ground in the social treatment of persons of all ages. Indeed, the day school movement itself was an out-growth of these changes.

Side by side with the development of the day school movement, and to a degree responsible for it, has been the increased interest which educators have manifested in meeting the particular needs of special groups of handicapped children. In addition to classes for blind and visually handicapped, classes for the deaf and hard of hearing, crippled, slow learners, those suffering from speech defects, and for those with lowered vitality have gradually come to be considered essential to a comprehensive school programme.<sup>20</sup>

**Advantages:** The special class can be nearer to the majority of children than special schools. This solves the problem of transportation of children from long distances to a special school. The special class is cheaper than erecting and maintaining a separate building. "The special class may take on varying forms related to the degree to which the children are integrated into the total school programme". The chief advantage of the special class is that it brings handicapped children into close proximity to non-handicapped children, while at the same time providing for those children elements in the educational programme which regular class placement cannot effect.<sup>21</sup>

**Disadvantages:** Segregation is often considered a negative aspect of special class approach. On the one extreme the special

class may remain the major location of most of the children's activities. The children are carried on the register of the special class. They have few contacts with the remainder of the school programme. This isolation is sometimes warranted, but the goal should be to promote contacts with all children as frequently and as appropriately as possible. From this extreme it is possible to see all degrees of integration to the point where the special class actually becomes a resource room.

#### *4. The Resource Room*

The resource room has been developed in an effort to seek a solution to some of the criticisms of the special class approach to the education of disabled children and to achieve more fully an integrated experience for handicapped children. The resource room involves the presence of a special education teacher located in single school building. However, he serves the children only in those specific ways in which they need help. For example, a partially sighted child may need special assistance in reading. For this the resource class teacher would be used. The blind child might need additional help in braille writing or reading. The resource teacher would perform this duty. While this technique has been used most widely with blind and partially sighted children, it also has been used with the deaf, the hard of hearing, and other groups of physically handicapped children.

The resource teacher should also perform other important functions. He should be in constant contact with the other teachers in the school who serve handicapped children to be certain that the needs of the child are understood by the regular teachers and to see that the regular teachers have the teaching materials available which they need while working with the handicapped children.<sup>22</sup> The regular teacher cannot be expected to know everything that the specialist knows about a given type of disability. The regular teacher can be expected to participate fully in the education of handicapped children if he has available resources of a specialist and special teaching materials to work with. The Resource Room experiment originally initiated in the U.S.A. has now come to be accepted by educational experts and governments in many countries of the world. The resource room is closely related to what is often referred to as "the integrated plan". Here the handicapped child is carried on the register of the regular class room teacher. The allegiance of the child is to the regular class, to his physically normal peers, and to the teacher of the regular class. Available to the teacher and the child, however, is the

service of the resource teacher. At other times the handicapped children are carried on the register of the resource room and participate in the regular class to the limits of their ability. Many of the limitations as well as the advantages of the resource room are also inherent in the plan known as the itinerant teacher programme.

### *5. The Itinerant Teacher Programme*

This programme is "one in which the handicapped child is enrolled in the regular class in his home school where his needs are met through the co-operative efforts of the regular teacher and those of the itinerant teacher qualified to offer this special service".<sup>23</sup> This statement stands with equal accuracy for any handicapped child who can be so educated.

The itinerant teacher is a teacher qualified to supplement the work of the regular classroom teachers, namely, to provide individualized instruction to the children, to offer consultation to staff and community to develop needed skills and to furnish materials and specialized equipment — all of which may be necessary to enable handicapped children to receive their education with non-handicapped children in their total school districts. The very title of this position suggests that this teacher must develop a constructively planned itinerary which helps him to meet the individual educational needs of the handicapped children and conserve his time and energy in bringing this important service to various communities. Obviously, in order to fulfil this role, the itinerant teacher must be not only creative and flexible in planning and teaching but also physically capable of meeting the daily demands and strains inherent in providing this kind of educational service. His duties are closely akin to those of the teacher of the resource room. Indeed, the functions of the two teachers are very similar, except that since the itinerant teacher goes to the child in the regular school, he may serve more than one school. The resource teacher rarely serves more than one school. Defined for the partially sighted child, the itinerant (or contact) teacher plan is one "..... in which the children remain in their regular class rooms and are there brought special assistance through the visiting special teacher who advises and assists the classroom teacher and often works with the child in a more or less tutorial capacity."<sup>24</sup>

The integrated plan as practised in the resource room and the itinerant teacher programme has been most widely used with the

blind child and the partially sighted child in the public schools in the United States. These approaches have not gone uncriticized. The chief criticisms, however, have come from those who are ardent advocates of other forms of special education. To date there is no research to demonstrate the ineffectiveness of the resource room or the itinerant teacher plan.

If teachers, administrators, and supervisors have proper orientation to the special needs of the handicapped children, and know how to intelligently utilize the itinerant teacher, and if the itinerant teacher himself has a working philosophy regarding his function, full utilisation of teacher personnel will be ensured. The addition of a handicapped child to the regular class will be accepted by the general educator, if a proper understanding of the handicapped is inherent in the latter's educational philosophy. Oftentimes school people have misused the concept of integration and placed several handicapped children with different types of disability in a single regular class. This is unsound and is not in keeping with the ideals of the integrated, resource or itinerant plans. A sound programme of pupil assignment would limit the number of handicapped children in a single classroom to the minimum possible.

In discussing the role of the itinerant teacher of the blind, the National Work Session participants of the American Foundation for the Blind report that the itinerant teaching programme poses a great challenge to the administrator who is responsible for the development of the programme and the selection of the teacher who functions in the various local schools that co-operate in the programme. Perhaps there is no teaching position that provides a person with more opportunities for rich contacts with such a number of varied individuals and groups including families, general and specialized agencies, various types of schools, general civic and social community groups than that of the itinerant teacher.<sup>25</sup>

It must be emphasized that the itinerant teaching plan is not advocated for all disabled children. When mental retardation is the primary disability, multiply handicapped children would be excluded from the itinerant teacher plan. Unfortunately, there will also be many deaf children whose communicative skills are so limited that integration into the regular class, even with the support of a competent itinerant teacher, would be inappropriate. Many crippled children too cannot be integrated into regular classes.

The definition of tutor in this instance does not imply correction of a deficiency, but incorporates the British notion of a tutor as being one who assists the student to explore fully his field of interest and to constantly broaden his horizon of experience. Such a person comes very close to meeting the definition of the itinerant teacher as described above.

It has been suggested earlier that the concept of integration and of the itinerant teacher plan has been opposed by some educators. Sometime this opposition has a realistic basis involving such factors as great distances between schools where handicapped children might be integrated, the lack of ability of some teachers to individualize instruction to the extent of meeting the basic needs of the handicapped child, or the inability to obtain necessary specialized teaching materials because of legislative restrictions.

**Evaluation of the Integrated System:** The Handicapped child will be isolated because of his disability from the rest of the children in the classroom. While this statement is true in so far as mentally handicapped children are concerned, it has no basis of fact with respect to physically handicapped children.

Cruickshank, Albert Wiberley, and Linden D. Summers, in a study, investigated the social acceptance of 29 crippled children by their physically normal peers.<sup>26</sup> These children were distributed in 28 class rooms and represented children with a wide variety of visible physical disabilities. Sociometric tests were administered to all of the children in the 28 classrooms. No statistically significant differences were obtained regarding social position in the classroom when the physically handicapped children were compared with the physically normal children. The factor of the presence of a visible physical disability was not the basis on which the handicapped child was rejected or accepted by his peers. Apparently subtle personality factors were the basis upon which children were selected as "stars" or rejected by the social group, and these were unrelated to the physical status of the individual. Force has demonstrated the same finding in a study involving a much larger group of children. Soldwedel and Terrill likewise point out that ".....physical disability appears to have no significant relationship to choice by pupils of other children to sit by in a class".<sup>27</sup> They also state that the "choice of children to take home to a party appears to be unrelated to the factor of disability". The success or

failure of a programme of integration is not founded on factors inherent in the physical disability. It is founded on matters of orientation of general educators, the personality of the itinerant teacher, and the availability of specialized materials.

## 6. Hospital Teaching

Most of the orthopaedic disabilities, as for example, poliomyelitis, tuberculosis of bones, and traumatic injuries require long periods of hospitalization. Children suffering from these disabilities must be taught during this time, or they will lose years of schooling at a time when they can profit from it most. Children in hospital schools generally undergo intensive medical treatment. Education of these children must, therefore, be properly adjusted to their treatment. In a ward, children will not be of the same age group, although, they may be of the same type of disability. Sometimes two or three classes are to be conducted in the same ward. In spite of these hazards, the hospital school succeeds in fulfilling its primary function of educating the bed-ridden child and giving him a sense of worth, besides eliminating the boredom that idleness causes. Such a school is easier to organize in a large children's hospital rather than in a small one.

In the past, the purpose of hospital schools was considered to be mainly diversionary. Children were taught crafts to forget the monotony of hospital life. The teacher in a hospital school has to be much more than a mere tutor. He has to educate children not only in the three R's, but also give them emotional poise, by creating an informal atmosphere. He has to make up for the home surroundings that the child misses in a hospital. Individual work rather than group teaching is more advantageous in hospital. One drawback of the hospital school is that in many cases the hospitalized child lacks initiative, because of the lack of contact with home and the outside world. Another difficulty is that there are bound to be some gaps or repetitions in the education of the bed-ridden child, if proper care is not taken to avoid them. Education can be progressive and continuous only if each new teacher proceeds from the point where the last one left off.<sup>28</sup> The Education Act of 1944 (U.K.) stipulates: "Whenever a pupil ceases to attend an institution and becomes a pupil of some other institution or place of education or training, particulars of his medical and educational records shall be supplied to that other institution or place".

In Japan, there is a special type of institution called "Hospital-and-Home" - for crippled children. It is a type of centre designed to provide integrated services of rehabilitation, including orthopaedic surgery, physical and occupational therapy, social service, school education and pre-vocational exploration. These centres are established by National Prefectural Funds on a fifty-fifty basis.

## *7. Home-Teaching*

Home teaching is provided to children who are so severely disabled that they are unable to go to a normal school for some time after their discharge from the hospital or in some cases, even for ever. Home teaching is generally provided by the local authorities or voluntary organizations. It is difficult to organize because such children are likely to be widely scattered, and further, because some of these children may be so physically incapable that some other person must turn the pages, or read or write, for them. One great difficulty for home teaching is securing of teachers. Teachers of ordinary schools cannot be burdened with this sort of specialized coaching at home.

In the United States, a unique system of education has been organized for the home-bound child. A school to home telephone arrangement has been made. There is a two-way inter-communication system between home and classroom. This not only permits the student to continue his studies, but also imparts to him a sense of belonging to his class. The home-bound child must be kept in contact with normal pupils.<sup>29</sup> Summer camps, variety programmes, pen friends, discussions etc., are very useful in giving him opportunities of mixing with normal pupils. Another instrument of great value to the home-bound children is the use of radio and television for teaching purposes. Home teaching for the blind is being introduced in several countries. A fully qualified teacher of the blind goes round visiting the blind children at their homes helping them to learn braille and other skills to cope up with blindness and gives proper information and guidance to their parents and relatives enabling them to cope up with the special needs of the blind child.

Several plans for the education of handicapped children have been delineated, that is, the residential school, the community special school, the special class, the resource room, and the integrated plan involving the itinerant teacher. No one of these educational arrangements is satisfactory for all children, nor is it implied that one

plan is better than the others for all children. Certain of the plans may be more satisfactory to certain children. One plan may be best for a given child that too at a given time or level of development. It is well to note these facts and to determine the basis on which a decision regarding a given child is made and ascertain who makes the final decision.<sup>30</sup>

## Selective Placement

Selective placement involves "the careful and complete assessment of the abilities and limitations of the child, his home, and community by professionally qualified persons representing numerous disciplines and the ultimate joint recommendation of an evaluation team regarding the optimum educational placement in terms of the realistic opportunities which present themselves".<sup>31</sup>

It is not possible to make an 'a priori' judgment as to educational placement for a physically disabled child without first obtaining a complete assessment of the characteristics of that child. This will mean different things for different groups of handicapped children. For example evaluation and assessment of the blind child will not only involve a complete physical examination by a competent ophthalmologist, but also a full examination of hearing and speech. This is important since so much of the blind child's adjustment in any school situation is dependent upon his hearing acuity and his communicative skills. In addition, however, the educator of the blind child must have a thorough knowledge of the physical condition of the child. Thus, a paediatric examination is indicated. A psychological appraisal of personality and intellectual characteristics is also essential to an adequate decision regarding educational placement.

In addition to the paediatric and psychological examination which are important for all handicapped children, the child with a hearing impairment will require assessment by an otologist, an audiologist, and a speech pathologist before realistic educational placement can be reached.

It must be pointed out that paediatric and psychological personnel may not have had experience in the assessment of children with special physical disabilities such as blindness or deafness. Thus, it is well for these professional specialists to perform their examinations in the presence of or in close relation with other professional personnel

who do know the specific disability. When this is done, it is possible for those who know the disability type to interpret the impact of the disability on the paediatric or psychological status of the child and thus assist the paediatrician or psychologist to appraise realistically what is normative growth and development on the one hand and what growth deviations may be due to the disability on the other.

The child with cerebral palsy represents a very complex problem in psycho-physical diagnosis. With this child a complex team of diagnosticians may be required before adequate final decision can be reached. Such may include the paediatrician, the psychiatrist, the neurologist, and the psychologist. The team may also include the ophthalmologist, the otologist, and the social case worker. It will also include the physical therapist, the occupational therapist, the speech therapist, and the educator. This same group of specialists may likewise be involved in full or in part in the assessment of children with epilepsy, children with aphasia, and nervous system disorders but without motor diagnostic problems and resultant educational problems. Logical educational placement cannot be effected without the careful appraisal of a complete diagnostic team. It is obvious that many communities will not have all these facilities available. The statement still stands that logical placement in schools cannot be effected without adequate appraisal by the required specialists. There is no possibility of compromise. Until such is achieved, errors are going to be made in the placement of children in educational programmes, and handicapped children are going to receive less from educators than is their right.

A number of professional specialists have been mentioned as being important members of the diagnostic team. Each of these individuals has important functions to play, and each may be in a position to make significant contributions towards understanding the child. Another important principle must now be recognized.

Each of the diagnostic team members provides information so that the school personnel will be able to meet the needs of the children more adequately. Following diagnosis, a placement conference should be held. At this time all the specialists who have evaluated the child make their reports. Out of this sharing and pooling of information comes a unified understanding of what the problems are and what they mean in the development of an educational programme. "The decision as to how the educational programme will be implemented, what the child's educational placement will be, and other decisions of

importance to the curricular adjustments which may be necessary is the responsibility of the educator". There is no other member of the diagnostic team who functionally has the information necessary to make these decisions or has the legal authority to do so. Education is a responsibility of the schools. The final responsibility for all that goes on in the schools for educational placement and for instruction is delegated by the state to professional educators.

The educator's function is to (1) see that complete data is gathered regarding a child, (2) to hear each diagnostician's report and to be certain that the report is understood, (3) to obtain a recommendation regarding placement from those who have examined the child, and (4) to make the final decision regarding educational placement in terms of known facts concerning the child and in terms of the realities of the educational situation. Sometimes these decisions will be contrary to the recommendations of the diagnosticians, but in keeping with sound educational practice. Such is inevitable, but proper.

"It has assumed that each child who failed to make progress in education under normal methods of procedure should, after analysis and correction of curable defects, be given such opportunities as the best advanced educational methods might afford. If the second great step in the education of the handicapped was their integration with the non-handicapped, then we may look upon this new development as the third great step, namely that of a diagnostic procedure by which the most effective programme to suit the particular needs of the individual child may be determined".<sup>32</sup>

### *Factors Affecting Educational Placement*

The following are some of the major factors which must be recognized as the educator seeks to make appropriate decisions regarding educational placement.<sup>33</sup>

1. The primary goal should always be to keep the child as close as possible to his home, parents, and neighbourhood friends. This means that, other things being equal, efforts will be made to keep the child in his neighbourhood school. The special class, the special school, the residential school, will not be ignored, but will be used when other avenues for good educational experiences have been exhausted. To keep the child in his home school may mean that

the regular schools will need to make important adjustments and concessions in behalf of the child. It is the function of the director or supervisor of special education to help principals and teachers do this. Orientation of teachers to the needs of the handicapped child will have to be insured, for example, the parents themselves may need to be educated to accept the desirability of regular school placement.

2. Placement in a special class or special school in the local community will be effected only (a) when the child is characterized by retarded mental development or mental deficiency, (b) when a multiple handicap is present, one part of which is retarded mental development, or (c) for physically handicapped children, when all avenues for placement in the regular classes have been exhausted and when the needs of the child realistically dictate such segregated placement. A blind child who is immature, physically, socially, and emotionally, may need a more sheltered environment for such time as is necessary to bring him to a level where he can compete satisfactorily with his sighted peers. A deaf child whose communicative skills are minimal may need a special class where full attention can be given to the development of speech, lip-reading, and language concepts. The cerebral palsy child who cannot walk, who has not yet established toilet habits, who drools, and who cannot talk or feed himself will undoubtedly need a special class placement. The fact that a child uses a wheel chair or a set of crutches, however, is not alone sufficient to justify special class or special school placement. In the United States many regular schools make easy adjustments to children in wheel chairs. There must be a more adequate reason for special placement than the presence of a prosthetic device. The fact that a child in a wheel chair needs three half-hour physical therapy treatments per day is sufficient reason for special school placement. The fact that hydrotherapy or heat treatment is required is sufficient for special placement, since equipment cannot be moved. However, this should be examined carefully too. Many schools find it more satisfactory to transport the child to therapy than to have him in a special school placement. There are children, however, who need special class and special school placement.

3. Placement in a residential school is not a matter of an either-or proposition in opposition to local school placements. Obviously, placement in a residential school will be recommended after all possible avenues for retention in the local school have been exhausted. For some children there will be more possibilities than for other children

for remaining in the local school. It is rare that schools for blind children or for deaf children should be utilized by large cities which have local special education programmes for such children. If the local school system is realistically meeting the needs of the handicapped children enrolled in the special education programme, little demand should be made on residential school facilities. However, the residential school has an important function to play for many children.

(a) Residential school placement should be recommended when it is obvious that the local school cannot possibly meet the needs of the exceptional child within a reasonable period of time or within a period of time necessary to insure adequate adult adjustment for the child.

(b) Residential school placement should be recommended when the child's home relationships are broken or when one or both parents are missing from the home and such parent absence results in inadequate general home security for the child.

(c) Residential school placement should be recommended when there are too few children in a given school or group of schools to make it educationally or financially feasible to employ an itinerant teacher.

(d) The residential schools have a function to perform with multiple handicapped children where mental retardation or emotional disturbance is a primary problem. Most residential schools have not accepted this as a major responsibility, but should be urged to do so.

4. A child may be considered for home instruction or hospital school placement only after all other educational possibilities have been excluded for that child. When home or hospital teaching is indicated, the goal should be to provide such instruction for as short a period as possible and to return the child to the regular school thus affording a resumption of rich social relationships.

5. Placement in whatever type of educational situation must be followed by continuous evaluation. The status of all handicapped children changes. It would change if education and medical treatment have been effective. Since there is frequent and rapid growth and change in the status of the child, it follows that there must be regular reappraisal of the child's educational placement. If this is not done, it will soon be observed that some handicapped children have in large

measure ceased being handicapped, but are still in special education facilities. Children who no longer need the special education placement can be moved a step or two nearer regular class placement.

### *Team Diagnosis as a Basis for Educational Placement*

Importance of team evaluation and assessment prior to decision regarding educational placement of handicapped children has already been pointed out. A supervisor of special education faced with the problem of appropriate school placement of a child would typically employ a three-fold plan before taking a final decision: (1) the child would be referred to the diagnostic team; (2) a staff conference would be held to hear the several reports of examinations; and (3) a placement decision would be made. The personnel on the team would change from time to time depending on the problem presented.<sup>34</sup>

### **Educational Methods**

Methods and techniques used in teaching children with physical disability sometimes differ from those in regular classrooms. This occurs when they are more advanced and therefore more effective than current practices, and when the child's physical condition precludes his benefiting from the usual procedures. When children are unable to move about as other youngsters, when communication is difficult, and when hand co-ordination is impaired, special techniques and methods will be devised. They might change from day to day, from child to child. Generalizations are difficult to make since the group is so very heterogeneous. Often, as a result of smaller classes, intensive study of individual children and their needs, necessary flexibility in the classroom, and reduced administrative pressure to conform, programmes for disabled children can assume leadership for all education.

### *Grouping*

Groups may be temporary and flexible depending on particular activities in which the children will engage. Programmes for children who are crippled are usually multigrade in as much as the pupils represent a wide age range, mental ability, and physical endowment. In addition, the teacher will discover wide scholastic gaps for which reasons must be determined and provisions made. Prior to the establishment of groups, detailed information on each child is gathered.

As soon as possible, the teacher will obtain comprehensive records comprising other teachers' reports of any previous group experience, establishment of the child's ability, level of functioning, interests, aspirations, and self-concepts. His physical status including his motor capacities, present therapy emphasis, and his limitations will be significant in determining class relationships and in facilitating group operation.

Grouping will be determined by major class activities rather than by subject matter or rigid time schedules.<sup>35</sup> Of necessity, the programme will be unified and integrated. At times, the entire class will function as one group. Attention will be focussed on a large undertaking in which all can participate. For example, one enterprise might be a nature study field trip. Together the children will plan the time, place, and general preparations. Quite spontaneously, two or three small groups might emerge. Functioning in these subgroups will assist each child in contributing on his own level of expectation. The objectives of the older, more mature student might be quite different from those of the younger children who will confine their activities to collecting leaves or corns. Where alternations and decisions on groupings must be made, the teacher, with great sensitivity, should explain in the children's terms, reasons for relocation. Should two or three similarly seriously disabled children be in one group, arrangements will be made for an able bodied adult worker or a pupil assistant to serve in gathering material for microscopic study or scientific research. Opportunity for individual instruction is abundant and will be increased as the groups develop ability to work independently and effectively.

Quite naturally, subgroups will change and the function of individual members will be altered for various activities. In all situations, the guidance of the teacher is necessary in studying the ability of the group to work together and to assure the contribution of each member. If possible, the teacher will try to avoid having all the grossly handicapped children in one group at one time. Children will function better together if at least one can walk, one uses one's hands independently, and one has good communication. If an entire subgroup is physically dependent the teacher may be required to concentrate on their activities while neglecting others.

### *Scheduling*

Grouping and scheduling create complex interpersonal problems in a co-operative enterprise offering occupational therapy, physical

therapy and speech education, whether the children attend a clinic, hospital, or the school programme. Bases for educational instruction and time allotments for instruction vary in many respects. Children requiring concentrated medical or therapy programmes, especially in a hospital setting, might have little or no time for schooling. In such temporary arrangements, the teacher works with the child during his available moments, but school time will be extended as the physical condition improves or the need for therapy diminishes.

For children whose school and therapy programmes are fairly balanced and stable, it is generally recommended that since the teacher works with groups rather than with individuals in isolation he will be able to identify the children who function best together in a group setting. With this as a starting point, the team will attempt the difficult task of scheduling. Wherever feasible, these groups will be respected but, for any number of reasons, the occupational therapist may wish to have two or three children work together, for, a particular sequence of instruction might be important for some boys and girls. For example, a child's physical therapy programme might be more functional when following his speech lesson; thus the teacher's tentative organization is disturbed. Compromises will be required and expected, but the professional worker will accept the alternative as he recognizes the child's overall needs and the ways through which he can receive maximum benefit.

## **Essentials of Special Education**

### *1. Locating the Handicapped Child*

One of the basic premises of all education for handicapped children is that of early discovery. It is essential that educational and treatment services be brought to the handicapped child at the earliest possible stage in his life in order to insure that he will reach his optimum development by the time he obtains maturity. For this reason there must be an intensive effort to locate handicapped children during the elementary school age.<sup>36</sup>

As regards location, teachers or parents are able to observe some of the more obvious defects. The lesser defects have usually been known to parents before their children enter the school. There is an erroneous belief on the part of parents and teachers that lesser defects should not be reported. But these also need diagnosis and physiotherapy treatment, otherwise, they may develop into serious

defects. Among the most important services of information regarding disabled children are the schools. Many a hidden handicap can be found out by class teachers who are alert in recognizing deviations in activity, response or accomplishment and relating these to untreated physical handicaps. Elements in the school programme which are highly effective in finding out disabled children are: (a) a continuous census; and (b) a school health programme.<sup>37</sup>

### **(a) Survey and Census**

Any village or town, District or State which anticipates developing a programme to meet the needs of its disabled children should first undertake an exhaustive survey of actual need. The number of children reported by lay groups in a given type of handicap often proves unrealistic in the face of an actual census. Without complete knowledge as to the type of disability, the age of the children within the type group, and the degree of disability in a given child, school administrators cannot develop a logical programme; nor can they predict future needs. Money spent in conducting a good survey will be money saved in the future operation of the special education programme.

Since much of the implementation of a programme for the education of handicapped children will have to be the responsibility of the teachers, administrators, and auxiliary personnel already employed in the school system, it is advisable to undertake the survey as a "self survey", that is, completed in large measure by the school personnel themselves rather than by professional survey personnel employed from outside. The latter should be employed as consultants to assist in the interpretation of the data collected and to counsel the educational staff on the nature and scope of the survey. A self-survey will serve to sensitize school personnel to the problem of disability and as a result will hasten implementation when an actual programme gets under way in the future.<sup>38</sup>

### *Maintaining a Continuous Census*

Once a survey of handicapped children has been completed in an educational district, it is essential that it be kept up to date. There must be a continuous census as a logical sequel to an initial survey; without continuity of current information, the value of the survey is significantly minimized. School administrators cannot realistically plan for handicapped children unless they are current in the census figures.

This information is important on a short-term basis as well as for long-term planning. Such problems as transportation, the assignment of itinerant teachers, the ordering of special equipment, and similar matters pertinent to a good educational programme must be based on current population figures. These matters relate to short-term planning. On a long-term basis many things have an important impact on census. The increase in some diseases such as retrolental fibroplasia, means the increase in the number of handicapped children with visual handicaps. The development of the salk vaccine will undoubtedly result in a decrease in the number of school children with poliomyelitis. Parents' acceptance of physical disability and the great increase in interest in cerebral palsy has meant a significant increase in the number of such children in the public schools. A school administrator must have continuous census data at hand in order to immediately translate these trends into action programme for the children in his school.

Census data kept by school administrators should show the total numbers of handicapped children by classification, the schools in which they are enrolled, movements of children within the school district, the chronological ages of the children and their class placements, the degree of disability, and other information of somewhat less importance such as sex, race or religion. Such items as the need of the child for transportation, distance from home to school, presence of multiple disabilities, mental age, and emotional status may also be easily coded for tabulation. Information so gathered can be made readily available. The director of special education is thus always in a position to exert educational leadership in advance of the creation of problems. The gross needs of handicapped children can always be anticipated through the medium of a continuous census.

## **(b) School Health Programme**

A systematic and regular school health programme ensuring the physical examination of all school children within a reasonable interval will in fact help the educators to identify the handicapped and the potentially disabled children.

## **2. Psychological Services**

A second essential in a complete programme for handicapped children consists of a professional programme of psychological services.

As the availability of highly qualified psychological personnel becomes a reality, information can be made available to teachers and principals. In understanding the psychological functioning of cerebral palsy children, exogenous mentally retarded children, epileptic children, children with brain injury without motor involvement, emotionally disturbed children, and many others, the results of projective personality tests become significant in understanding the child and in programme planning. A carefully administered, interpreted, and reported Bender Gestalt test can be of great help to a teacher who is trying to meet the needs of a child with a central nervous system disorder. A conference between the teacher, the principal, and the school psychologist regarding the results of an individual personality test or tests can result in increased understanding by the educators concerning the child, and as a sequel, a better educational programme may be developed for the child.

However achieved, the psychological services are a basic essential to the educational programme for handicapped children. Education for handicapped children and psychological services go hand in hand. Without the latter, the former will be ineffective. The sequel to good psychological service for a handicapped child is the matter of educational placement.<sup>39</sup>

### *3. Staff Orientation*

An aspect of the education of handicapped children which is often times overlooked is that of the orientation of general educators to the needs and characteristics of handicapped children. There are two aspects to this problem: inservice orientation and preservice orientation.<sup>40</sup>

#### **(a) Inservice Orientation**

It is frequently assumed that a teacher, simply because he is a teacher, understands the nature and needs of all children. It is all too often assumed that a school principal, supervisor, or administrator, because of his experience and longer contact with school problems, will be knowledgeable in all matters pertaining to child growth and development including those of the handicapped child. Unfortunately, few teachers or administrators in general education have had any preservice orientation to handicapped children, and their contact with such children on an inservice basis has been sporadic. School administrators who anticipate any type of decentralized educational

programme for handicapped children must incorporate an initial plan of total staff orientation. Staff orientation must likewise be provided so that admission policies and the nature of special schools and classes for handicapped children in a given community will be thoroughly understood by all educators. Finally, all regular school educators must understand the appropriate and important function of good residential schools which are operated under state supervision or by private agencies. In this discussion, however, the need for orientation is being stressed particularly in those situations where special classes are to be incorporated into regular elementary or secondary schools or where a resource room or an itinerant teacher programme is planned. Where handicapped children are to participate in the regular classes of a school system, staff orientation is an absolute essential to the success of the programme.

Inservice staff orientation is important for several reasons. First, teachers and administrators will frequently possess all the misconceptions regarding handicapped children which are typical of the culture. Without first hand experience with disability, it is understandable that teachers, like other people, will be subject to the stereotypes which have historically grown up around many types of handicapped children. Positive concepts regarding the blind child come only from experience, or, in lieu of experience, by carefully planned orientation. Realistic understanding about epilepsy will not be spontaneously developed as a result of the fact that a teacher has had a general course in child growth and development. Hearing aids present problems to many who do not understand them. Crutches and braces, wheel chairs, and physical therapy treatments are foreign to most people, including educators. The concept that extra effort will have to be expended by an already busy teacher serves to deter many educators from accepting handicapped children in a regular grade classroom. No criticism is implied in these remarks, for such attitudes are to be expected in the absence of direct experience. On the other hand, experience has demonstrated that where well-developed orientation programmes are made available to educators, these same educators are able to approach positively all types of handicapped children and youth in a manner which makes for a strong regular school programme.

### **(b) Preservice Orientation**

Of equal importance to inservice staff orientation is the preservice information about handicapped children given to those who

have decided to enter the teaching profession. The body of information is of such magnitude that it warrants a special emphasis in what is recognized to be an already overcrowded professional curriculum. An integral part of a child growth and development sequence of courses, however, is one dealing with the nature and needs of handicapped children and youth. Institutions of higher education which have programmes for the preparation of specialist personnel are certainly in a good position to provide broad survey courses for general education students. Other college and university schools of education should be certain to employ a professor who can, among other things, provide this important orientation to undergraduate students.

The orientation shall consist of various elements, chief among which are (1) well-organised lectures on all types of handicapped children, (2) extensive readings to supplement lectures, (3) planned and scheduled observations of handicapped children in school, clinic, hospital, and recreational situations, (4) acquaintance with national, state, and local agencies for handicapped children, which are of use to regular school personnel, and (5) special papers and reports concerned with aspects of the education of handicapped children of particular interest to the student.

Notwithstanding in actual practice, teachers are being prepared with minimum competencies when maximal skills are essential. All professional personnel in special education should be concerned with the quality of teacher preparation. Mediocrity cannot be tolerated. The weakest teacher education programme will reflect ultimately upon the total field. Therefore such programmes must be strengthened.

In general it is the hope of professional personnel that teachers of special education will first become acquainted both theoretically and in terms of experience with the physically and intellectually normal child and youth. It is difficult, if not impossible, to understand the handicapped child without first having a good perspective of the normal child. Basic concept of child growth and development, concepts of mental health, methods of teaching, practical experience with normal children and other matters pertaining to a good programme of elementary and secondary education are essential to the teacher who ultimately will teach handicapped children. Thus the programme of teacher education in special education should probably become a programme that is essentially an extension of basic preparation for certification in either elementary or secondary education.

In order to ensure a high standard of teacher preparation, the training institution must provide well equipped laboratories, highly skilled faculty members, opportunities for observation of and participation in on-going research studies, and a continuous experience with various types of handicapped children and their families.

The importance of the teacher in the education of handicapped children cannot be over stressed. This is true, because the teacher of handicapped children is entrusted with a major responsibility and because he, of necessity, must work alone. His work is not fully understood by the general educators with whom he is associated. They recognize its importance, but because they cannot fully participate in the work which he does, they tend to leave the teacher alone and trust that he knows what he is doing. This places a greater responsibility in the hands of the special education teacher than is usually given to regular classroom teachers.

If democracy is in large measure based on the effectiveness of public education, and if the teacher is the individual who is on both the firing line of education as well as on the cutting edge of knowledge, the importance of the teacher is unequivocal. The teacher of handicapped children must be the most secure individual who can be found. The teacher of handicapped children must be the most patient individual who can be located. He must be creative to the point where he can realistically adapt the hopes of a democratic society to the individual peculiarities of the children in his charge. He must be foresighted and able to pitch his teaching to such a level as to give children those things which will make adjustment possible 20 to 50 years hence. The teacher must be knowledgeable, and be thus able to give his children those things which will make decisions possible. He must be a person who so thoughtfully identifies with his pupil, that he and his pupils should have a mutual respect and pride in each other.

#### *4. Guidance and Counselling*

Staff orientation provides the background of general understanding to the education of disabled children in any school system. Diagnostic services and subsequent appropriate placement provide the specific information which educators need in planning a programme for the child and in adjusting the curriculum to meet the particular needs of the child. Ingredient to a good educational

programme is a philosophy of continuous guidance and counselling for both the disabled child and his parents. Many professional people in the school system may participate in the counselling process from time to time and all are vitally important. The concept of guidance considers that it is a function which begins the day the child comes into the school and doesn't stop until the day he leaves. In some instance it may even follow for a time after the actual period of school attendance has passed. Obviously within this purview of guidance there will be some formal aspects to the programme and many informal aspects. The teacher is obviously the person who is in the best position to exert a continuous influence on the child.

The teacher's responsibility is always to help the child match his capabilities against the realities of a job or work situation. It is an accepted fact that job potentials for many handicapped children are more limited than for physically normal children. If the disabled child during the early school years can be helped to gain a realistic appraisal of his limitations and capacities in terms of the requirements of numerous vocations, many heartaches and disappointments could be avoided in later adolescence and in adulthood.

### **(a) Aim and Scope of Guidance Services**

According to the Report of the Education Commission of India 1964-66,<sup>41</sup> guidance services have a much wider scope and function than merely that of assisting students in making educational and vocational choices. The aims of guidance are both adjustive and developmental: it helps the student in making the best possible adjustment to the situations in the educational institution and in the home and at the same time facilitates the development of all aspects of his personality. Guidance, therefore, should be regarded as an integral part of education and not a special psychological or social service which is peripheral to educational purposes. It is meant for all students, not just for those who deviate from the norm in one direction or the other. It is also a continuous process aimed at assisting the individual to make decisions and adjustments from time to time.

### **(b) Guidance in Primary Education**

Guidance should begin from the lowest class of the primary school. It can be used in helping pupils to make a satisfactory transition from home to school; in diagnosing difficulties in the learning of basic

educational skills; in identifying pupils in need of special education (eg. the gifted, the backward, the physically handicapped); in helping potential drop-outs to stay in school; in guiding pupils to develop insight into the world of work and favourable attitude towards work; and in assisting in plans for their further education or training. It would, therefore, be unrealistic for a long time to come to think of providing qualified counsellors in these schools. Some guidance functions can, however, be performed by well-trained primary school teachers. Community resources can also be mobilised to meet some of the guidance needs of the young pupils.

The commission provides certain suggestions for making a beginning in guidance in the primary schools.

(1) The training programme for primary school teachers should include familiarizing them with simple diagnostic testing and with the problem of individual differences and the implications of these differences for classroom practices.

(2) There should be at least one lecturer in the training school who should be able to deal with the subject of principles of guidance and mental hygiene.

(3) Guidance services should be introduced in the training institutions and in schools attached to the institutions so that the trainees may get first-hand knowledge of the problems involved in their organizations.

(4) Wherever possible, short in-service courses in guidance should be provided for primary school teachers.

(5) Simple literature for the occupational orientation of children may be prepared and made available in the regional languages.

(6) At the end of the primary stage, children and parents should be helped in the selection of courses for further education, and the selection should not be based on the examination results alone.

### **(c) Guidance in Secondary Education**

One of the main functions of guidance at the secondary level is to aid in the identification and development of the abilities and interests of adolescent pupils. It helps these pupils to understand their own strengths and limitations and to do scholastic work at the level

of their ability; to gain information about educational and vocational opportunities and requirements; to make realistic educational and vocational choices and plans based on a consideration of all relevant factors; and to find solution to their problems of personal and social adjustment in the school and the home. Guidance services also help headmasters and teachers to understand their students as individuals and to create situations in which the students can learn more effectively.

These observations of the Commission are all the more significant with regard to the education of the physically handicapped children. Given competent personnel, there are three additional essential characteristics of such personnel with respect to the proper guidance and counsel of handicapped children.

First, counselling and guidance personnel must have a thorough knowledge of handicapped children and their needs. They must have so thorough an understanding and appreciation of his abilities and his limitations that they can be adequately interpreted to the community and to employers who co-operate with the schools in the job placement programme. These professional workers must be able to see the child in relationship to his ability, and not have their vision clouded by the handicap per se. They must be able to approach the physically handicapped child in the manner in which they would approach any physically normal child, that is, with an intelligent interest in the child, his wishes, and his potentials; not with misplaced sympathy, pseudo-understanding, and facial expressions of revulsion or tension. The disability, while important in the life of the child, is always secondary to the child himself.

Secondly, guidance and counselling personnel must understand the nature of the curriculum planned for handicapped children and they must know the potential job outlets for handicapped children.

Thirdly, the guidance counsellor should have the ability to interpret the mental powers of the child in terms of his physical capacity and in terms of the reality of the job interest and to guide the child either towards or away from a specific field, without affecting his motivation. The counsellor from a very early age must assist disabled adolescents and young people to realize:

(1) that all wishes cannot be fulfilled (for bodily strength and attractiveness, for money and play-things or property, for travel, etc.);

(2) that all the goals they set in life cannot be reached as superiority in athletics, excellence in scholarship, great social, professional, or business success;

(3) that some people whom they meet will prove to be unsympathetic, intolerant, uncongenial, others even dishonest, untrustworthy, undependable and indecent;

(4) that we as human beings do not know everything, cannot solve all problems relating to ourselves, relating to the correction of physical disabilities, relating to society, the world, the universe - to realize all this, and yet remain interested, ambitious, and energetic to the end that an appropriate achievement can be effected in adult life. Wise guidance by adults will save physically handicapped children from serious disillusionment and discouragement and at the same time stimulate intellectual curiosity and a determination to realistically succeed.<sup>42</sup>

### *5. Assistants for Teachers of Handicapped Children*

Shortage of qualified teachers of the handicapped is a problem in many countries. This is aggravated by the fact that an increased number of children is seeking admission to the regular schools. When handicapped children are grouped into special classes, the nature and seriousness of their individual problems necessitate classes of very small size. Usually the size of the classes for disabled children vary between five and ten. Even with these very small groups of children the teacher may be hard put to meet the extreme differences which will often be encountered.

### **Non-professional Volunteers**

While not an original idea, an experiment in the form of a demonstration was recently undertaken in U.S.A. to ascertain the value of placing non-professional volunteers into classrooms as assistants to teachers of handicapped children. Two types of educational situations were utilised; class rooms which were solely for handicapped children and regular classes integrating handicapped children. The assumption underlying the programme was that if professional teachers could be relieved of the administrative tasks of the class room and could be given assistance in the non-teaching problems of the school day, they would have more time to teach children and would be able, in the integrated situation, to more

adequately meet the needs of the child with differences. This way greater individualisation of instruction for all children would be accomplished.

One of the most important factors affecting the success of such a programme is the selection of the volunteers. Numerous individuals indicate a desire to volunteer but are not suited to participate in a regular school programme. Patience, readiness to be guided by the teacher, willingness to refrain from moving into professional areas, interest in children, ability to participate in the teacher's concept of discipline and not to establish a counter programme, and concern for child growth and development without pity and sympathy for the handicapped children are some of the positive characteristics which educators must appraise in seeking volunteers. There are many sources of volunteer assistants, such as women's organisations in churches, committees of the parent teacher associations, youth wings of service organisations and students movements like national service scheme, social service league etc.

Not all who volunteer should be accepted into the programme. A carefully developed interview with educational personnel is essential. The motivation of the candidate is important to ascertain. They must be informed that there is no financial reward possible, but that in spite of this, if accepted, they are expected to be present in the schools for the specified number of hours each day.<sup>43</sup> The volunteers may vary in their age, education and socio-economic status.

In the classroom situation they can do a wide variety of things to help the teacher; they can assist in keeping the class register, take groups to the nurses room for physical examinations and help in the cafeteria during lunch time. An assistant in a group of crippled children can help in the dressing of children for physical therapy treatments, take children from classroom to therapy room, take care of crutches and other necessary prosthetic equipment to minimise accidents and to facilitate educational experiences. Some others may prepare teaching materials for the speech therapists so that more stimulating and more individualised therapy materials would be available to the therapist in working with speech handicapped children in the schools.

To make their service more effective the volunteers and regular teachers are expected to meet frequently to share their experiences and discuss the practical problems in dealing with the children. It is

felt that the teacher assistant plan is very useful both for a programme of integration of physically disabled children into regular classes and to supplement the efforts of special education personnel who are responsible for special classes which are heterogeneous in nature.

## *6. Transportation*

Another important service which the disabled children require is transportation. Many children suffering from physical handicaps are deprived of education, simply because they cannot travel to their schools by ordinary modes of transport. Special education programmes for these children must, therefore, include provision of suitable transport. While a separate transportation system is not necessarily being advocated, the factor of transportation per se must be considered by school administrators who envision a programme of special education. It is rare that sufficiently large groups of handicapped children will live in proximity to a given school to compose the total school programme. In the United States, school code section 3,611 lays down that the district must provide such transportation for those pupils whose physical handicaps prevent walking to school. In developed countries three types of transportation have been made available for disabled children. They are: special bus, taxi, and private automobile. Generally, specially constructed buses are used as the other two are very costly.

## **Impact of Special Education on General Education**

The history of education in the United States illustrates that much of what is now considered educationally important for all children has had its original stimulation from special education. The concept of individual differences, so common place today as to be a generally accepted fact, was not recognized fully as late as 1900. The importance of individual differences, for example, stemmed from the fact that handicapped children simply did not fit into the patterns of education which had been established for the normal child. Developments in school lighting, school health, and many other general school modifications stemmed from original developments within special education.

It is safe to say that the greatest impact of special education has been on the elementary school teachers and the elementary schools are more able to assimilate the handicapped child into the school programme. There are several reasons for this. Handicapped children until recent years have been the responsibility of elementary

school level personnel. The number of handicapped children at the secondary school level was very small and the percentage increase from year to year, except as reflected in the most recent figures, has been more or less inconsequential. Further, child growth and development concepts have been stressed much more with elementary school teachers than at other levels. The concept of individualization of instruction based upon individual differences is an integral part of the elementary school philosophy. The informality of the elementary school like-wise has been conducive to the acceptance of handicapped children.<sup>44</sup>

With the increased number of handicapped children to be enrolled in the secondary school, it can be expected that their presence ultimately will have a similarly beneficial effect on secondary school programmes. Secondary education historically has been typified in large measure by group instruction, by appeal to the intellectually normal and superior child, by college preparatory concepts, by departmentalisation of instruction, and by common standards of excellence and achievement. Secondary school personnel have been less concerned with the individual and more concerned with the subject matter. They have been less able to adapt to individual differences and are more interested in bringing the individual to levels of achievement which often have been established by industry, by colleges and universities or by educational testing services. Handicapped children will present challenges to secondary education which will necessitate modifications in educational philosophy and in programme if such schools are to meet the needs of this important segment of childhood and youth.

## Footnotes

1. *Report of the Education Commission 1964-66*, "Education & National Development", Ministry of Education, Government of India, Ch. VI, p.123.
2. Usha Bhatt, op. cit. p.145.
3. William M.Cruickshank, G. Orville Johnson, *Education of Exceptional Children and Youth*, p.20.
4. Usha Bhatt, op.cit. p.148.
5. Percival Symonds, *Mental Hygiene of the School Child*, p. 2. *Physically Handicapped Children for the countries of South-east Asia, Section(C) education*, p.11. Usha Bhatt, *ibid*.
6. J.E. Marcault, *Report of the United Nations Conference of Experts*, *ibid*.

7. Frances P. Connor "The Education of Crippled Children", William M. Cruickshank, G. Orville Johnson, op.cit. p. 422.
8. Ibid. p.443.
9. Pestalozzi, quoted by Paul Monroe, in *A Brief Course in the History of Education*, pp.314-315; cf. Dr. Brosse, *Report of the United Nations Conference of Experts on Physically Handicapped Children for the Countries of South East Asia, Section (C) Education*, p.11, Usha Bhatt, op. cit. p.149.
10. William M. Cruickshank, G Orville Johnson, op.cit. pp. 444-446.
11. Ibid. p. 50.
12. George F. Mayer, "Education of Blind Children in Public Schools", Paul A. Zahl, *Blindness*.
13. William M. Cruickshank, G. Orville Johnson, op.cit. p. 51.
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16. William M. Cruickshank, G.Orville Johnson, op.cit. p. 58.
17. Ibid. p. 63.
18. Usha Bhatt, op.cit. p.153.
19. William M. Cruickshank, G. Orville Johnson, op.cit. p.63.
20. Paul A. Zahl, *Blindness* pp.110-111.
21. William M. Cruickshank, G.Orville Johnson, op.cit. p.63.
22. Ibid. p.67.
23. *The Pine Brook Report* (New York: American Foundation for the Blind, 1954) p.16, William M. Cruickshank, G. Orville Johnson, Ibid. p.68.
24. *Sight-saving Review*, 25 (Spring, 1955) p. 29., ibid.
25. *Itinerant Teaching Service for Blind Children*, New York: American Foundation for the Blind, 1957) p. 9. ibid. p., 70.
26. Ibid. p.72.
27. Soldwedel, B. and I. Terrill, "Sociometric Aspects of Physically Handicapped and Non-Handicapped Children in the same Elementary School," *Exceptional children*, 23 (May 1957) p. 371., ibid.
28. Usha Bhatt, op.cit. pp.151-152

29. Ibid.
30. William M. Cruickshank, G. Orville Johnson, op.cit. p. 74.
31. Ibid.
32. Paul A. Zahl, op.cit., p.111
33. William M. Cruickshank, G. Orville Johnson op.cit. pp. 77-80.
34. Ibid. p. 80.
35. Mackie, R. P., *Crippled Children in School*, Office of Education Bulletin No.5, (Washington, D.C: U.S. Govt. Printing Office 1948), Ibid. p. 475.
36. Ibid. p.96.
37. Usha Bhatt, op.cit. p. 149.
38. William M. Cruickshank, G. Orville Johnson, op. cit. p.98.
39. Ibid. p.106.
40. Ibid. pp.106-110.
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44. Ibid. p. 95.

## CHAPTER XI

### EDUCATION OF THE ORTHOPAEDICALLY HANDICAPPED

The educational needs of orthopaedically handicapped children are the same as those of the non-handicapped children. However, their disability presents additional needs which vary from person to person according to the nature and extent of the handicap. Some of these needs vary from the normal in degree and emphasis; others dictate a new programme in quantity and dimension.

The relationship between physical disability and mental deficiency has long been a controversial question which has given rise to much discussion among psychologists and educationists. Notwithstanding the fact that physical disability has little direct impact on mental retardation, it has been observed that in many cases, physical impairment has adversely affected the educational development of these children. Undoubtedly these children face the problem of mobility and some of them need remedial exercises throughout their school career and perhaps later too in order to strengthen weak muscles.

At the same time they do not require special 'teaching techniques' such as those used in the case of the blind or deaf children. Hence their educational programmes need not differ from those of the able-bodied child. Nevertheless when the problem is reviewed as a whole, and when it is realised that the entire group of the orthopaedically handicapped consists of children whose disabilities vary from a slight defect such as a limp, to such severe conditions that make it necessary for the victim to lie prostrate on his back for life, their educational process becomes much more complex. If the

ideal situation is to be obtained when education should be available to all the physically disabled children in order to give them the opportunity of living full, happy and useful lives, planning for their educational and training facilities will have to extend far beyond those which merely aim at providing special schools for such children, or make adjustments for them in ordinary schools.<sup>1</sup>

Stability and continuity are indispensable characteristics of an effective educational programme. But in the case of a crippled child this is not often achieved, on account of breaks due to intermittent hospitalisation, treatment, waiting for prosthesis or even change of school. The educational programme of each child is obviously governed by the nature and extent of his ability. Therefore when planning educational schemes, provisions for the disabled child's requirements at every stage, from early childhood to adolescence and for vocational training beyond, should be taken into account.

## **Systems of Education**

The educational objectives, systems or type of educational programme and the method of organising classes of the orthopaedically handicapped children are practically the same for the physically handicapped as a whole. They have been elaborately dealt with in the previous chapter and therefore to avoid duplication, discussions on these aspects are not included in this chapter.

## **Techniques of Teaching**

Teaching children who are disabled calls for the same techniques used by all teachers, but it requires extended sensitivity, creativity, and flexibility. As the teacher senses the children's problems and needs, he will call into play personal knowledge, ability and initiative. A flexible programme is the vehicle for translating the individual differences of children into a constructive learning situation for all.

In teaching children who are disabled it is invaluable to have an inter-disciplinary approach sharing ideas and methods among staff members. This communication will benefit the school programme in many ways.

1. Teachers will better understand the child, as team members discuss their contribution to the over-all diagnosis of the youngster.

2. Opinions will be expressed on the child's immediate and long-range needs.

3. Consultant help will be offered in designing and providing equipment and educational materials for school.

4. Team planning and work on co-operative overall projects in the therapies as well as in school will help add unity to the child's day.

5. Work of one team member can be carried over into other aspects of the programme.

6. Total evaluation will give teachers insight into the child's rate of progress and the opportunity to see the child's functioning in school as part of a total programme.

7. Reporting to parents will be unified.

Team members will not be used one against the other if each understands the child's total programme and status.

In this setting, the teacher will express his professional opinions as will other professionals of the team like administrators, doctors, psychologists and social workers. Unfortunately, teachers are sometimes hesitant to speak in such a scientifically trained group, but as respect and regard for the teacher develops among the team members, the importance of educational evaluation and observations will also be realized by the team. Most teachers with a background of child growth and development who have had an opportunity to study children as they relate to their classmates (possibly for longer periods of time than have their fellow professional workers), are in a position to add vital information to the data presented by the others.

The teacher's contribution might be a deciding factor in programme placement or might point out new avenues for professional exploration in the study of a particular child. Effective team participation presupposes courageous, mature members.<sup>2</sup>

**Field trips:** An educational field trip for children who are disabled always requires extensive planning. Preparation will consist of the teacher's traversing the entire route to determine the best means of transportation, the number of steps to be mounted, the hills to be climbed, the lavatory facilities available, the number of adults required for supervision, and physical care of the children, and the time

necessary for an unrushed, yet valuable trip. The role of the therapists is important here, too. The school trip may interfere with the therapy schedule. If the teacher in his preplanning, works out the details with the other team members, they will appreciate the objectives, the opportunity for practical application of the skills learned in the treatment room, and the importance of team co-ordination. They, too, might share the responsibility with the teacher and augment the value to be derived from the venture. In unifying the entire programme, the theme for the field trip might apply to the occupational therapist in making puppets, paper mache figures, or other items related to the project. The child's interest in the field trip might be a clue to meaningful speech teaching. Learning to walk up the steps at the entrance to the park, the zoo, or the provision shop will be an incentive for realistic physical therapy.

—**Reading:** The principles of teaching reading to handicapped children are the same as those for teaching all other children. Due to possible impoverished experiential background of the child who is nonambulatory, as well as his secondary physical defects and learning problems, the process may be slow. In addition, unusual physical assistance may be required and specific instruction in each detail may be indicated. Prior to reading, teachers will want to provide an abundance of childhood experiences which the so-called normal child will obtain and absorb even without a teacher's aid.

It is difficult to imagine a special class without an individual reading programme. Access to a well stocked library will be essential, since the standard text book series will not be used as the basis for full instruction. To make reading, which may be difficult, as enjoyable as possible, children should have access to appropriate reading material of interest. The pre-primer library book with pictures and stories of kittens will be considerably more valuable to the child who owns a cat, than will the teacher's presenting standardized material unrelated to the child's experiences. This, of course, implies that the teacher will prepare comparable readiness material for independent work and drill. It implies also that the teacher has a knowledge of subjects at all grade levels and will understand the child's ability and achievement. Records, preferably charts, must be kept of all available books described according to class level, degree of difficulty, and content. On the chart will be recorded the names of the children and the materials they have used. Through this technique, children will develop a sense of responsibility for the books they read, will work

independently (if the books are selected with care), and will enjoy reading in an area of interest.

At this point a question might be raised concerning methods of providing a worthwhile daily programme for those very severely involved children who cannot hold a book, turn a page, or are not yet able to read. Here teacher ingenuity and knowledge of the child are to be employed. Those with ineffective hands, but relatively uninvolved feet, can be taught to use their feet for typing, writing, moving pegs, or performing other valuable pre-school and academic tasks. Some children can be taught to insert paper and type while sitting before the typewriter on the floor. They can learn to eat independently, drink from a vertically ridged glass, dress themselves through use of zippers, elasticized socks, and trouser belts without use of hands or arms. Writing and painting with toes are possible for some children.

The teacher may be faced with the problems of education for the youngster with nonfunctioning hands and feet. How can this child work independently while the teacher is instructing a group of other children? Programme planning, wherever possible, is the result of interdisciplinary study. Therefore, all physical aids such as those useful for optimum seating and posture, holding a pencil or a paint brush, turning a page, or gaining hand and arm motion will be provided by those best qualified to prescribe. Upon securing and utilizing available resources, the teacher will devise means for self-expression and satisfaction in successfully accomplishing short assignments. For example, independent academic readiness materials might include magnetized coloured discs of varying shapes which can be shifted even in gross movement. Matching discs as to colour, shape, or size can be accomplished by pushing the proper object to a designated corner of a table enclosed within a raised edge to prevent the disc's dropping to the floor. For a severely disabled child this task may be arduous and somewhat discouraging. Consequently, the teacher's smile, evaluative glance, or supporting hand as he inconspicuously moves from the working group while continuing to participate in it, will be reassuring. Correspondingly work patterns will be effective in sequential arrangement of pictures, determining similarities and differences, and matching number cards. More academically advanced children can use the same method, with a code if necessary, in expressing answers to complex mathematical problems, science, or language arts projects. Applications of multiple choice question and answer technique are limitless upon establishing comprehension and work habits.

Especially for a group of children with cerebral palsy, oral reading can be difficult even in a group of only four or five. With the usual speech problems, all too often oral reading is slow; enunciation is poor; and children supposedly listening while awaiting their turn are bored, restless, and inattentive. Whereas, should the total class enterprise mentioned above be centered upon a nature study field trip, children can then return to the group with information they have gathered, pictures they have drawn, and stories they have read or written. Although these units form a large part of the curriculum, they are not all of it. Some subjects or topics are valuable in themselves and should be pursued because children like them and learn from them.

A well established pattern of independent silent reading will be an asset to the child who is physically limited. Children working on similar achievement levels can be given common basic reading instruction and reading activities in which they might read silently for information. A pattern of movement from left to right will be forthcoming as the group sees the charts develop and reads back the contents—even from memory. Labels on objects about the room will tend to stimulate interest in reading. Reading picture stories will be supplemented by writing picture stories. These, of course, can be created by arranging pictures in story sequence, by making scrap books of pictures representing classmates, family, and characters of their favourite tales, and by painting. On writing sentences for scrap books and charts, most children will build up auditory and visual discrimination pre-requisite to reading. They will begin to recognize initial sounds and develop word perception.

Teacher-made materials are a key stone to the success of a programme for disabled children. Specific necessary drill can be provided in the most effective manner. Puzzles of various sorts can be made by the teacher, the children, and others in the school. By pasting selected pictures, forms, and colours on plywood, varnishing them, and cutting them in various ways, appropriate and durable educational materials can be made available for reading readiness.

Children with involved movements or poor balance will possibly benefit from selected temporary aids for maintaining the reading place. Rulers or straight lined markers are adequate for some. Other children appreciate cut-outs to uncover just one line of print at a time. For youngsters with little or no hand control or function, underscoring with

different coloured pencils will assist in establishing consecutive and more rapid reading patterns. Tachistoscopic techniques and opaque projectors are effective for some beginners and highly distractible children.

Large charts are generally accepted in education and recommended for developmental reading. They are of even greater importance to children with ataxia and some others with visual problems. For these children, reading materials held at a distance are more appropriate than those close at hand. Reading from large charts, for example, is not usually accompanied by the feeling of nausea and dizziness frequently resulting from the close reading of a book.

Whether the child is enrolled in a regular classroom or a special education facility, major problems in the education of a child with cerebral palsy relate to the establishment of communication. Initial efforts to talk will prove difficult for the child, the teacher, and the classmates. Some children tend to be shy and hesitate to respond orally in class; others who are insensitive to reactions, antagonize their class members by their overtalkativeness. In either case, teacher tension can mount through fear or embarrassment from inability to understand the child's efforts. A systematic approach would emanate from the establishment of a "yes-no" response represented by moving the head or eyes either left or right, smile or frown, or any other set of signals. Some teachers write a "yes" and "no" on opposite sides of the desk of a conversation chart. The child then looks to one or the other as he attempts to make the sounds. Opportunity for expressing a decision offers the child a basis for communication. To avoid major frustration, various conversation boards have been devised; for nonreaders, a chart containing pictures representing mother, father, family members, pets, and school associates; another having pictorial verbs such as child running, falling, cooking, working, sitting, going, and coming. Then, it is possible for the non-oral child to express himself by pointing to the major topics of a discussion period. With this technique, even the most seriously orthopaedically disabled child can participate in the "show and tell" period and, with the help of the teacher, communicate with the class. Soon other boys and girls will understand even the distorted speech of the child. Teachers will have to consult the speech teacher before introducing the conversation boards, since the child must not rely on the board as a substitute for speech when intelligible communication can be developed.

A non-oral method of reading for the most part, will be based on concrete experiences in classroom activities. After reading a sentence the child will be required to answer questions or even perform the action. For example, after reading "Look at Letha", the pupil will be expected to look at her classmate. As the child progresses, longer passages will be offered and more difficult tests of comprehension will ensue. The teacher will help in attaching new words and will say them aloud. In this situation visual and auditory perception and understanding will be studied.

**Listening:** Learning to listen, is especially significant for this group who may have shorter attention spans as a result of limited listening experiences and little responsibility for following directions. Other difficulties may have arisen from congenital neurological impairment. Therefore teachers will help youngsters focus on the tasks at hand and will take advantage of the distractibility by using colour, light, and movement on the subject to be studied.

**Writing:** The task of teaching children to write is magnified when a youngster has an amputation, involuntary movement, poor hand-eye co-ordination, or non-functioning musculature. Masking tape around the paper, or confined to the corners, will stabilize the writing surface. Folding the paper along the lines, or possibly on every other line will aid the child who requires extra direction through the tactile sense. Pasting a strip of light cardboard on the lines might also be effective as a guide.

Writing or drawing with a stylus in a pan of clay will be somewhat easier for the child with involuntary motion than will early attempts on paper. Various recommended supports and splints are available for youngsters unable to control or effect motion with a pencil or crayon. No new gadget for physical activity, even typing, should be initiated unless the teacher is assured of medical approval. Innocent and well-intentioned stretching of the hand in typing might injure a very recent muscle transplant or disturb the present range of motion.

**Spelling:** For these children, as for others, spelling should be related to the other language arts and to the child's experience and undertakings. Studying spelling through letter writing, dramatics, stories, and newspaper reporting is more vital than reviewing a list of unrelated words.

Some teachers have used the "yes-no" response in the case of a child who is unable to write or determine whether the teacher's spelling is correct. There are several fallacies here. First, a sensitive child will probably be able to evaluate the teacher's spelling from his vocal or facial expression. Secondly, doubt is raised regarding the advisability of exposing the child to frequent spelling errors. Most children can manage to push letters on a magnet board or slide them on the cross rack of a circular collection of letters. Even pointing to letters or looking at widely spaced ones will be a positive response through which words can be spelled.

**Arithmetic:** Again, as in language skills the early emphasis in teaching arithmetic is on exposure to use ample childhood experiences and the interpretation of familiar objects. Handling various materials, differentiating among contrasting sizes and quantities, counting, and seeing number configurations on price tags, street signs, telephone dials, and in store windows will all add to the child's development of arithmetic tools. Most important is the teacher's selection of materials, methods, and sequence of presentation and awareness of the child's need for clarity and concentration.

The individual arithmetic programme presupposes extensive teacher planning and specific preparation. Here the teacher no longer assigns page after page of standard text material, but diagnoses the child's needs and interests, and selects work accordingly. He again recognizes the need for record keeping. The text book location of various number fact problems is a large chart. For example, under the heading of multiplication by two digits might be found 10 to 20 ready references with page notations. The children's names are written across the top. The assignments and accomplishments of each are indicated in the available columns. Selections for each child are based on his age, physical limitation, achievement level and maturity. Spacing on the page, need for drill and variety, and the importance of materials with interest value are adjudged.

## **Components of a Special Educational Programme**

The scope of the special educational programme varies with the economic resources of a community. However, there are certain basic features which are common everywhere. They are: (1) remedial treatment, including intensified and specialized medical supervision, physiotherapy or occupational therapy when needed; (2) suitable

housing and special equipment; (3) special curriculum; (4) transportation; (5) special guidance for children and parents; and (6) recreational amenities.

### *(1) Remedial Treatment*

Children should be referred for special education only after adequate diagnosis of their condition has been made by an appropriate specialist. A correct diagnosis is, therefore, the first step in any school service for crippled children. Special education for the handicapped does not preclude measures of prevention or correction. In the case of a crippled child, treatment must proceed side by side with education. Medical care and treatment as well as physiotherapy and occupational therapy have now become an integral part of any educational programme for crippled children. Without maximum physical ability and co-ordination, the child is unable to take advantage of education; likewise a child cannot benefit fully from medical care and treatment unless he is mentally stimulated by education.<sup>3</sup> Medical supervision is provided by either private physicians, hospitals and clinics, or special school physicians. Occupational therapy and physical therapy are provided on school premises so that treatment may proceed side by side with education.

### *(2) Special Housing and Equipment*

In a school building for crippled children, there are certain specific requirements. Flooring must be such that no falls or slips are caused. It must permit the use of wheel-chairs as well as crutch-walking. Elevators and ramps are needed to accommodate the orthopaedically handicapped children with wheel-chairs and those who are not permitted to climb stairs. Wide doorways are required at the main entrances and exists.

The class room environment must be conducive to physical activity. The presence of a standing table, parallel bars, or hand rails will encourage the child to move about the room. Although remaining in a wheel-chair throughout the school day may be necessary for some children, every effort should be made to have the child sit in a stable chair maintaining a school posture. Often children with crippling conditions will require more sturdy equipment than those with normal use of hands and legs. Special equipment setting them apart from other children, should be used only when it will

facilitate the child's movement in activities easily performed by children of his own age. The cosmetic effects of appliances and devices will be almost as important as their functional value for these boys and girls.<sup>4</sup>

Special equipment is needed for many crippled children. They include: movable desks with adjustable seats and attachments for support of limbs and for support of books. Of primary concern is the equipment for physical therapy. Treatment tables, devices for corrective exercises and equipment for heat treatment and hydrotherapy are commonly used. Tables, work-benches, tools and equipment for occupational therapy and handicraft are also provided in schools. Page turners, record players, large pencils or crayons, as well as an electric typewriter are very useful for the cerebral palsied children. An endless variety of gadgets for holding pencils, using feeding utensils, and playing with toys are available through commercial houses and can often effectively be made by the occupational therapist or the manual arts teacher who knows the particular child or home for which it is provided. Such a project can be carried on by a woodworking class in the high school with advantage to both the receiving and the contributing group.

### *(3) Curriculum*

Curriculum development for children with crippling conditions is a complex process. Teachers sometimes work with children ranging in age from four to fourteen. Others, as in home instruction or hospital bedside teaching, see only one child at a time. Handicapping conditions vary in areas of involvement and in severity. Providing a continuous developmental programme for each individual child is the key to appropriate curriculum planning.

The co-operation of all involved in the education and care of the child is required in developing a curriculum, for in this over-all programme, the entire team plays a part. The school programme would be limited, if the occupational therapist, physical therapist, speech teacher, and all others working directly with the child did not play a vital role in curriculum planning. The need to carry the therapy programme into the classroom cannot be minimized. The teacher wants to understand the child's degree of independence in such activities as dressing, feeding, and walking. How much should the

child be helped in these skills? What should the teacher expect? What kinds of physical activities are best suited to the child's treatment programme, and to what extent should he participate in the programme as planned? The effect of this extensive, intricate school service depends largely on the degree of interdisciplinary co-operation.

Before attempting curriculum development, the teacher needs to become acquainted with each child. A complete evaluation of the child's sensory function—visual, auditory, and tactile perception—as well as his emotional status is necessary.

Time adjustments too will influence curriculum planning. Young children often require more therapy than do those with chronic conditions, thus increasing interruptions in the school programme and attendance. The skillful teacher will, through grouping and careful scheduling, minimize such interruptions.

Children with progressive or degenerative conditions want a programme as nearly normal as possible. Teacher attention will be focused on striving to attain a reasonable but good level of achievement in selected school endeavours, varying the kinds of activities, thus minimizing awareness of increasing disability and discovering pupil interest which can be satisfactorily pursued.

## **Pre-school**

Due to physical disability, many pre-school children have had little opportunity for exploration of their environment by crawling around the floor of their own homes, helping mother in her work, or playing in the grass, and so forth. Many children with cerebral palsy have little or no ability to talk; nor is listening very important to them. The opportunity for first hand experiences should dominate the preschool curriculum. The use of interesting materials, previously unavailable to them, should be included.

Wherever possible, children with crippling conditions should have the pre-school programme suggested for all children. Efforts toward self-realization and even minimal independence can be fruitful in any number of ways. For example, having a pet in the classroom is fun for the pre-school youngster. Here is a friend who does not know of the child's limitations but who enjoys the youngster's awkward carelessness and accepts his food offers willingly.

## *Communication*

Communication for the child with motor handicaps cannot be overstressed. Faulty hand motion which increases dependence on oral communication for the child with speech defect, places a premium on language-skills experiences. These young children need the opportunity to talk, to be listened to and to listen. Children with cerebral palsy are likely to receive minimum satisfaction from verbal communication as compared with other children. The sensitive teacher, however, will soon learn the language of gestures, gross body movements and eye motion as the child expresses his needs and desires. Unfortunately, this kind of satisfying communication may all but eliminate motivation for oral expression. Since the child's lack of universal communication may be quite traumatic, the challenge for school personnel is great.

Rich common experiences will motivate speech among children in school. Familiar vocabulary and common reference points tend to clarify even unintelligible speech. Abundant use of uncluttered pictures of familiar objects assist children in communication; listening to meaningful stories told with distinct and accurate speech will tend to serve as a pattern for imitation in language-skills-development; opportunities to tell stories, no matter how limited and crude, are of immeasurable value to the youngster establishing relationships. Where speech is poor or not forthcoming, creative ideas can be expressed in pictures.

## *Personal development*

Pre-school children with orthopaedic defects are given little opportunity for such activities of personal growth, as changing his clothes, buttoning his shirt etc., since adults may be too concerned about compensating for the disability and extending their sympathy. With full appreciation of the conflict that goes on in the handicapped children between the struggle for independence and the need for dependence, the teacher and other staff should encourage them to put into practice the basic skills such as dressing, eating, personal grooming etc.<sup>5</sup> Beasley discusses the meaning and value of the learning situation as based on three concepts:

- (1) Motivations for learning are the child's own;
- (2) learning comes from the child himself; and

- (3) teaching procedures are based on meaningful wholes in variety of situations.<sup>6</sup>

Since many children are denied privacy, outlets for personal feelings, expressions of preference and voluntary changes of environment, they develop channels of self expression and opportunities for self discovery. Somewhere in the programme the child's levels of expectation and satisfaction must be identified. The curriculum will offer him a chance to plan, to work, to enjoy his success in his own way, and to react to his frustrations. He needs time to appreciate his accomplishments and evaluate his own actions. All too often the exaggerated praise of the child expresses the adults' satisfaction while at the same time stifling the child's own opportunity for self-evaluation and pleasure in discovering his own achievement. First efforts with minimal success might receive nothing more than the teacher's smile as encouragement. The youngster will then try again; excitement and distraction through adult interference is avoided. He is less afraid of failing to meet the teacher's expectations. Early inner attempts at writing or speech will be apparent only to the sensitive teacher who can see change and growth in body movements, even before the overt accomplishment. He will lend support, rather than lavish praise upon evidences of development. The youngster will begin to appreciate the teacher's acceptance of him as he is.

### *Physical development*

Physical development is not confined to natural growth or to the results of a therapy programme. Gross motor activities form a major part of the school curriculum for pre-school children. Out-of-door exercise should be included in the regular schedule although some special administrative planning will be necessary.

Play for the child who is crippled cannot be overlooked. He enjoys playing with mud and clay as well as participating in a rhythm band or moving with bells attached to his wrists. The teacher's expectations must be in line with the children's capabilities. With support, one disabled child will be able to move a block, others will transport toys by pushing as they crawl or roll about the floor. At this point, lack of grace and form in body mechanics is overridden by the joy of movement, participation and accomplishment, the child experiences.

Acquaintance with the usual childhood games, action songs and physical skills is important, not only for motor development, but also for bridging the gap between the disabled children and their non-handicapped friends. With such common knowledge and pleasurable experience, comes an additional feeling of belonging.

### *Emotional-Social development*

Children with physical disabilities are usually retarded socially and emotionally. However, with evaluation and selective pre-school placement, healthier personalities may result. Personal relationships of children influence their entire lives. Major responsibility falls to those working with these young children, especially as they make first efforts towards socialisation outside of the home. Moving from the protected home environment to one in which the children are exposed to their teacher often presents difficult personal adjustment. Many of these youngsters require considerable individual physical care. In learning situations, the child will be faced with one set of standards for his behaviour at home and another at school. The youngster openly rejected by his parents, may be fearful of strangers about him; the over-indulged child will undoubtedly miss his mother's absolute attention to his every wish. Bridging these gaps in a flexible but structured classroom setting is the task of a skillful, sensitive teacher who can recognize signs of tension and appreciate each child's level of frustration. Teachers are called upon to offer opportunities for success in selected activities presented clearly to the child.

Pressure for interpersonal adjustment of the child in a comprehensive education and treatment unit is great. In receiving occupational therapy, physical therapy, and speech education, he is often required to satisfy each of these professional workers each day. His adjustment will be somewhat easier, if the team is well co-ordinated and the understanding of the child is derived from common sources. The attitude of his teacher, parents and classmates will be most significant. Establishing healthy relationships with the other children will depend essentially on these adults who provide him with opportunity for independence even when extra time and effort are required.

Satisfaction of the child's need for adventure might at first seem difficult. In a classroom as the teacher becomes acquainted with individual boys and girls he finds that many first-hand experiences offer real adventure. In addition, the teacher will provide opportunity

for the children to enjoy individual trips and happenings by relating their stories through various media.

Curricular adjustments for socialization of young children will be many, but association with the non-handicapped in the pre-school period is usually feasible. Children of this chronological age are less aware of the developmental expectations at certain levels, are inclined to be helpful to the younger or less capable child, and are not repulsed by a handicap which to him does not yet carry a social stigma. Nonhandicapped children of three or four years of age have responded positively to the opportunity to play with children who are crippled.

For some children with handicapping conditions, socialization will be difficult and the teacher's understanding of the developmental process should be interpretive. He may experience unexplained outbursts of pleasure and displeasure; he may find children unable to share the teacher's attention, other children's interests, or even school materials with his classmates. Yet, for a frightened, withdrawn child, a sudden outburst may be encouraging; a child's attempt to strike another may indicate real growth. The teacher will probably need help in interpreting the child's behaviour, especially when it does not conform to the expected pattern.

### *Intellectual development*

Permeating all aspects of curriculum is a programme for mental growth. In learning theories, the words "meaningful," "purposeful," and "interesting" are used. To be meaningful and interesting, materials must be familiar to the child. Therefore, special effort will be made to have the youngster's familiar world expand as he feels objects in order to perceive their size, shape and texture. Smelling too is essential, especially if the child has had few experiences outside of his home. Studying about a farm, for example, with an awareness of the odours in the barn or the hen house is more real than seeing a movie or listening to a story.

In the preschool setting, the teacher will spend considerable time in educational evaluation and diagnosis both of the child and of his programme. A teacher needs information about the child's readiness for more formal school skills. He will study carefully each child's reaction to stimuli, his sensory equipment, and his perceptual intactness.<sup>7</sup> Medical personnel often see the child for relatively short single sessions. In school, as the child plays, the teacher can observe his response

to various sound frequencies, to picture forms with and without colour, and to differences in temperature or degree of moisture. The teacher will want to check vision too. He will watch to see if the child's eyes follow an object or if he moves his whole head in so doing. From the therapists, the teacher will want to know the child's ability in manipulation, especially in those movements essential for writing. The teacher and the therapists together will experiment to determine kinds of materials best suited to the individual child.

Discoveries of this sort in the pre-school years should assist teachers in planning for the school programme ahead. Complete records, including anecdotal reports, should be available to the elementary teacher. Suggestions for teaching methods and materials and the various results of trial and error approaches in the pre-school programme will be important in future educational planning.

### **Elementary school**

As the child advances in school, curriculum areas tend to be somewhat more specific. Children with average or above average intelligence will follow, as closely as possible, the school curriculum advocated for all children. To obtain similar results, some children will need differentiated educational material and or equipment and teaching techniques.

However cerebral palsied who function at a retarded level requires special programming and a thorough evaluation of educational objectives.

In determining curriculum for children entering the primary grades, teachers will want to determine the usual length of the child's attention span, his major interest, the degree and kinds of distractibility, fatigue elements for rest and food needs, auditory and visual discrimination, hand-eye co-ordination, kinds and degrees of self-care in dressing, eating, and toileting, ability to walk and to use his hands, as in holding a pencil or lifting a book. A survey of the objectives will supply a focus of attention.

Grouping of children for various subject areas and scheduling for periods of instruction and therapy is a complex responsibility of all those working with children requiring a comprehensive programme of education and therapy. Periods of rest and a variety of activities

during the day provide opportunity for measured active and passive phases of instruction. Work tolerance of the child will vary with the demands of the current therapy programme and with his emotional status. The amount of time devoted to school may fluctuate too. At times, school will be secondary to surgical care, intensive or experimental therapy, or to a concentrated programme of psychiatric treatment. On the other hand, for even a severely physically involved child, the school — common to all children — is most important at a particular developmental stage. Then, it may be possible for therapists, together with the teacher, to devise a combined therapy-school programme to be carried out in the classroom either by the teacher under the direction of the therapist or by the therapist working in the school setting. Knowledge of the child's physical status is necessary in school planning.

As a curriculum guide, the basic tenet that each situation has meaning for the child is most vital. Regardless of the educational setting, children who have relatively few first-hand experiences and resultant distorted concepts, must be familiar to the teacher.

Although, for crippled children, curricular differences will be apparent, normalcy of the programme must be retained. The curriculum will be developed to help the youngster perceive the problems he must face in any school situation, since transfer to another programme is probable. Learning to utilize his school learnings in his home and community environment is vital for good personal adjustment. Throughout the child's education, all concerned must understand his capabilities, help him realistically appraise his abilities in terms of life goals, and assist him in developing his potentialities toward useful living.

### *Physical growth*

Upon reaching school age, physical development is somewhat slowed down.<sup>8</sup> Large muscle development is still important, but the smaller muscles are in increasing demand for control and co-ordination necessary for the activities of six, seven, and eight year olds. Here, more and more, the handicapped child will begin to sense his inadequacies and inability to compete physically with other boys and girls.

Natural interest in team sports and gross body movements cannot be readily satisfied by children with major physical disabilities.

Acceptance of even the mildly disabled youngster on the team will not always be realized. Not being able to jump rope, to play football, basketball, or to climb the tree will be major barriers to the child's being one of the gang.

The complexities of curriculum planning for children with motor handicaps become increasingly apparent. After standard three or four, children's heterogeneity increases. Individual differences in abilities and accomplishments become more evident. The teacher's need for independent classroom activities for individual children is greater as the spread of academic achievement becomes greater. Careful daily programmes with appropriate teaching aids will accommodate all children, regardless of the disability. Even in special groups for the severely handicapped, a bored or inattentive child is usually evidence of poor curriculum planning or educational management.

### *Emotional-social growth*

Physical limitations, parental aspirations and disappointments, frustrations for the child, and strenuous efforts toward adjustment may result in serious emotional problems. Copellman, in a follow-up study of 100 children with poliomyelitis found that one-third of the group had severe emotional problems warranting professional help. The young children tended to be withdrawn and bewildered; the older ones (to 15 years of age) were considerably more aggressive.<sup>9</sup> The implications for class room programmes are many.

If the expectations are too high and the tasks too difficult to accomplish, a teacher might well expect regressive behaviour. Even the most sensitive educator will benefit from opinions of a competent psychologist and from a social worker's report on family aspirations. If such expert help is not readily available, the teacher will want to work closely with the parents and other team members who know the children.

Important to these elementary school children is their development of self-concept. A realistic self-appraisal made with the support of interested teachers and parents will facilitate adult adjustment. The child who realizes the various job requirements of routine class room responsibilities and who can determine his role is adjusting to his personal limitations. Theil described an interesting programme of long term vocational guidance in the sheltered class room environment, where an understanding teacher promoted realism

in preparing the child for more difficult adult adjustments in interpersonal relationships and employment situations.<sup>10</sup>

To foster such realistic self-evaluation and adjustment, experiences with various groups will be essential. Isolation with others who are physically disabled will preclude opportunity for true comparisons, for the necessary "give and take", and for gradual adjustment to the non-handicapped world. Youngsters who are crippled will need support in their initial social contacts with the general populace.

The reactions of strangers will vary from extreme sympathy to crude curiosity, and from outright rejection to treatment as another one of the crowd. To prepare the boys and girls as contributing members of a social group, specific experiences in interpersonal relationships are desirable.

Of benefit too is identification with wholesome effective adults. These childhood "ideals" need not all be the highly-gifted, well-known personages of President Franklin D. Roosevelt, the polio victim, or Dr. Earl Carlson, who successfully overcame the handicap of cerebral palsy, or Betsy Barton, the writer with a spinal chord injury.<sup>11</sup> Holding up these few gifted individuals as models for future success can be quite discouraging for the average youngster who is failing to achieve the goals reached by ordinary boys and girls of his own age.

### *Language arts*

Children with serious speech impediments and communication disorders are at a disadvantage and will be deprived of experiences necessary for maturation unless the educational programme provides rich opportunity for conversation. Talking together each day is exciting and essential in developing reading skills. A conversation board may supplement the child's unintelligible speech. This board may contain well-spaced pictures of the child's family members, his home, school, and other subjects he will want to discuss. By pointing or even looking at the picture as he talks, the children and teacher will better be able to understand his verbal contribution.

As the child matures, he will attempt to read to gain information, to decipher the accompanying pictures, to satisfy curiosity, and to obtain directions as in travel or cooking. Reading for protection including recognition of usual warnings, street signs, and other necessary words and phrases is of practical importance to the growing child.

Emphasis on language activity as part of everyday life cannot be overlooked. Use of the telephone, reading the newspapers, and carrying on a discussion of current topics and issues, as well as awareness of grammar principles in writing and conversation will be helpful to the child who is limited physically.

For some children learning to read is exceedingly difficult. Due to neurological impairment, they might have trouble in focussing attention on the designated picture and/or printed symbol or word. Although his pupils may be able to see adequately, the teacher is interested in their ability to recognise or interpret what they see.

To read, one needs visual and auditory discrimination, recognition of shapes, concentration on specific objects, auditory and visual memory. Many youngsters have difficulty in remembering sounds and in distinguishing foreground from background, separating the "near" from the "far away" in a picture or screening out extra noises in a room. Noise of passing cars or of shouting in the streets may be more attractive or disturbing than the teacher's voice. Children with these difficulties will be impeded in interpreting reasoning, and in following through with any academic tests.

Ability to follow a line of thought without undue distraction, and to remember what has been said, and to know how to say it, are essential for speaking well. For the child with "brain injury", these might be difficult. He needs help to participate in non-threatening speech activities which are important to him.

Writing activities in school for some severely physically disabled child may be relatively unimportant. Since legibility is often difficult to obtain, typing may be taught for speed and clarity.

For writing, children may need a highly selective programme to develop effective hand-eye co-ordination (ability to make motions according to a specified pattern), spatial relationships (judging of distances), visual perception (ability to distinguish different shapes, sizes, and directions) as well as memory for what has preceded.

Planning group programmes and participating in them are growing experiences for children who are crippled. The teacher must, however, be careful to select activities from which the child will derive satisfaction, yet in which he will be accepted by the particular audience. Public displays may result in unfavorable impressions and

generalizations of children who are disabled. They should, therefore, be selected carefully.

### *Arithmetic*

Arithmetic too might be difficult for the neurologically impaired, because they might not have skill to differentiate size, shape, amounts, in recognizing abstract symbols, or in following an orderly sequence. Among their problems might be defective visual and/or auditory recall; difficulty in relating factors one to another, in reasoning and difficulty in communicating ideas. Although concrete number work might be relatively easy for a particular child, difficulty is usually apparent in abstract calculation and generalization. Sometimes a child can read a "3" and understand it but cannot write the number.

Mathematics for these youngsters will be developmental. The teacher will take opportunity for exploring number concepts in the opening exercises, during the free-play period with blocks and beads, and as the child plays in organized games.

Trips to the store, well-planned by the teacher, together with other staff members and the store proprietor, will be effective if preceded and followed by appropriate discussion and application of concepts within the children's capacities. Concrete number experiences dealing with items of significance in the everyday lives of these boys and girls are stressed, since many of them have difficulty in counting in sequence and in designating one number for each object in successive order. An alert teacher will find abundant opportunity during the day for first-hand experiences in orderly counting and comparative concept formation.<sup>12</sup>

### *Science*

The boys and girls who are physically disabled can derive satisfaction and intellectual stimulation from scientific endeavours. Initial exploration will be realized through collecting nature objects, classifying them, and mounting them for display and further study. Similarly interest in caring for pets, listening to radio, establishing work habits and general appreciation of nature are significant for physically limited children who may rely heavily on physically nontaxing leisure time activities and need solid bases for communication with other boys and girls of similar age.

## *The arts*

Enjoyment of music is almost universal and can be fostered in a variety of ways. Children can sing, play a musical instrument, participate in the school orchestra, or study the classical music. For some, listening is sheer enjoyment; for those with understanding, it is a vital learning experience. However, participation will afford greater pleasure to the majority. Creating rhymes can be part of any school programme.

Music is an important therapeutic medium for children with physical disability.<sup>13</sup> Singing in harmony may be beyond the capacity of the child, but interestingly, the relaxation of music and its regular beat may well enhance the speech of the child with athetosis. In some instances, the use of wind instruments has been medically prescribed for muscle control and strengthening.

In the field of art, boys and girls will participate in many ways. An early curricular experience might include the use of sponges dipped in water and paint and used on a chalk board or larger paper. The sponge will be relatively easy to grasp or might be attached to the hand of the child without ability to grasp or hold. Finger (or arm) painting is satisfying and often therapeutic for the child, once he has learned to participate and is willing to forget himself in the art activity.

The art product of a disabled child might appear immature as well as less discernible and attractive than the product of a youngster with more normal hand-eye co-ordination and abundance of opportunity for readiness activities. Important for the teacher is acceptance of the child while providing him with opportunity for discussion, recognition, and encouragement. Appreciation of artistic creations of others including the classmates as well as the great masters will open a broad avenue of exploration and pleasure.

### **Secondary School**

In this section we deal with the optimum conditions under which youngsters above the age of 12 will receive a comprehensive secondary school education of a kind suited to the specific objectives for each child.

All handicapped children cannot adjust to the routine of the average high school; all high school programmes are not suited to the

needs of a larger per cent of children with crippling conditions. Democracy in education does not mean that all children should be registered in the same programme, use the same books, and achieve the same specific goals. However, true consideration of life adjustment presupposes a curriculum focussed on the child's participation, not only in the academic programme, but, wherever possible, and with necessary modifications, in the interest groups, parties, and student organizations. But, for some children, this will require extensive personal preparation in grooming, learning appropriate skills, and in emotional readiness.

### *Physical growth*

Some new, often subtle elements are present in the older group of boys and girls with orthopaedic disabilities. Two major groups at this age are the newly injured children who have well-established attitudes toward disabilities and those with spinal curvature who require surgery at adolescence. Children with progressive disabilities such as muscular dystrophy, will possibly be in need of increased attention and care at adolescence.<sup>14</sup> Those teenagers with congenital anomalies tend to show relatively little improvement except where major surgery has been prescribed. It is important to prevent further deformity during this time of rapid physical growth. Care will be taken that the youngster does not over-exercise a strong muscle group while neglecting to use the weakened areas. Poor selection of physical activities will tend to magnify body imbalances and alignment deficiencies. Health emphasis will be placed on maintaining good body weight.

Providing opportunities for participation in regular outdoor team sports will be difficult for the child in a wheel-chair since competition is keen and the desire to win in adolescence is strong. Depending on the agility of the individual, boys and girls skilled in ambulation with braces and crutches will enjoy many formal and informal large muscle activities.

Physical maturation and sexual development in adolescence merit adult planning and possible programme changes. Personal hygiene for these boys and girls will be stressed. The onset of puberty introduces new elements of self-care and the resultant desire for privacy. School personnel and parents will be aware of both and attempt to work out effective management for each child. Learning to put on eye lash and earrings, to shave, and dress like all other

teenagers will require attention both for their physical and social implications.

### *Social-emotional adjustment*

A pressing problem in adolescence will be adjustment to bodily changes and emotional conflicts common to most boys and girls. Those with crippling conditions are faced with a serious re-evaluation of self. How they compare with others and identify with the gang are questions for study. Bodily appearance and gracefulness of movement take on new importance in adolescence.<sup>15</sup> At this age, probably the child's disability creates most concern, self-consciousness, and dissatisfaction with the physical self. Reactions of others to the disability are a major part of the adjustment problem. As pointed out by Dembo and her associates, to accept disability, one must change one's value structure.<sup>16</sup> Once accepted, they found the negative attitudes of the non-handicapped to amputations becoming a challenge rather than a threat. The desire for conformity among teenagers is well known. Boys and girls who are crippled are no exception, according to Stafford.<sup>17</sup> In a study of 200 college boys with physical disabilities, he arrived at the following educationally significant conclusions: (1) lack of satisfactory knowledge and understanding of the disability results in fearfulness of possible consequences; (2) this group seeks conformity and group recognition; they want to be treated as normal; (3) they resent segregation; and (4) visible defects are more disturbing than those not easily noticed. These are important considerations in special education.

Stafford also found that braces, crutches, and casts create more anxiety in adolescence than at any early age and that minor ailments often become a source of major concern. Evidences available pointed to the fact that the physically disabled youth resent sympathy shown to them while they appreciated 'understanding'.

Quite naturally questions regarding marriage, and vocations arise. With the spread of radio and the realism in dramatic and literary presentations, even the most sheltered child is no longer shielded from the prominent values of normalcy in his culture. Resultant comparisons can be painful. Consequently, skilled counselling for these youngsters should be made available through the school. Otherwise, outside help should be sought. Again, at this period of development, parents will benefit from help or support in accepting realistic educational

and vocational objectives as well as in appreciating the youngster's interests, patterns of working, and life goals.

Only with team planning and co-ordination, can a realistic guidance programme be executed. Need for consistency in talking with the children, their parents, and the staff is evident in a total programme and long-range planning. One person's lack of sensitivity can impede progress in a comprehensive programme designed to diminish the anxieties of a child who is crippled. Romano illustrates this by his description of the dangers in use of medical vocabulary which is not understood or is misunderstood by boys and girls during ward rounds<sup>18</sup>.

### *Social studies*

The basic programme for older boys and girls centres around citizenship and problems of living.

Preparation for home and family life is essential for boys and girls who are crippled. Such a programme is based on the present needs, problems and concerns of each pupil. In the process of studying personal needs, many fears of independence along with the over-all adjustments to adult living will be minimized. Important as preparation for marriage and parenthood will be, the alternatives, too, must be explored and discussed. Boys as well as girls may be required to live alone, or with another adult, and consequently, be responsible for cooking, cleaning, and maintaining a household as well as providing for their own financial support. Value of such an approach to the everyday living problems of those with crippling conditions is readily apparent. Devising means of shopping, traveling to and from work, and entertaining guests will add to the overly dependent youngster's security and willingness to face the world without the protective arms of his family and teachers. Developing sensitivity to others and contributing to their happiness will be one of the greatest assets of the disabled person, whose deviation received undue attention and who enjoyed the compensatory services of others.

In social studies, the school can contribute immeasurably to the disabled pupil's preparation for his life's work. Not only will job possibilities be explored, but each student will attempt to match his abilities with the job requirements. In some schools in the U.S.A. actual work opportunities are provided within the shelter of the school curriculum.<sup>19</sup> Others work closely with community rehabilitation agencies offering an analysis of the youngster's work potential.

If after attempting school-work programmes within the school the counsellors and teachers consider individual boys or girls capable of more competitive employment, part time experiences in the community should be arranged. For some, this represents a half day's attendance at classes and a half day's attendance on the job. Other facilities include supervised after-school, weekend, or summer employment for which they are paid. Following the pattern of realistic part-time placement, these youngsters can prepare for a specific work experience, spend a month on the job under the supervision of a counsellor, and then, for the next month, return to school to evaluate the experience and prepare for the next 30-day assignment. Working closely with the parents and the co-operating employers will facilitate this operation and enhance its value.

Preparation for such experiences is important from many points of view. Selection of suitable work will affect the youngster's future attitude toward employment. Appreciation of the total function of the corporation, industry, or programme will help the boys or girls see the importance of each position as well as the preparation and skill required of those in leadership roles. Both pre-employment and post-employment evaluations of the pupil's on-the-job talents, abilities, and weaknesses will promote realistic guidance for those who are physically disabled. Some follow-up by school personnel on the part-time placement of these children is highly recommended.

For the gifted youngster, such experiences will encourage further schooling and vocational preparation; for the less intelligent but capable, it might furnish a satisfying experience and reduce feelings of inadequacy and uncertainty. For those unable to compete in industry a more realistic self-evaluation and vocational placement will result. In each case, however, the support and interpretation of the school staff members will contribute to the programme and increase the value received.

The above-mentioned aspects of the social studies programme are essential in preparing the disabled boy and girl for present and future living, but should, by no means, preclude the all important aspects of the cultural value derived from history and geography. Without an appreciation of the world in toto, the child's understanding of national and international affairs will be limited. Appreciation of the principles and ideals on which our democratic living is based will be derived to a great extent from the programme of social studies in

If after attempting school-work programmes within the school the counsellors and teachers consider individual boys or girls capable of more competitive employment, part time experiences in the community should be arranged. For some, this represents a half day's attendance at classes and a half day's attendance on the job. Other facilities include supervised after-school, weekend, or summer employment for which they are paid. Following the pattern of realistic part-time placement, these youngsters can prepare for a specific work experience, spend a month on the job under the supervision of a counsellor, and then, for the next month, return to school to evaluate the experience and prepare for the next 30-day assignment. Working closely with the parents and the co-operating employers will facilitate this operation and enhance its value.

Preparation for such experiences is important from many points of view. Selection of suitable work will affect the youngster's future attitude toward employment. Appreciation of the total function of the corporation, industry, or programme will help the boys or girls see the importance of each position as well as the preparation and skill required of those in leadership roles. Both pre-employment and post-employment evaluations of the pupil's on-the-job talents, abilities, and weaknesses will promote realistic guidance for those who are physically disabled. Some follow-up by school personnel on the part-time placement of these children is highly recommended.

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which other cultures and peoples are considered.<sup>20</sup> For the future college student, these over-all learnings are cardinal and will be realised as part of the whole programme.

### *Language arts*

In a well co-ordinated programme, language arts cannot be separated from social studies and guidance. The language needs of each child should be emphasised in a developmental programme. Throughout their school lives, some children will receive speech therapy on a regular basis. Here co-ordination is even more imperative. Communication, sometimes difficult for the adolescent who is crippled, can be facilitated through contribution to the school newspaper and small discussion groups on topics of interest. Concentration on presenting a topic of interest may distract the youngster from his own inadequacies.

Even for homebound or hospitalised children the school newspaper is effective. Whenever possible, these boys and girls will appreciate having their contributions appear in the community school organ. Knowledge of library facilities and reference sources will be of particular aid to the physically limited.<sup>21</sup> Use of book mobiles and other services provided by the library will broaden the horizon of the youngsters unable to travel freely. Enjoyment of literature will be an important asset and pleasurable pastime, a source of communication with others and a basis for conversation with those more capable of travelling and obtaining first hand information of the world about them.

### *Mathematics and Science*

Science study will help the children further develop critical thinking, open-mindedness and problem solving techniques. Both in mathematics and science, courses will be selected on the basis of interest, ability and future needs. High School science experiments require steady balance and fine hand-eye co-ordination. This may prove difficult for some children with crippling conditions. Adaptations of materials, supports for holding equipment, student grouping and course selection must be given consideration in over-all planning.

### *The arts*

Older boys and girls with crippling conditions will enjoy music, art, dramatics and dancing not only for accomplishment and

appreciation, but for the opportunity to work and play with school-mates having similar interests. Important for these children is the teacher's recognition of the possible awkwardness and unconventional manner of participation of the child with limited arm and hand movement who might paint with his feet or by holding the paint brush in his mouth. Credit and praise should be given only when the effort truly merits attention.

#### *(4) Transportation*

Many children suffering from physical handicap are deprived of education, simply because they cannot travel to their schools by ordinary modes of transport. Special education programmes for these children must, therefore, include provision of suitable transport.

#### *\*(5) Counselling*

Counselling service may be desirable in any programme of education but for the handicapped it is a dire necessity. The crippled person cannot afford to take a chance by following the trial and error method of working in several occupations until a suitable one is found. In the United States, this problem is solved by the provision of special counsellors or co-ordinators. In Great Britain there is a special youth employment service which provides facilities to a young person taking up employment. It advises them on the choice of a suitable occupation and helps them to find satisfactory employment. Special youth employment officers give guidance to those in the last year of the school. Vocational guidance of the crippled child must start early and must be based on an evaluation of his physical and mental capabilities and limitations. It is insufficient to give merely the best possible education and let the future take care of itself. Education is brought to naught unless it leads forward to the choice of right career. The assignments and accomplishments of each are indicated in the available columns. Selections for each child are based on his age, physical limitation, achievement level and maturity. Spacing on the page, need for drill and variety, and the importance of materials with interest value are adjudged.

#### *(6) Recreational Facilities*

Crippled children like all other children need recreation. Play serves a number of useful purposes. It is a spontaneous outlet for

excessive energy; it is an expression of the joy of living; it promotes physical growth through exercise of muscles and nerve cells; above all, the child at play, rehearses the serious business of adult life. Much of the active type of play is denied to the crippled child, but by no means all. Many of the benefits of play can be obtained through the child's imagination, if he is able to manipulate blocks and sticks, toy animals and the like.

The play of the crippled child is hampered by lack of material and lack of companionship. A normal child soon gets tired of playing with a crippled child. The play material for crippled children must serve two purposes:<sup>22</sup> (1) It must meet their emotional needs; and (2) It must stimulate the use of muscles in need of exercise. Play material for modelling and building should be included for all ages and adapted to all types of disability. Clay is an ideal material for giving expression to the child's imaginative genius as well as for developing his paralysed hands. Another type of play material is one which gives muscular exercise. It includes frames on wheels to aid walking, and carts and wagons. A third type of play material gives expression to imagination. This includes dolls, small cars, aeroplanes, ships, animals, etc. Painting also falls under this category. Gardening, stamp collecting, carving and cycling are individual pursuits. They do not require the company of other children. The school must arrange for providing the crippled child with enough facilities for recreation. Indoor games like chess and draughts, snakes and ladders, radio and music provide passive pastimes for the bed-ridden child.

Man cannot live well without companionship. Camping, scouting and picnicking enable a crippled child to learn co-operation, tolerance and team-work. He is socialized through recreation. Such activities provide the handicapped children with wider horizons and deeper interests. Adventure has the same fascination for the crippled child as for the normal child. The crippled child is anxious to be like the others. Scouting gives him a chance to participate in social life and to be like others. The disabled scouts and guides, are known as extension scouts and guides. In Germany and Switzerland, there are many organizations promoting scouting for the handicapped.

### *(7) Teachers of the Orthopaedically Handicapped*

Teachers of crippled children should be selected; no one without sympathy; patience and imagination should be chosen. Today, the

importance of personal relationship between the teacher and the pupil is recognized by all educationists. In modern education, the knowledge of the teacher is not enough; what is required is a good and understanding personality. "It is wise to remember that we teach with what we know— we educate with what we are".<sup>23</sup>

As it was stated earlier, the teaching of handicapped children is similar in many respects to the teaching of normal children. The only difference is that in the former case, the teacher is called upon to give more of himself or herself than in any other line of teaching. Teachers for handicapped children are required to have two types of training: (1) The regular course for teachers of normal children. (2) Specialized training in their particular area of teaching. Several patterns of educating teachers of handicapped children are in vogue.

In the United States, for example, apprenticeship training or cadet training, has been a very common method. This method of instruction envisages that the students in training spend a year in a residential school under a programme which consists of formal instruction by staff members, together with opportunities for observation and teaching practice. Another method is that of offering courses in professional training at the teachers' colleges and universities.

The teachers of crippled children should have capacity for self-direction.<sup>24</sup> They have less assistance and less supervision and, therefore, should be able to administer the programme themselves. They should have patience and perseverance. Things which normal children learn incidentally, must be specifically taught to crippled children. It is thought desirable that the teachers of crippled children should be physically fit, at least as regards orthopaedic handicaps. They should be well-adjusted from a psychological point of view.

## *(8) Allied Services*

### Teamwork

Whether the allied services are provided by representatives of three professional disciplines or fifteen, the keynote of function is teamwork—working together for the benefit of each child. Although the special functions of each team are quite clearly defined, overlapping of responsibility is not uncommon nor is it always undesirable. Each member has a contribution to make in the team conferences and is

obliged to express pertinent professional opinions on matters important to the child's welfare when he is so qualified.

### *Physicians*

A number of persons other than teachers and school administrators work closely with the child who is crippled. The professional personnel responsible for the physical diagnosis are the physicians. After consideration of all available information, they will prescribe for the child, direct the work of the therapists, define the child's physical condition in terms of limitations of activities in which he can engage, and communicate with all concerned. In a complete programme for crippled children, a number of medical specialists will be available for consultation. Although the orthopaedist or the physiatrist is usually the medical person in charge, the paediatrician, psychiatrist, and neurologist are also essential.

### *Physical therapists*

Working closely with the teacher is the physical therapist. "The physical therapist treats disabilities resulting from congenital defects, disease, and injury through the use of physical means such as heat, light, water, electricity, massage, and by therapeutic exercise. He works with the child in physical rehabilitation procedures such as gait training and instructing and other functional activities. He also teaches not only the patient, but his family or attendant as well to carry on certain aspects of treatment and the care and use of equipment and appliances".<sup>25</sup>

This professional worker co-operates with the teacher in checking the child's physical functioning in the class room, suggests most appropriate means of assisting him in movement and plans with the teacher the best ways of co-ordinating the physical therapy programme with the school activities. For such concrete help, it is advisable to have the therapist spend some time in the class room.

### *Occupational therapists*

Particularly important to the teacher working with preschool children, is the occupational therapist. According to Wellisch, occupational therapy is any activity, mental or physical, prescribed by a physician and guided by the therapist for the distinct purpose of contributing to and hastening recovery from injury.<sup>26</sup> The functional

occupational therapy programme is carried out through planned play activities which motivate desired hand, arm, head, tongue, and mouth movements, which will develop basic coordinating patterns of motion.<sup>27</sup> In this programme, activities for academic readiness play a big part. For example, the therapist working with the teacher will recognise the need for establishing a left to right hand and eye movement pattern, and share with the teacher the responsibility for promoting effective work habits and appreciation of productive endeavours.

### *Speech teachers*

Wendell Johnson has indicated that every class room teacher teaches speech.<sup>28</sup> In the discharge of this function by the teacher of physically disabled children with evident speech handicaps, the need for assistance from professional speech teachers cannot be minimized. Some therapists have found major aspects of their programme more productive when carried on directly in the class room. In this way, the children can be assisted in their direct participation in oral discussion in school. Where extensive drill or freedom from distraction is indicated, speech work is done in a separate room. Joint projects between the speech teacher and the class room teacher are plentiful, can be fruitful, and are, in general, highly recommended in an over-all programme for children who are crippled. The speech teacher's work will be concentrated on the prevention of speech defects, developmental speech for all children, especially those whose communication is delayed, and on remedial work for those with obvious speech deviations. According to Johnson, the speech correction programmes should be supervised by professionally trained speech correctionists who serve as consultant for class room teachers, conduct in-service training courses, and give individualized and small-group instruction to the more severely affected children.<sup>29</sup>

### *Social workers*

Unfortunately, social workers are seldom on hand to help teachers of handicapped children. The benefits derived by the children and their families, as well as the total programme operation, are immeasurable. Social case work has been described as "..... an art in which knowledge of the science of human relations and skill in relationship are used to mobilize capacities in the individual and resources in the community appropriate for better adjustment between client and all or any part of his total environment."<sup>30</sup> The social case worker is the central liaison person between the school and the home

and the community at large. The background of the social worker is such that he can facilitate the individual's working through some devastating personal problems which the teacher is not prepared to handle. As a result of professional communication with the social worker, the teacher will tend to be more sensitive to the child and his family problems and better understand the child's behaviour in school.

### *Psychologists*

The psychologist, an essential member of the team, has as his main function that of evaluating the intellectual, emotional, and psychosocial behaviour of the child. His evaluations are especially important to the teacher who seeks diagnostic help in determining the perceptual ability of children having difficulty with school work. The counselling function of the psychologist is on the increase. He and the social worker co-ordinate their efforts in parent and family counselling. In studying the child's school behaviour, the psychologist will be at an advantage in working with the teacher in a class room and in observing the inter-personal relationships between teacher and child, as well as the child and his classmates.

### *Recreation teachers*

Some programmes employ a full-time, specially prepared recreation worker. Where such a person is available on a daily basis, he works in conjunction with the physical therapist and in accordance with medical directions in planning activities for the children on a daily basis. Other recreation directors are employed essentially as camp personnel operating during the summer season or on weekends during the school year.

### *Bus drivers, class matrons, and attenders*

No discussion of the allied services for children who are crippled would be complete without recognition of the role played by the bus driver and other transportation personnel, the school matron, and the attender. The transportation driver is often required to lift or at least assist heavy children in ambulation as well as in boarding and unboarding the school vehicle. His technique in so doing should conform to that advocated by the therapist in charge, and he too should have complete awareness of the objectives of the therapy programme. For example, if the child can walk independently but prefers the luxury of being carried, the driver must abide by the programme established for the benefit of the child.

The matron and other class room attendants are vital to the management of the class room as they assist children in moving from one place to another, in toileting, in preparing youngsters for refreshment and rest periods, and in contributing to the smooth working schedule necessary for the diverse programmes.

Not to be overlooked is the role of the school attender in the over-all programme for crippled children. It is he who must accept the unusually scratched floors and the results of unavoidable spilling due to the children's lack of co-ordination. He is responsible for care of the physical facilities used in education. His attitudes toward these children will be transmitted to others in the school as he moves from class room to class room and into the community discussing the programme as he sees it. Without his co-operation, it is doubtful that any programme could work to maximum effectiveness.

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## CHAPTER XII

# EDUCATION OF THE VISUALLY HANDICAPPED

The general principles, aims and subject matter involved in the education of the visually handicapped are not basically different from those pertaining to the education of the sighted. The education of the visually handicapped, like all special education, encompasses special training of teachers, special facilities and equipments and some curricular modifications.

It is estimated that ordinary educational experiences are 85 percent visual. Since the blind child is deprived of this type of experience, the adaptation required for his education requires a shift from vision to the auditory, tactual, and kinesthetic senses as avenues of instruction, learning, and guidance. These needs have been met by teaching braille reading and writing, using many audio-aids, and constructing and using models, as well as embossed and relief maps, graphs, and geometric designs. Because of the importance of independent mobility for the blind child, instruction in orientation training and experiences designed to increase his control of the environment and of himself in relation to it are becoming part of special education programmes for the blind.<sup>1</sup>

### **Specific Objectives**

Prof. Chikao Sato Tue points out that while the purpose of education for the visually handicapped is the same as those for regular school children, we have to pay attention to the following additional points:

(a) Fostering the ability to walk, braille literacy and training for the usage of remaining visual acuity and other senses, and to develop good habits in the use of these senses.

(b) Providing various experiences and fostering social adaptabilities.

(c) Forming good habits. The habit of wanting to learn everything independently or voluntarily should be cultivated, so that the other handicaps that accompany the visual handicap may be overcome. At the same time, emotional stability will be enhanced once this habit is acquired.

(d) Forming proper attitudes and abilities, so that they may be able to avoid or escape dangers which come across the way of the visually handicapped.<sup>2</sup>

According to Johan L.Vander Zwan the hunting of many certificates, the grasp of a large gamma of knowledge and the training during many years for a profession, have to be dethroned as kings of the blind schools. Both the living blind human being and the community have a right to an education that will develop their aptitudes to the utmost; learned abilities are only the humble and necessary servants of such an education.

It is important that the educational pattern should prepare the blind child to develop a positive attitude to live in a society which is evolving in and changing at an accelerating tempo.

## **Systems of Education**

There are three systems of education for blind children now followed in different countries. They are: (1) the residential school; (2) the integrated and co-operative programme; and (3) the itinerant teacher services.<sup>3</sup>

### *The Residential School*

This is the oldest form of education for visually handicapped children. It consists of an educational programme in a boarding school. The first school for the blind (Institution Nationale des Jeunes Aveugles) started by Valentin Haüy in 1784 in Paris was residential in nature. Throughout the world there is an undetermined number of these schools

which provide in their communities the only educational programme for blind children.

### *The Integrated and Co-operative Programmes*

These programmes bring blind children together in one school in order to receive their education through the combined efforts of full time special resource teachers and the regular teachers and staff of the particular school. The education of blind with sighted children had its beginning at the turn of the century in the United States, but European educational leaders had recognized the value of such a programme and provided a modest beginning for it prior to the time residential schools were being started in U.S.A.

The co-operative plan is one in which the blind child is enrolled with a teacher of blind children in a special room from which he goes to the regular classrooms for a portion of his school day. In this plan the special room becomes his home room from which his programme planning stems, in co-operation with the regular classroom teachers.

The integrated plan is one in which the blind child is enrolled in the regular classroom. Available to him and to his regular teachers is a full-time qualified teacher of blind children and also a resource room. The regular teachers turn to the teacher of blind children for assistance in planning the child's programme, for guidance in adapting the classroom procedures, and for providing, as necessary, specialized instruction appropriate to the blind child's needs.

### *The Itinerant Teacher Programme*

In this programme, blind children are educated in regular schools nearer to their homes and receive the service of a qualified itinerant teacher. As a recognized programme, with proper administration, definitely scheduled itinerant teacher service, ample equipment, and consultation for the teachers and administrators in each school, it is relatively a new system.

It should be mentioned that this programme has had great appeal for the parents of blind children who feel strongly the need for a warm and continuing family influence experienced at home and in the community. For many different reasons, however, the very nature of the problems involved in such a programme has caused many administrators to look at it with some concern. Not the least of those

who have expressed dismay are some of the administrative and consultative people in the field of education of handicapped children. For the record, however, the most enthusiastic people recommending this type of educational programme for blind children are those with actual experience in developing it with the full knowledge of all of its problems. Almost without exception, they seem to feel that both the sociological and educational gains for the child who attends school in his local school far outweigh the problems.<sup>4</sup>

No further discussion on the various systems of education is attempted here as it has been given in Chapter X.

## **EDUCATION OF THE BLIND**

### **Curriculum**

The word 'curriculum' is said to have a Latin origin where it implied a course which is traversed to reach a goal. Thus in our context, it would mean a course of study which pupils and teachers cover to reach the objectives of education.

For a long time in the past it was believed that the curriculum was the tool in the hands of the artist (teacher) to mould his material (the pupil) according to his ideals (objectives) in his studio (the school). However, in the present times with the emergence of the pragmatic philosophy which treats of education not as a study of life but as life itself, the curriculum is no longer a closed prisoner of classroom walls or confined to the dark pages of school text books. In the words of the Indian Secondary Education Commission, "according to the best modern educational thought curriculum does not mean only the academic subject traditionally taught in the school, but it includes the totality of experiences that a pupil receives through the manifold activities that go on in the school, the classroom, the library, the laboratory, the workshop, the play-ground and the numerous informal contacts between teacher and pupils. In this sense the whole life of the school becomes the curriculum which can touch the life of students at all points and help in the evolution of a balanced personality."<sup>5</sup>

The curriculum, then, will consist of activities and occupations that will give the child suitable knowledge and experiences, bring about his all-round development and satisfy these essential needs both inside and outside the classroom.

From the above consideration it is obvious that any curriculum whether designed for the seeing or the blind students must have the following general principles as its guiding motives:-

1. The curriculum should have adequate variety and flexibility to allow for individual differences and adaptations to individual needs and interests.
2. The curriculum must be vitally and organically related to the community life interpreting to children its salient and significant features and allowing them to come into contact with some of its important activities.
3. It should emphasize productive and original work and initiative and adaptation to local needs and conditions.
4. The curriculum should be designed to train the students not only for work but also for leisure.
5. It should not stultify its educational value by being split up into a number of isolated, un-co-ordinated water-tight compartments. Its subjects should be interrelated and within each subject, the content should, as far as possible, be envisaged as broad fields or units which can be correlated with life rather than being narrow items of information.<sup>6</sup>

The curriculum available to blind children in any school programme should be fundamentally the same as that which is developed for sighted children. The mastery of subject matter in all of the broad curriculum areas should be achieved at the appropriate levels of development according to the same standards that are required of sighted children. Blind children in any school system might represent a cross section of any school population: they may be gifted, average or retarded; they may present challenging problems of emotional character; or they may provide the greatest enrichment to their teachers and their classmates. Results of achievement tests have demonstrated that blind individuals have varying potentialities just as do those who are sighted. The records of adults in institutions of higher learning also have demonstrated ability comparable to that shown by sighted individuals.<sup>7</sup>

The variation in the education of blind children related to the general subject matter areas is found particularly in the procedures

used in teaching, the specialized equipment needed, and the objective evaluation of results in order to make sure that the learning situations are productive and the educational experiences are real for blind children. The challenge of the teacher is to attempt to bring into focus for the blind children many of the educational experiences which, for sighted children, are learned chiefly through visual observation. This necessitates bringing into eye range for the child with limited vision and within arms reach for the child who is blind the objects and situations in his immediate environment.<sup>8</sup> It also requires skillful interpretation of those objects and situations in the environment which cannot be observed at close range by these children.

Mastering the curriculum in all the areas requires particular skills on the part of the blind pupils. They need to grow in their ability to listen, analyze, and remember what they hear during the study of the material which is required throughout their school years. They must learn to operate their equipments with sufficient skill to conserve energy and work rapidly enough to fulfil the demands of their daily assignments. They should, with the help of their teachers, learn to feel comfortable in situations which are not clear to them. There is a certain amount of finesse and self control which is gained through actual living in a school environment where the climate is good for all children. This type of climate is productive for the blind children when it is possible for them to gain skill in judging the amount of help they need from the teacher and their classmates, and also when they can experience the feeling of strength and confidence that makes it possible for them to refuse the help which they do not need. These qualities are acquired in varying degrees in all children, but the blind child who recognizes them as very important for his success and communication with his friends, has to accomplish a necessary skill in functioning in his total school programme.<sup>9</sup>

### *Curriculum Planning*

Broadly speaking the educational needs which should form the basis for planning a curriculum for schools for the blind are:

#### **1. Independence in communication**

The blind child needs to be acquainted with the techniques of written as well as verbal communication, so that he may not be left behind in the quest for knowledge and may be able to read and write and speak efficiently.

## **2. Development and enrichment of concepts**

The curriculum should lay special emphasis on familiarising the blind students with the realities and objects of the world around them which are otherwise beyond their reach due to the absence of the synthesizing and almost ever active sense of sight. The content of the curriculum must encourage the students to utilize to the maximum their residual senses so that they have full knowledge of the things the seeing child comes to know of almost automatically through casual visual observation.

## **3. Sensory development**

Sense-efficiency in all possible spheres as well as multi-sensory co-ordination and dexterity should form an essential part of the curriculum in our school.

## **4. Acquisition of the basic skills of life**

With the non-availability of the avenue of visual imitation which is such a useful aid to learning for the seeing, it becomes imperative that the curriculum of our schools should make special provision for ensuring that the blind child is able to perform the activities of daily living in as natural and graceful a manner as possible.

## **5. Feelings of psychological security and emotional stability**

The activities in the schools for the blind must instill in their students a healthy confidence in their ability to cope successfully with the realities around them. This confidence should not be born out of a false sense of superiority or isolation; but, should arise from a true recognition of one's potential and possession of the requisite skills. The blind child, even more than the seeing needs to feel a sense of belonging, of being recognized by the members of the society, his siblings and peer-groups as a person with genuine rights and responsibilities. The curriculum designed for these students must never overlook the above facts.

## **6. Vocational skills**

The curriculum in the schools for the blind should have a definite vocational bias and should give their students useful training

in this direction not so much in terms of specific vocation as in training their practical aptitudes in the preparation for definite vocational work later.

## **7. The need for self-expression**

The curriculum should provide the blind children with carefully planned and organized avenues for expressing or ventilating pent-up energies and feelings. This letting out of the emotions in a creative manner is essential in fostering healthy attitudes amongst the students.

## **8. Perception and appreciation of the pleasurable and beautiful in life**

In order to remove the drab and dreary routine of life blindness starts to thrust on many an individual afflicted by it, the content of the curriculum must strive to make our students alive to and interested in pleasures and joys of the daily going-on in the world around them. They must also be familiarized with substituted means for a right appreciation of the beautiful if they are really to share the happiness and sorrows of society in an equal measure with their sighted counterparts.<sup>10</sup>

These, then, are some of the fundamental principles which those entrusted with the task of planning and developing curriculum in schools for the blind should never lose sight of.

Dr. Frampton, a leading figure in the field, in his noted book, 'Education of the Blind', has given a few more interesting guiding principles for curriculum development which are of a highly reflective nature. He cites the following as the principles that have guided curriculum-framing in his school, the New York Institute for the Education of the Blind:

### **1. Philosophical**

Educational process must aim at the ultimate reality. That reality exists not in the ideas nor in the activities derived exclusively from society but in the person who presents the ideas and performs the activities. According to Dr. Frampton, spiritual adjustment, appreciation of life's meaning and realisation of eternal values are equally important aims in the education of the blind as functional, social and vocational adjustment.

## **2. Ethical**

Education should endeavour to instill moral, social and economic values in the students. A harmonious development of these values is more significant than the mere acquisition of knowledge.

## **3. Psychological**

The balanced development of the whole personality of the child should be the focus of attention in the planning and development of curriculum. In the words of Dr. Frampton, "The synoptic approach of Gestalt psychology places the functional aspects of behaviour in proper relation to the total self being educated".

## **4. Pedagogical**

Experiences arising from purposeful activity should form the content of the curriculum. Based on the pillars of pupil-motivation, the activity should enable the students to adjust to the environment and interpret situations in a practical and meaningful manner.

## **5. Social and civic**

Experiences and activities comprising the curriculum should help the student to place in proper perspective the changes in operation and should enable him to carry out honestly his social and civic obligations. The group problems arising in the school should form the bedrock for the analysis and functioning of human relationship. In these days of progressive and highly rational educational content and methodology, critics find it difficult to agree fully and at some points, even partially, with the views of Dr. Frampton. They, however, consider his views as representing an interesting phase in the history of education of the blind.

In the light of the discussion we have had so far, we can formulate two important objectives of curriculum planning in schools for the blind:

1. The curriculum must meet the whole range of needs of the blind child in the spheres of academic achievement, cognitive enrichment, vocational training and physical development.
2. It must extend adequate opportunities of socialisation to the blind students so that they may be more easily and naturally

absorbed into the general fabric of society, not as passive recipients, but as active co-sharers in the mutual give-and-take of everyday life.<sup>11</sup>

The subject matter areas in general education which have been thought to require considerable adaptation are discussed by teachers in the following ways:

(1) In teaching social studies or science, where there are apt to be a great many laboratory experiments or demonstration lessons, it is important for the teacher

- (a) to allow sufficient time for orientation of the project,
- (b) to provide help from those who see to interpret experiences which may not have been clear for the blind child, and
- (c) to be skillful in evaluating the experiences in order to determine that which may not have been learned by the blind child.

(2) In subjects that involve mathematics, it is most important to precede number manipulation by sufficient number experience. Blind children may have suffered in their own homes and even in the early grades from far too little actual experience with number concepts which could have been gained from the environment.

(3) In such subjects as industrial education, art and crafts, and home economics, it is most important to have sufficient and constructive individual instruction without contributing to the dependence of the blind child. Careful selection and modification of equipments for these subjects can provide enrichment for blind children. As a rule, these areas of instruction can be quite visually demonstrated. One of the problems has been the fear for the safety of blind children. Good observation of blind children at work in a machine shop or in any other similar type of situation would alleviate these fears.

(4) Physical education has received considerable attention in the literature. There have been difficulties in some of the school systems providing education of blind along with sighted children. The emphasis placed on this programme in the residential schools has been marked both in the literature and in the demonstrations and also in programmes which these schools produce in order to invite the public to observe what blind children can do in this area. In recent years, however, the trend in the public school programmes is good as more blind children are being admitted to the physical education

classes. Again, there is fear expressed by the new teachers who have their first experience with blind children, but good orientation techniques are most helpful in providing security for these teachers.

(5) Music subjects have been given considerable emphasis in programmes for blind children. Perhaps, at times, there may have been some question concerning the amount of emphasis placed on this area in terms of the potentialities of the children. Certainly, good music appreciation and general cultural education are just as important to the blind as to the sighted children. The question can be, are the schools zealous enough in securing for the blind individuals with unusual talents sufficient opportunity for study and equally sufficient counselling in order that they may be able to pursue these talents in a future career. The mastery of braille, music and the technique of learning it and using it in all of the vocal and instrumental courses presents no difficult problem to the blind child who is capable and interested. The goal, it would seem, should be that the child does not master his music to the exclusion of other valuable areas of the curriculum equally necessary.<sup>12</sup>

### *Specialized Curriculum*

There are certain areas of the curriculum which require much more than adaptation in order to meet the educational needs of blind children. These areas have been described as "plus" factors because they are in addition to the regular curriculum required of all children. The specific factors of the curriculum have been described in the United States Office of Education Study under the following classifications:<sup>13</sup> "Knowledge of Medical Factor," "Understanding and Use of Reading and Writing Equipment," "Selection and Use of Aids and Appliances," "Curriculum Adaptation and Programme Adjustment," and "Knowledge and Ability to Work with Related Resources." The specialized curriculum has been further defined in relation to the school programme in the "Itinerant Teaching Service for Blind Children" according to the following areas: "Medical Factors," "Braille Reading and Writing Skills," "The Efficient Living Skills," "Creative Command of the Environment," and "All other Curriculum Areas."

### *Areas of Curriculum Development*

Following are the areas in the curriculum developed specifically for blind children:-

## 1. Language

Listening or comprehension, speaking, reading and writing are the four important linguistic skills which any child, blind or seeing must acquire during the course of his study of the languages. The child coming to the school for the first time has had at least some experience of using his mother tongue at home. Depending on the locality to which he belongs and the socio-economic and the educational status of his home, his speech might be containing gross errors of articulation, grammar and modulation. Correction of these common spoken errors must form an essential part of the curriculum of language-study. The next step here is to prepare the blind child to take up the reading activity at the appropriate time. A carefully planned phase of reading readiness must, therefore, be assigned a place of importance in the language curriculum. The transition from reading readiness to the actual reading activity must be accompanied by careful supervision and creative guidance from the teacher.

The teaching of braille should always form part of the language lessons and not treated as an isolated subject. In braille teaching emphasis should shift from a random memorisation of dot-numbers and combinations to giving the child a concept of the shape of each embossed letter and thus fixing the image of the whole alphabet permanently in his mind. The time taken in learning braille would, of course depend on the intellectual level, age, motivation etc., of the students but teaching in this area should not be abandoned in any fixed class and should continue till the teacher is fully satisfied that the learner has acquired all the skills involved in reading and writing braille.

The curriculum in this field should also make a special effort for improving the spelling of the blind students which have been found to be almost universally below the required standard. Various spelling games, oral and written exercises designed to stimulate and reinforce the spelling skills of the students should be organised. Familiarising the blind students with the use of the ordinary typewriter could also help in this direction and would make them more independent in the areas of written communication as well. The students should also be taught to write their signature in neat and legible script.

## 2. Mathematics

The introduction of mathematics in the curriculum of the schools for the blind, has three important aspects:

1. *Teaching of arithmetic* orally as well as with the help of specialised computing apparatus. Experience has proved that with minor modifications and by an imaginative use of the resources available, it should be possible for us to follow the syllabus of arithmetic prescribed for the schools for the seeing up to the middle or even higher secondary stage. It is important that a uniform code of mathematical signs is to be adopted for the entire country. Availability of better quality equipments such as abacii and Taylor frames must be ensured.
2. *Teaching of algebra*: If special algebra types are made available to the schools at economical rates, it should be possible for them to prepare their students for doing simple algebra sums as a part of their course upto the middle school stage.
3. *Geometry*: No teaching of mathematics, however efficient, can ever be considered complete without the inclusion of geometry. The aim of the teacher here should be to familiarise the blind child with the concepts of basic principles, shapes and angles of various geometrical figures. In this connection, Bonham devices with the requisite accessories, plasticine etc., should be made use of to present the information regarding geometrical shapes and figures in a concrete, factual and individualised manner.

Konrad Staroscik in his article *Modern Teaching of Mathematics in the School for the Blind* points out that in the G.D.R., formal teaching of mathematics has been overcome and that from the first school year particular stress is laid on training logical thinking. This is achieved by using basic terms and knowledge from logics and set theory, the training of arithmetic skill being pursued, very intensely. These principles have been carried through in the teaching of mathematics to blind pupils also. The theory of sets has been introduced into the teaching of mathematics from two aspects: Firstly it penetrates the content of teaching implicitly as a principle and is therefore continually taken into consideration by the teacher when preparing the lessons methodically. Secondly, certain concepts and modes of thinking peculiar to the theory of sets and to mathematical logic are subject of teaching in the classes 6 to 10. Among these are the basic terms: statement, theorem, definition, set, variable, and basic domain, satisfiability of the form of

a statement, solution set, subset, equality of sets, finite and infinite sets, vacant set, meet of sets, projection, uniqueness, ordered pair, function and class.<sup>14</sup>

Till the invention of Perkins Braille one of the greatest difficulties in the way of making mathematics both enjoyable and understandable to blind children was the extremely cumbersome way in which it had to be recorded. Most blind children wrote in braille using a large frame and stylus or a Stainsby writing machine. With both these pieces of apparatus all writing had to be done from right to left by embossing dots downwards; in order to read the written material the paper is to be reversed and the dots read from left to right. This made it almost impossible to set out any mathematical processes line after line. The other existing equipment, restricted to arithmetic only, was the Taylor Frame. This had been in use for nearly a century. Metallic square pages with a bar projection at one end and a two dot projection at the other were fitted into lines of octagonal insets. The symbol for each number was the bar projection in one of the first eight positions round a star-shaped inset and most of the operational signs were made with the two dot projection. Apart from being clumsy, no words could be recorded with this apparatus. Worse still, different tactile signs were used to record numbers on the Taylor Frame in the way in which they were recorded on the braille frame.

The invention of Perkins Upward Braille brought in a significant change. With this machine it was possible to write braille from left to right and to read it while it was being written. It made recording of mathematics in braille easy and convenient.

A few years ago experiments were carried out at the Sheffield school in U.K., in order to find out the extent to which blind children should be encouraged to record mathematics in the same way as seeing children. One of the staff at this school developed a linear approach in setting out arithmetical problems which enabled the blind child both to write and read always horizontally thereby vastly increasing efficiency. Instead of the vertical style in which arithmetic is written out by seeing children, a process was developed which encouraged the blind child to compute from left to right adding up to the 100's column and then the units column and so on. It was readily accepted because, at that time, more and more blind children were introduced to the abacus which is also based on the principle of working from left to right.

Side by side with this enquiry an investigation was set up to find an alternative to the Taylor Frame using braille symbols so that there would be only one symbol for each number concept instead of two. Several people in Europe had evolved different types of apparatus which were based on the braille principle. The one that was finally singled out for development was that used at the Paris School for the Blind where little cubes embossed with braille symbols were used with a plastic board in such a way that numbers could be represented in solid dot braille by manipulating the cubes in their square sockets. Eventually metallic cubes from the American Foundation for the Blind in Paris and a plastic board from the Paris School for the Blind were tested together. The resultant apparatus was found to be easy to manipulate and capable of standing up to vigorous usage. The cubes are called cubarithms and a manual was published to show how they should be used.

This meant that now the little blind child had the same symbol for individual numbers both to feel on the cuberithm board and to operate in braille. When concepts were formed it was fairly easy to record them in writing. At last the barrier between understanding number concepts, number relationships and recording them easily in a tactile form had been removed.<sup>15</sup>

### **3. Social Studies**

The aim of teaching social studies is to impart maximum meaningful information to the students in the three vital areas of the subject viz., Geography, History and Civics.

In the teaching of geography, to the blind students one must begin with their immediate physical surroundings and lead them on to acquire relevant concepts of space, time and distance in terms of their own school, city, state, country and other continents of the world as they progress through the different stages of their growth and learning. The syllabus of geography must awaken in the minds of the students a natural curiosity for the climates, products, coins, dresses, customs and values of different countries as well as specimens and similar other items of environmental interest. An intelligent use of embossed globes, maps and models would prove to be extremely beneficial in making an important subject meaningful and interesting for the blind child.<sup>16</sup>

The approach in teaching geography falls into three sections dealing with theory and practical work in the class room and work outside of the class room.

To supplement maps and diagrams which give no three dimensional representation, models can be used. As far as possible classroom learning should be linked with first-hand experience outside. In this context the importance of visits to local museums, waterways, and so on, cannot be overstressed, for here the student is usually allowed to handle various materials and he has on-the-spot access to experts of the community capable of answering the most demanding of questions.

Map interpretation work should be in relation to actual field observation. For example, the study of the map of a local area drawn in braille should be followed by a visit to that area and relating the map to the actual environment.

It is necessary to supplement instructions in geography with a knowledge of history and civics to enable the students to place the range of human activities in its proper perspective. Dramatisation of the various events of history and excursions to the places of historical interest are some of the means which can help to invigorate and enliven the history courses for the blind child.

The inclusion of civics in the curriculum as a part of social studies must also be accompanied by carefully planned field-trips to the centres of socio-economic and civic activities as well as talks by the reputed members of the public on the importance of the civic sense and the discharge of one's duties in the life of an individual and the nation.<sup>17</sup>

#### **4. Science**

The teaching of science must commence in the schools from class three in the form of nature-study. The aim here should be to acquaint the child with the plants and animals found in his neighbourhood in the elementary stages. From class six to class eight, the child should be familiarised with the general principles of physics, chemistry, biology and other allied sciences in a tangible and concrete manner. The child should be enabled to realise the practical utility of these scientific concepts in his everyday life. Wherever possible and necessary, ordinary scientific apparatus should be introduced to

the blind child and, if possible, equipment especially adapted for the teaching of science to the blind may also be obtained or even improvised with the help of skill, ingenuity and imagination of the science teacher.<sup>18</sup>

## **5. Techniques of daily living**

The term 'Techniques of daily living' is used in a very broad sense and it encompasses the whole range of living skills connected with the usual routines of everyday life. The object of including these activities in the curriculum is to make the blind independent and self-reliant in matters so vital for successful adjustment with the ways of the sighted society and which are easily and almost casually learnt by the seeing child at home and in the school.

The blind child should be taught the following skills as an integral part of the curriculum starting from the day the child enters school and at other appropriate stages of his schooling: dressing, personal hygiene, good posture, table-manner, toilet-training, combing, making his own bed and keeping the room neat and tidy. Starting from class 3 and going up to the Higher Secondary stage, such practical activities as cooking, laundry, first aid, stitching buttons and mending of clothes etc., should be taught. Blind boys and girls should also be familiarised with the techniques of shaving and make-up respectively at the appropriate time.<sup>19</sup>

## **6. Mobility**

According to Berthold Lowenfeld, mobility has two important aspects. The first is mental orientation and the other physical locomotion. He has defined mental orientation as 'an ability of the individual to recognize his surroundings and their temporal or spatial relation to himself' and locomotion as 'the movement of an organism from place to place by means of its organic mechanism'.

Training in both of these vital areas should be included in the curriculum with the object of developing the highest degree of independence in movement, according to each individual's optimum potential with the help of aids best suited to each individual on given occasions.

The task of providing instruction in mobility is a highly specialised job and must always be entrusted to the person specially trained for

the purpose and not assigned to any teacher at random, not even the physical training instructor as he could do more harm than good due to his inadequate training in the subject.<sup>20</sup> Attention must be given to training mobility and orientation instructors.

## **7. Physical Education**

In order to ensure proper physical development of the blind students and curb mannerisms amongst them and with a view to providing them with healthy and accepted avenues for the outlet of their energies, it is necessary to introduce physical education in the curriculum for schools for the blind. This education starting from the very first standard must be carefully graded to meet the needs of the students of different age-groups and should be imparted in a systematic manner. Games, sports, gymnastics, yoga-asans and other physical training drills should constitute the syllabus of this subject. Attempts should also be made to develop the sensory ability of the students to the maximum extent according to the potential of each individual. As an incentive, various sports events should be organised on a competitive basis for students from different schools for the blind in the area and the winners should be awarded attractive prizes.<sup>21</sup>

## **8. Craft work**

Increased emphasis is now being placed on the vocationalization of education and the need for such vocationalization is even greater for the schools for the blind. Teaching in crafts helps the students appreciate the dignity of labour besides providing them a good means of self expression. Most important, it enables them to acquire vocational skills which may well be used for earning a livelihood later, even without having a sizeable initial capital or a large establishment. Weaving, candle-making, recanning of chairs, basket-making, simple carpentry, plasticine work, wood work, knitting, clay-modelling, etc., are some of the activities which can easily be given a place in the curriculum. These skills also help the blind students in developing co-ordination among the different senses and give them the sense of location.<sup>22</sup>

## **9. Music**

This is a subject which has been taught in the schools almost since the establishment of the first schools for the blind and for obvious reasons it must continue to receive its due emphasis in the present

curriculum also. Music, both vocal and instrumental, must be taken up from the early stages of the child's schooling, but it must be remembered that not every blind person can turn into a musician just as not every sighted person can become an artist.

#### **10. Sex-education**

It is widely admitted now that sex-education must be made a part of the school curriculum and since the stimulus of visual observation through which the seeing children usually come to know of physical sex differences, is closed to the blind boys and girls, it is imperative to include sex-education in the curriculum. The objective here should be to give the students correct notions about sex and its functions by imparting to them adequate sex information by means of talks, carefully prepared stories and especially designed models.<sup>23</sup>

#### **11. Other Co-curricular Activities**

In addition to the subject-areas we have touched of so far, adequate emphasis should be laid on different co-curricular activities of a literary and cultural nature to reinforce the information made available to the students through various curricular subjects. Educational field trips with proper planning followed up by careful evaluation could serve as an extremely beneficial aid to learning in various areas of instruction. Dramatic performances, essay-writing, composition of original poems and recitation of inspiring and useful poems of various men of letters, preparation of science and social studies models, orchestral compositions and musical concerts and similar activities organized by the students in co-operation with the members of the school staff must always go side by side with the teaching of various subjects to ensure the all-round development of students.<sup>24</sup>

The blind boys and girls must also be encouraged to take up social work of one kind or another as a part of their curriculum. For instance, they could easily be sent to the hospitals to cheer up and read out stories from braille books to the sick and the wounded there. They could also be deputed to teach different subjects to the weaker and more backward sections of the community and instill in them the importance of civic and social values. Our object here is to give the blind students a feeling of being useful to and being wanted by the community and to acquaint them with the fact that they are not the only persons in society who are having to suffer the afflictions of disease and nature and that there are many others placed in a similar

or even worse state of affairs. Social activity of this nature would go a long way removing or at least, limiting the general pessimistic outlook often prevailing in many blind individuals and could also be a good means of public education about the potential of the blind. The introduction of scouting or girl-guiding programmes in our schools could also be a step in the right direction.

These, then, are the vital areas which curriculum in schools for the blind must consist of if we are to attain our aims of the education of the blind children.

## **Preschool Education**

Blind children enrolled in all types of programmes can be expected to function at a generally higher level when they and their families have been provided with a good individualized preschool service as early as possible after the nature and extent of the visual loss has been established. In order to make this service most effective, it should be available to the families of the children who in most instances are apt to be much more in need of professional help than the children. If school systems are not able to provide an intensive and professional service to the families of these children, they should be able to co-operate with agencies which have staff and other facilities which make this type of service possible.<sup>25</sup>

In many countries there are special teachers, home-visitors or counsellors who visit the families of the blind children. They discuss with them child behaviour and normal growth, training and social habits and especially a child's natural need for independence. They give suggestions about discipline. They encourage the parents and enlighten them how best to care for the child and how to plan the future.<sup>26</sup>

'Preschool Children' may be taken to mean blind children who have not attained the age of five. In reality, a blind child below 5 also requires the attention of a specialist to lay proper foundation for the life and career of a blind child. The parents are not in a position to cope with the task of training a blind child for want of knowledge or time or patience. So they would do well to seek the help of specialists.

The preschool blind children may be divided into two groups for purposes of training. The first group would be those between 0 and 2½ years of age and the second group would be between 2½ and 5 years of age.

### *Training of blind children below 2½ years of age*

It must be realised that children below 2½ years of age need the attention of their mothers constantly. Hence, it will not be possible nor even advisable to tear away the infants under 2½ years of age from their mothers' care. So we may have to consider the home as their training ground and help the training of such blind infants through their parents. The parents perhaps are to be guided by competent persons furnished with suitable literature.

It is a general assumption in dealing with the problems of any type of handicapped children that the handicapped children have more similarities than differences from the normal children. They are not "unusual" in all ways. The intellectual equipment, the emotional reactions and the needs and drives of a blind infant are all identical with those of sighted infant. Perhaps the blind infant needs a slightly modified version of stimulus or modified responses from others in certain instances. If this is realised and remembered in dealing with the preschool blind children, the parents cannot go too far wrong.

From the beginning it is important to encourage him to continue his efforts which are acceptable. If he is struggling to achieve something, give him all the facilities to struggle and achieve success. The thrill of succeeding in his attempt to find his rattle, to build up his tower of blocks or differentiate his mother's voice from that of others, or run to his mother are of very great value in the formation of his personality.

Many of the activities of a normal infant are the results of his desire to imitate environs. Even a blind infant would do so when it involves sound, touch, etc. But when it comes to the question of imitating the actions involving sight, the infant becomes helpless. In matters of social grace, for example, the child will have to be deliberately taught how to wave his hands to an outgoing friend or to receive a gift gracefully. A seeing child needs very little instructions in such matters. He just imitates the people around him.

More help is required by a blind infant in matters of locomotion. Even a blind infant will by itself roll over and lift its head high when it is five or six months of age. But it needs positive incentive to creep or crawl forward. The normal incentives in the shape of colourful toys, a person sitting silently in front, etc., are of no use to a blind infant. A blind infant would need toys which can make sounds or persons

who could speak to it. So the stimulus of bright colours have to be substituted by attractive sounds in order to evoke the desired response of movement in a blind infant. When the child begins to show interest to stand up, it should positively be helped to gain balance or to reach its support such as a guiding hand, chairs, rails, etc. A blind child needs deliberate encouragement to move about as its tendency is to be immobile.

In all such situations it is of paramount importance to exercise proper care to prevent accidents. A slight fall or tumble should not be made much of either. As in normal children it should be laughed away. Successful efforts should be rewarded with pats, kisses, words of praise told pleasantly, etc. Similarly, correct habits of eating, bathing use of toilet, proper gait, etc., should be taught to a blind infant deliberately as it cannot acquire these habits on imitation of elders for want of sight.<sup>27</sup>

The parents of blind infants are likely to be distressed by the responsibility of having to bring up a blind child for several reasons. Whatever it be, they should be counselled to get over such feelings and be persuaded to treat the child as normal as possible. If the child is not accepted by the parents themselves, it is not unlikely that it would develop several complexes which would affect it very adversely when it grows up.

Actually, a child with a handicap needs additional assurance of acceptance. A blind child need to be given such assurance in the form it can comprehend. A brusque act, however protective it may be, is likely to be misunderstood by a blind child. On the other hand, if the child could be guided round by gentle movements and touches, it goes a long way in enabling it to appreciate the kindness offered and to be thankful to the benefactor. Similarly, the sweet tone with which a mother or father could talk to a blind infant goes a long way in assuring the child that it is "wanted".

Even an intelligent and loving parent cannot be expected to know the correct techniques of bringing up a blind infant. So, it would be better for the parents of the blind child to get in touch with persons who know about the care of the blind and discuss their problems. It should always be remembered that even a very good institution is not comparable to an average home from the point of view of the emotional life of a child. Still if a particular blind child is likely to suffer neglect at home, an institution may be the only salvation for that child.

### *Training blind children between 2½ years and 5 years of age*

Normally when a sighted child is over 2½ years, it should have acquired good powers of mobility and well defined behavioural patterns. Similarly, it would have burst out to speak and would be confident enough to manage such acts as eating, drinking perhaps even toilet habits with the minimum help. The child would have enough confidence in itself and have clear ideas of what it likes to do and what it hates. The exploratory tendencies are also pronounced. The child would be bubbling with activity. In short, it has begun to assert itself as an individual in the social life of its environs. A well trained blind child also could be expected to behave more or less similarly.

It is at this stage of life that stereotypes are formed. It is now that the child has to be trained to have a regular programme of useful activities involving tasks which exercise its mind and body. A normal child at home generally has the inspiration from its siblings or from its playmates. Even for normal children it is felt desirable to train them through Kindergartens, Nurseries or Creches. The parents are not likely to be fully cognisant of the urges and drives of a child. So, it is better that it is left to the care of specialist teachers who could channel the energies of the child into such directions as would enable it to grow up to be a strong and wise person.

A blind child needs such specialised attention all the more because the techniques of understanding, expression, behavioural patterns, etc. vary from that of a normal child though its abilities and propensities remain similar. The child must be taught to utilise these propensities to build up habits, customs and manners that would conform to the expectations of the sighted society in all matters very deliberately.

It is for these reasons that special institutions are organised in advanced countries for the pre-school blind children. They are known as Sun Shine Homes in England. The emphasis in these institutions is more on "Nursery" rather than "3Rs". The physical and mental health are of primordial importance. If the child is to be mentally healthy, the co-operation of the parents is vital and hence they are also given opportunities to get enlightened about their conduct and responsibility to their blind child.

The primary objectives of institutions for blind children between 2½ years and 5 years are to enable them to grow physically strong,

to develop proper interest in the external world through residuary senses, to develop proper neuro-muscular co-ordination, to conform to the accepted modes of social behaviour and to inspire them with zest for life.<sup>28</sup>

A well trained blind child could gain self-confidence and acceptance which would prove to be valuable assets in its later life.<sup>29</sup>

In addition to imparting proper training to a blind child in his early years, he, like normal children, should also be provided with interesting and attractive toys. It would be a great mistake on the part of parents to think that he has no interest in or attraction for the toys, because he cannot see them. In fact, play and toys are as important for the development of a blind child as they are for the growth of normal children. Of course a blind child cannot enjoy bright colours of toys, but their suitable size, shape, touch, movement and sound are of great interest and attraction to him. So, while choosing toys for such a child, the following considerations should always be taken into account:

(1) He would greatly enjoy the toy if it can be easily handled most of the days, therefore its portability is very important. It should not be so heavy as to fatigue the child, nor should it be so small that its actual shape cannot readily be felt by him.

(2) The feel of the toy should be varied and pleasing. Since a blind child cannot see the colour of the toy, he is specially attracted to its smooth texture.

(3) The movement of a toy is also of immense interest to the blind child. It is true that he cannot see a moving toy, but he greatly enjoys the sound caused by its movement.

(4) Finally, the attractive sound of the toy is also of great importance to the blind child. He is very much interested in those toys which produce some sort of sound. It is for this reason that he greatly enjoys whistles, bells and other toys having audial quality. Thus, the parents and teachers of a blind child should provide him with the toys possessing all or most of the above-mentioned features.<sup>30</sup>

### **Braille System**

This system still provides to blind individuals the most accurate ready source of reference for reading and writing. As a code, it should

be respected by both blind and sighted people as the means of independent functioning in the total educational programme for the blind persons.<sup>31</sup> Learning and developing facility in the braille system of reading and writing is the greatest single curricular modification required for the education of the blind. In 1825, Louis Braille, a young blind student and later a teacher at the Paris School for the Blind, modified a military code used for night communication so that it could be used by the blind. The system has been further modified under various auspices. At one time there were three major systems in use — the New York point system, American Braille, and British Braille. In 1932, a modified British Braille became the Standard English Braille, and since 1950 it has been used quite consistently as the preferred system. In 1950, UNESCO adapted a braille system for all languages.

Braille is the most efficient and useful means of reading and writing yet devised for the blind. Using the sixty-three possible combinations of six raised dots in the braille cell, virtually all literary, numerical, or musical material can be presented. Since unmodified braille takes a lot of space — each braille cell requires a quarter-inch of line, many abbreviations, contractions, and signs have been developed. Mathematics makes use of a special braille notation system, and most scientific symbols can be written in braille. A type of braille shorthand for the blind stenographer has also been developed.

Although braille is a modified military code, it is not merely a code for the blind reader. It is a complete medium for reading and writing. Braille is taught, learned and read much the same as ordinary writing and reading. Reading braille is, in many ways, similar to visual reading. The proficient braille reader uses both hands in reading, but the two function independently, one ahead of the other. The hands move regularly and smoothly and horizontally along the line, with few vertical regressive movements. The touch is light, the pressure uniform. The activity is not particularly fatiguing, and there seems to be no decrease in the sensitivity of the touch even after several hours of reading.<sup>32</sup>

The discovery, reported in "Nature", by Dr. B. Nermelin and Dr. N. O. Connor of the Medical Research Council Development Psychology Unit, should discourage the traditional way of teaching braille, which involves the use of the left index finger for reading the first half of each line, and the right index finger for the second half.<sup>33</sup>

Their study revealed that traditional teaching methods are inadequate, that children should be taught to read braille using one

hand only, and that the hand used should be the left unless an individual shows a marked preference for the right.<sup>34</sup>

Some people in the field of work with the blind had asserted that braille reading by the blind was at the most a slow and cumbersome process. According to one study, blind high school students read materials in braille at an average speed of about 100 words per minute while their sighted peers read the printed matter at an average speed of 259 words per minute.

A new revolutionary method of Rapid Braille Reading has changed all this. After a short course in speed reading blind persons average over seven hundred words per minute.

The method has been developed by Professor McBride, who conducted a two week rapid reading course at the University of Utah. Most of the blind persons taking part in the course were college students and professionals who must read at high speed to stay afloat in college or at their jobs. Their average reading speed in braille was 138 words per minute while it shot up to 710 words per minute at the conclusion of the course. The top speed of 1600 words per minute was achieved by a woman student who averaged 144 words per minute before she enrolled in the course.

Dr. McBride has taught rapid reading courses to sighted students, in English and Japanese and to deaf students in sign language and lip reading. According to him it was most rewarding and challenging to teach the blind to read braille rapidly. He spoke highly of his blind students. He further went on to say that most of the schools do not teach reading but they teach their pupils to read slowly. With this break through, blind persons should be able to read braille at the same or superior rate than the readers of print.

Bernard M.Krebs describes the six-dot system by suggesting numbers for each of the dots as they would occur when one uses the braillewriter or slate.<sup>35</sup>

Braille is a system of embossed characters formed by using combinations of six dots arranged thus:

	1 • •4		4 • •1
For Writer	2 • •5	For Slate	5 • •2
	3 • •6		6 • •3

Because of the similarity of the early French alphabet developed by Braille and the one which is in use today, it seems interesting to show the original French alphabet as it was presented.<sup>36</sup>

### LOUIS BRAILLE'S ORIGINAL FRENCH ALPHABET

A	B	C	D	E	F	G	H	I	J
⠁	⠃	⠉	⠋	⠑	⠕	⠗	⠈	⠊	⠚
K	L	M	N	O	P	Q	R	S	T
⠅	⠇	⠍	⠎	⠕	⠏	⠑	⠒	⠓	⠔
U	V	X	Y	Z					
⠥	⠦	⠭	⠮	⠯					

It will be noted that due to the fact that the system was adopted in France, there was no W. The letter which was added for English use was written as follows:



The embossed system which is in use today has come about through generations of struggle, compromise, and refinement. Those who wish to read some of the most emotionally charged discussions available in the specialized literature dealing with the education of blind children should read the Proceedings of the American Association of Instructors of the Blind during the 1920's and 1930's. They will also find Irwin's discussion of "The War of the Dots" quite descriptive of the period leading up to the adoption in 1932 of the official Standard English Braille now used in the English speaking countries.<sup>37</sup> This system consists of grade I, uncontracted, or braille written in full spelling, and grade II which is highly contracted braille. Today the student who learns the braille system will learn the 26 letters of the alphabet, numerals, special braille composition marks, punctuation marks comparable to all those used by sighted people and, in addition, 185 contractions which stand for either whole words or parts of words.<sup>38</sup>



Blind children are also taught to write braille. Braille is written by hand, using a special slate and stylus. The slates come in both pocket and desk sizes. Writing is done by punching holes with a stylus in a paper inserted between two metal strips. Since the material must be read from the underside of the paper, it must be written in reverse by starting at the right margin and writing toward the left. Braille writers or typewriters are available, and a good braille typist can type forty to sixty words per minute. Blind children are also taught to use a standard typewriter, usually in the high school classes. They find it very difficult to write with pen or pencil, and this is no longer emphasized except to teach each child to write his name.<sup>39</sup>

## Special Aids and Equipments

Sight is a relational sense par excellence. Although from the standpoint of biological evolution sight is an extension of touch, the synthetic impressions and the wealth of information provided through the sense of sight are unmatched by other organs of human cognition. This is perhaps clearly brought home by the fact that whereas about a million cells in the human body deal with vision, only about forty thousand cells deal with hearing. It is by no means difficult, therefore, to conceive of the many problems in devising ways of overcoming or circumventing the limitations of blindness, which lie in the following major areas:

- (1) Communication;
- (2) Orientation and mobility; and
- (3) Access to the printed page which has become symbolic of the omnipotence of knowledge.

Endeavours to help the blind to overcome the limitations of the loss of vision have had a long but chequered history. In fact, these endeavours have been closely associated with developments in science and technology.<sup>40</sup>

Efforts to give to the blind adequate means of reading and writing had started several centuries ago. Valentine Hauy, the founder of the first school for the blind devised embossed printing for the use of the blind. The most satisfactory system has been the one invented by Louis Braille in 1825. Side by side with the system of reading, the simple writing equipment consisting of a board, guide and stylus was devised. At present there are braille boards or slates of different sizes

and forms. Braille writers of different kinds are also available. Stainsby, the British equipment was the first of its kind. Then came the Marburg model. The Perkins Brailler is considered to be the best one available in this category. Blind persons widely use ordinary typewriters. The I.B.M. has adapted an electric typewriter which can write both ordinary letters and braille, simultaneously. A new braille slate which embosses on the side on which the writer is punching with the stylus has been perfected and can now be obtained through commercial sources. One writes from left to the right on the slate and can check the writing without reversing the paper. This slate is thought to be an improvement for the first time over the braille writing frame of Captain Charles Barbier, which was further improved upon by Louis Braille during the early part of the nineteenth century and which has been in use all over the world since.<sup>41</sup>

Apart from the arithmetics board (Tailor Frame), Abacus and embossed maps and globes, many more aids are now available to assist the blind in the study of mathematics, geography, science and other practical subjects. Some instances are, an audible chemical balance used to a weighing upto an accuracy of 1/10 of a gram, and an audible thermometer with a range of from minus ten to plus one hundred and ten degrees centigrade, as well as a digital timer reading in braille to 1/10th of a second.<sup>42</sup>

Mental arithmetic is used extensively in the education of the blind. For higher levels of mathematics, calculators, rulers, slide rules, compasses, and protractors have all been adapted for use by the blind. The braille writer is also used in arithmetic calculations, as are an arithmetic board and adaptations of abacus. Modelling clay, pins, and rubber bands are utilised in constructing geometric designs and graphs.<sup>43</sup> Introduction of talking calculators have been an amazing development in this area.

The absence of a blackboard, that most ancient and basic of teaching aids, has been a serious limitation of a classroom for blind children. A tool which serves the function of a blackboard for the blind is now available, it works on the simple principle of a regular typewriter on the teacher's desk which transmits a braille text to slate rulers which are connected to the desk of every student.<sup>44</sup>

A wide range of common industrial aids have been specially adapted for use by the blind. Instances are, an audible multimeter, a carpenter's level, a micrometer, a depth-micrometer, a wood marking

gauge, a six-inch calibre gauge, a servo-assisted height gauge, an electronic level and an electronic compass with an audible output, as well as a host of other similar aids. In the light engineering industry an audible indicating dial gauge is now in use, incorporating coloured light indicators for the partially sighted; it can be used by the blind inspector with facility to a tolerance of one half thousandth of an inch and with suitable mounting between ten thousandth of an inch.

Many simple games such as chess, cards, puzzles and the like have been specially adapted for use by the blind. Some instances of electronic devices are, an audible goal locator as a noise generator for use in ball games and an audible ball.

Specially adapted domestic aids for use by the blind include electric cooker controls, toasters, kitchen scales, electric irons, automatic time switches, etc.

Some other aids include:

An electronic light indicator;

An audible sound beacon to locate objects in space; and

A photo conductive light produced for detecting the level of liquid in a container, the printed heading on an empty page and for a variety of other purposes.<sup>45</sup>

Braille and talking watches, time pieces and clocks are widely used by the visually handicapped.

White canes are the most widely used mobility aids for the blind. There are long canes as well as folding canes. For many blind persons, a cane is an extension of their fingers with which to explore their surroundings, such as obstacles in their path.

An exciting development in this area has been the advent of electronic and ultrasonic aids which could help the blind to locate and identify objects, measure the distance between them, perceive features of the terrain and generally sense the unseen environment.

There are different mobility aids emitting inaudible sound or invisible light beams and detecting "echoes" reflected from objects in their path to draw for the blind person sound pictures of the environment or otherwise inform him of his surroundings.

The world today is witnessing an information explosion. Braille and recorded tapes do not furnish information to the blind at the rate at which the printed page can be scanned with sight. Two possibilities of accelerating the rate of conveying the spoken word to the blind, therefore, were explored:

(1) Playing the recorded tape at higher speeds without raising the pitch and thus diminishing intelligibility; and

(2) Time compression of speech. This is achieved by cutting out redundant portions of human speech and replaying the assembled tape at a much faster rate.

But none of these devices is as satisfactory as the ability to read the printed page. The possibility of translating the printed page into suitable auditory or tactile signals through a photo cell array was envisaged as early as 1912 when a physicist at the Cambridge University in England, Dr. E. E. Fournier De Albe devised the optophone.<sup>46</sup> A young woman, Mary Jameson, demonstrated it. Then a British engineering firm, Bar and Stroud redesigned it and built six units. Several blind persons have used them through the years. Optophone is the name for a class of machines which converts letter shapes into tone patterns. As the probe or camera is moved horizontally, each tone responds to an assigned portion of the letter along its vertical axis. For example a letter 'V' is heard as descending scale of sound followed by an ascending scale. The letter 'l' is heard largely as a chord because several of the photocells 'see' the print simultaneously. Through the years several designs of optophone have been built. The British machines first had five channels or tones: then they were given a sixth. Later, at Battle Memorial Institute, Columbus, Ohio, a Vocational Administration project designed a nine tone device called the VA battle optophone.

In 1967, the Visotoner came into the scene. The Visotoner is an optophone made by Mauch Laboratories of Dayton, Ohio, under VA sponsorship. In 1973 Mauch Laboratories began manufacturing the Stereotoner. It measures in inches  $4/5 / 1/2$  and is usually worn on the chest while reading. As its probe is moved along a line of print, a ten tone (ten channels) code is heard stereophonically in ear-phones. Each tone is heard at a different volume in each ear. High tones are heard louder in the right ear and softer in the left. With low tones the situation is reversed.<sup>47</sup>

Vito A. Proscia, a blind engineer, and Director of the Sensory Aids Evaluation and Development Centre (SAEDC) at the Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts, developed a computer system for translating words, as they are being typed, into the raised dots of the braille alphabet which blind persons can read by passing the tips of their fingers over the paper.

Material entered by a typist on a standard teletypewriter at the Center's offices emerge in braille from a specially designed embosser named the M.I.T. Brailleboss.

The teletypewriter and embosser are linked by telephone lines to a computer which does the translation at the Interactive Data Corporation in Waltham, Massachusetts.

The system makes it possible for a teacher or school secretary to reproduce textbook pages or other reading matter in braille. Scientists and engineers can draw information stored in the computer or work out calculations just as their sighted colleagues do.

The computer produces Grade II braille, a standard form with many contractions and abbreviations which normally can be produced only by highly skilled persons at a rate of about six minutes for each page. The computer typist, after a few simple instructions can produce a page every 90 seconds, and additional copies can be produced automatically by the computer without need for retyping the original.

Meanwhile, an engineer in San Jose, California, Norman C. Loaber, has designed a device that also uses a computer to turn statements typed in everyday language into embossed braille code. He was investigating the feasibility of connecting his special computer terminal printer into a computer network that would give blind professional persons access to legal, medical and other information stored in computer.

A partially sighted computer programmer, David A. Schwartakopf, has developed a way to create braille characters by electronic manipulation of the period on the standard computer printer. An elastic strip placed between the printing element and the paper causes braille dots to be embossed by the period.<sup>48</sup>

In Israel, the research team of the Hebrew University, Jerusalem, the National Physical Laboratory of Israel, and the Israel

Electrical-Optical Industry Corp. of Rehovot, co-operate in developing and manufacturing educational aids and equipments. The scientists of Israel developed a reading machine. It is based on an electronic-optical meter which will measure the printed letter and immediately translate it into a braille character, typing it on an automatic tape.

### *Optacon (Optical - to Tactile Converter)*

For a long time strenuous efforts have been made in many research laboratories to provide the blind direct access to the printed word. At the present time the optacon is perhaps the most widely used such device. An electronic camera scans the printed line and produces vibrotactile or auditory signals, representing the letters of the alphabet. The Optacon converts regular inkprint into readable, vibrating tactile form. To read with the Optacon, the blind person moves a miniature camera across a line of print with one hand. The index finger of the other hand is placed on the Optacon's tactile screen, which is approximately one inch long and one-half inch wide. As the camera is moved across a letter, the image is simultaneously reproduced on the tactile screen by means of vibrating reeds. The reading finger feels the enlarged letter as it passes across the tactile screen. The reader feels whatever image is viewed by the camera's lens. For example, as the camera is moved across an upper case "E", the reader feels a large vertical and three horizontal lines moving beneath the finger.

Following seven years of research on the Optacon at Stanford University and Stanford Research Institute with support from the U.S. Department of Health, Education and Welfare, Telesensory Systems, Inc. was established in 1970. TSI manufactures the Optacon and its accessories and auxiliary training equipment. TSI also trains users, develops training materials, and works with teachers and administrators in establishing and conducting training programmes.

### *Kurzweil Personal Reader*

The latest breakthrough in technology for people who are blind, visually impaired, or dyslexic is the Xerox Kurzweil Personal Reader. The Personal Reader is an optical scanner that reads typeset and typewritten material and turns it into DEC talk synthetic speech. (DEC talk is a trademark of Digital Equipment Corporation). It reads single

sheets or bound documents such as books. The Personal Reader interfaces easily with other computer devices, giving the user the power to create an interactive workstation, for reading, writing, and storing information.

The Personal Reader is compatible with word processing, communications, and braille conversion software packages. The DEC talk speech incorporated into the Personal Reader can be used with screen review software to create a talking terminal. The result is a system ideally suited to a wide range of applications.

### *Low Vision Aids*

With advances in ophthalmology, an increasing number of children and adults are retaining different degrees of residual vision. In the last two decades or so, a wide variety of equipment has been developed which enables persons with limited vision to read print and perform other tasks requiring sight.

Basically, equipment for persons with partial sight could be divided into two categories: (a) magnifying equipment and, (b) projection equipment.

A number of stand and hand magnifiers with and without light are being used. Telescopic lenses are available for persons with limited central vision and diminishing or absent peripheral vision.

Overhead projectors which could project a printed page on the screen are now available. It is much easier for the partially sighted to read print when projected on the screen. Close circuit T.V. is also of great value in this field.

The above-mentioned aids and equipments are neither comprehensive or exhaustive. With the advancement of science and technology especially in the field of electronics so many developments are taking place in designing and producing several assistive devices and equipments for the visually handicapped.

Research in a wide range of disciplines is continually refining existing gadgets and producing new ones. Now a days computers are being put to increasing use to establish design parameters, for equipment for the education and rehabilitation of the blind.

## **Teachers of the Blind**

A teacher whether for seeing or for blind children has been aptly described as an isthmus. In a sense he is a bridge between the community at large and the children whom he is preparing for participation in the life of that community. He must have an intimate knowledge of both his community and his children.

The blind child needs particular assistance in the following major fields: tactual perception, auditory perception, olfactory and kinesthetic perception, socio-psychological adjustment, mobility, and memory training.

### *The Curriculum for Teacher Training*

The curriculum for the training of special teachers of the blind should have among others the following elements:

#### **(I) Psychology**

Apart from giving the teacher a basic understanding of general and educational psychology, it is necessary to lay particular stress on the psychological implications of blindness. This should include an understanding of the social attitudes towards the blind, the reaction of the blind to these attitudes, the effect of blindness on personality, sensory compensation and the substitution of the senses, modern theories about the obstacle sense and how it promotes mobility, differences between sight and touch and similar other items.

#### **(II) Principles of Education**

This part of the curriculum should attempt to give the teacher the fundamental grounding in educational principles. Even at the risk of repetition, it is worthwhile to emphasise that the education of the blind is fundamentally the same as that of seeing children except that the instruments for the acquisition of knowledge are sometimes different.

#### **(III) History of the Education and Rehabilitation of the Blind**

The teacher ought to be familiar with the development of educational and rehabilitation services for the blind in the world and in his own country. This part of the curriculum should be so designed

as to give the teacher a clear understanding of the historical growth of these services.

#### **(iv) Use of Special Equipment**

As pointed out in the earlier discussion, the blind child attempts to overcome his sensory limitations by the use of special medium of reading and writing and by the use of specially designed equipment. No teacher can expect to succeed in his task unless he is thoroughly familiar with reading and writing braille and with the use of a large variety of tangible equipments like raised maps, globes, mathematical and scientific equipment etc., which are now available to aid the education of the blind. Thus, training in braille and the use of this equipment forms an important part of the curriculum for the training of teachers of the blind.

#### **(v) Medical Aspects**

If the teacher is to approach his task with intelligence, it is necessary that he should be aware of the major causes of blindness and their simple remedial measures. Elementary information on this subject will be of great value to him.

#### **(vi) Training in Crafts**

It is open to question whether every teacher of the blind should be taught one or two crafts. It seems, however, that although training in crafts need not form an essential part of the curriculum, in view of the great importance of manual dexterity in the education and training of the blind, it would undoubtedly be an advantage for the special teacher to know a few crafts. It should, however, be left to the discretion of educational authorities to decide whether training in crafts should be given to every teacher or only to certain special categories of teachers such as those in Kindergarten, Montessori or even primary schools. It seems that the value of such a curriculum will be greatly enhanced by emphasising practice-teaching. It is recommended that about half the time should be devoted to demonstration and practice-teaching. This should be supplemented by field vision.<sup>49</sup> The syllabus of training courses for teachers of the blind in the four regional training centres sponsored by the Ministry of Welfare, Govt. of India, follows this pattern.

The curriculum of Teachers Training offered by the Perkins School for the Blind, Watertown, Massachusetts, U.S.A., deserves

special mention. In the words of William T. Heisler, Head of the Teacher Training Department, the Perkins programme is made up of theory and practice. However, it is not limited; it has as its aim the development of competence in all areas having an important relation to the education of blind children.

The study areas include:

1. Psychology of the handicapped with special emphasis on the blind.
2. Methods and materials used in teaching blind children (including a mastery of braille).
3. Historical background in the education of the blind.
4. Guidance needs of blind children.
5. Tests and testing for the blind.
6. Social problem associated with blindness.
7. Programme adaptations for the multiply-handicapped blind child.
8. Type of educational programmes for blind children.
9. Pathology of the eye, with educational implications.
10. Special services and employment opportunities for the blind.

S. K. Dourgesult points out nine courses for the teacher training programme.<sup>50</sup> They are:

1. A survey of education of blind children;
2. Curriculum adaptations (elementary methods for the blind);
3. Braille;
4. The child with low vision;
5. Anatomy and physiology of the eye.;
6. Orientation and mobility;
7. Exceptional children;
8. Finding and evaluating visually handicapped children for school placement; and
9. Problems of the blind in secondary schools.

In Perkins Institution for the Blind, in addition to the lectures and theory, there is a comprehensive programme of observation and student teaching conducted throughout the training year. This consists of an initial period of six weeks of observation at all levels followed by twenty-seven weeks of Supervised Student Teaching. The latter provides for full class teaching, tutoring of individual pupils and assisting with extra-curricular activities. In addition, students attend weekly meetings to discuss problems in teaching and submit written reports on their work.

### **(vii) Other Experiences**

A programme is stronger when many experiences with children and with teaching aids are arranged throughout the year. Such experiences can be initiated at the beginning of the training course itself.

The trainee must have some personal contact with blind children. He does not need to wait to be fully trained to assist in supervision of study hours or to participate in recreation periods. Actual contact gives the student an opportunity to see at first hand many things he has only heard in lectures. Every student needs a chance to discover and understand his true feelings and attitudes about blindness and blind children.

During formal course work students must also be assigned responsibility for preparation of various teaching aids and materials beginning braille reading books or activities, tangible aids such as mathematical computation devices, substitute service experiment activities, simple maps, measurement devices and other items.

Observing children at both work and play can be very instructive. It is most practical when it has a direct connection with lectures and class discussion. Observation is best when it requires some participation by the trainees.<sup>51</sup>

### ***Evaluating Trainee Performance***

Written tests are no evidence of teaching ability and cannot be considered the most important way of judging how much an individual has learned from a course. All possible measures of performance must be used. Oral reports, written reports, abstracts from reading assignments, teaching materials, skill in directed teaching and examinations must all be considered. The greater the number of

measures of student performance, the greater likelihood of a more representative impression of student attainment. Individual differences in test performance must also be considered; both objective and subjective written tests are recommended. Evaluations are most helpful when the student and the teacher learn from the activity. Good evaluation techniques are those in which individual performance is interpreted back to the student.<sup>52</sup>

The real test of the trainee consists in his ability to teach and to perform related duties. Those who are not competent must be redirected into more suitable work. No favour should be done to unsuitable teachers by recommending them for jobs they cannot do; otherwise it would be a disservice to the blind children as well as to the competent teachers who serve them.

### *The Choice of Instructors*

Instructors in specialised programmes must have broad experience as regular educators, knowledge of administrative practices, previous contact or work in several kinds of programmes for the blind, and experience in actually teaching blind children. They should have a higher degree than the students whom they will serve.

Additional lectures are always needed since the programmes described cannot be properly presented by one person alone. Furthermore, it is customary for the Anatomy and Physiology of the Eye course to be shared between a qualified ophthalmologist and an experienced educator.<sup>53</sup>

### **Academic Qualifications**

In view of the nature of the problems peculiar to schools for the blind it is desirable that special teachers should have a good academic background. It will be worthwhile for them to have reached at least the Matriculation or Higher Secondary education. In addition, they ought to be trained as ordinary teachers before they undergo training as special teachers of the blind. A Superior regular teaching experience of at least two years is desirable for them.

### **Personal Qualifications**

The first national Seminar on the Training and Employment of the Physically Handicapped convened by the Government of India at

Bangalore in December, 1961, recommended the following personal qualifications:—

- (i) Patience
- (ii) A vivid imagination
- (iii) Versatility
- (iv) Sympathetic understanding
- (v) Resourcefulness

It seems that the combination of these personal qualifications is undoubtedly essential for a good teacher of the blind.<sup>54</sup>

The success of any training programme depends upon the careful selection and screening of candidates. It is extremely important for us to learn about the kind of person we are considering for working with handicapped children.

In order to determine a candidate's suitability for training reference information should be obtained in the following important areas:

- (1) Ability to get along with people;
- (2) Ability in working with children and young people;
- (3) Adaptability;
- (4) Degree of maturity;
- (5) Emotional stability; and
- (6) Personal integrity.<sup>55</sup>

### *Duration of Training*

The present trend in general education seems to be to train teachers for two or three years. In view, however, of the fact that every candidate for the special course in the education of blind is expected to have been trained as an ordinary teacher, it seems that training for one academic year should be adequate. If, however, it is not possible to recruit candidates who have already been trained as teachers, it would be worthwhile to train them for about two years so that they could, during this period, combine training in general education with training in the education of the blind.

## *Training of Resource or Itinerant Teachers for Integrated Schools*

There is no fundamental difference between the training of teachers for integrated schools and those working in special schools for the blind. Both of them need to understand blind children and the community at large. The object of both the types of teachers is to prepare the blind child for total integration into the community.

The main difference lies, however, in the detailed techniques to be employed by the two types of teachers. Even this difference is small and it should be possible for an intelligent teacher to deal effectively with children placed in the two situations. It will, therefore, be worthwhile for every course in the education of the blind to attempt to acquaint the student with the techniques of teaching both in special and integrated schools. In other words, integrated training could eventually hasten the process of integrated education.<sup>56</sup>

Training programmes for teachers of the blind have been increasing in number and in scope in many countries. Exchange of information at various world meetings of workers for the blind, including the meetings of the International Council of Educators of Blind Youth has contributed considerably to such programmes. Many countries, formerly dependent on having their teachers trained abroad, have recently organised training programmes of their own. One example is India where a few training centres have been started with additional ones planned for the future.

It is hoped that those responsible for the development of new training programmes will recognize the importance of recruitment along with training; for, it is just as important to consider whom we train as how we train.<sup>57</sup>

## **EDUCATION OF THE PARTIALLY SIGHTED**

The education of the partially sighted is a greater problem than that of the blind. It is based on a philosophy which recognizes that he is basically a child who sees, and that he has a deep desire to use that vision to discover and augment what he wants to know. How efficiently he will be able to realize that desire depends upon the methods which are employed in his training and education. Of paramount importance is the development of the whole child in his normal social environment, concurrent with an awareness of his

individual differences. A keen sensitivity to needs, both personal and educational, is essential in helping him to gain insight and thus achieve wholesome and satisfying adjustments. The accomplishment of this purpose is contained within the aggregate of knowledge concerning partially sighted children and the methods used in their education.<sup>58</sup>

At one time there was a large number of "sight saving" classes conducted for the partially sighted. The notion of sight saving has been largely discarded because it is generally recognized that the maximum use of even defective eyes will not cause them to deteriorate. Vision is not saved by not using it. The child with poor vision is now encouraged to use his vision to its maximum, to learn to read print, to write, and to acquire as much of his education as possible by sight. In contrast with the sight-saving emphasis of the old classes for the partially sighted, we now find programme, or at least proposals, for their "sight development" or "sight utilization." In such programmes, the children are "learning to see," to make full use of their residual vision.

People working with the visually impaired are becoming increasingly concerned with the most effective use of any residual vision. Many legally blind children have potentially useful but undeveloped near vision. Many such children can develop considerable functional vision even though they have very low measured visual acuity. However, these children require planned opportunities and programmes to achieve this end. Teaching procedures specifically directed at this end can significantly increase the visual efficiency of partially sighted children.

The education of partially sighted children makes those adjustments in curriculum and equipment necessary for the education of the handicapped child, but otherwise his education is not unique. He does not have to learn braille reading and writing. He is capable of independent travel without acquiring special techniques. His special orientation and concepts are not unique.<sup>59</sup>

## **Characteristics of Partially Sighted Children**

The criteria by which children are considered partially sighted have changed to include a wider scope as knowledge concerning the reactions of these children in a learning situation has increased. Children tend to use what sight they possess and thus the definition has been

broadened. The improvement of educational equipment, books, optic aids, and classroom environment has also made it possible to include an increasingly large number of children with impaired vision in the programme. The generally accepted definition for educational purposes now includes:

1. Those students with a visual acuity of 20/70 or less in the better eye after the best possible correction, who can use vision as the main channel of learning.

2. Those students, who in the opinion of eye specialists and educational authorities will benefit by the use of special facilities provided by the programme for partially sighted students.

The eligibility for entrance into a programme for partially sighted children is then a co-operative procedure between the eye specialist and the school. The child is enrolled on the recommendation of the eye specialist, and then it is the responsibility of the special teacher to interpret the eye specialist's report in terms of educational method, adjusted to the individual needs of the student.<sup>60</sup>

## **Programmes for the Education of Partially Sighted Children**

Since the establishment of programmes for children with partial sight there have been four general methods of administration in use:

1. The segregated plan, in which the partially sighted students receive all their education in a special school or room.

2. The co-operative plan, in which they do all work requiring close use of the eyes in a special room and share all other activities with the regular class.

3. The resource room plan, in which the student is registered in the regular class, does all his work with the regular group and only goes to the resource room and the special teacher for materials and special training.

4. The contact plan or itinerant teacher plan, in which the student is registered in the regular class, does all his work there, using special materials which he receives from a travelling special teacher, who trains him in their use and counsels him on how to handle his problems.

The last three are the ones mostly in use at present. It is desirable that the programmes function from kindergarten through the tenth class, thus achieving a continuity in counselling and training which enables the student to become a functioning member of the community.<sup>61</sup>

## **Special Needs of Partially Sighted Children**

When the standards for entrance into a programme for partially sighted children have been defined and the administrative functions structured, the physical, intellectual, and emotional needs of these children are the next consideration. In all of these aspects they are basically like all children. Since the general goals of education are already being met within the regular school curriculum, plans for the education of visually impaired children should be made an integral part of the regular school system. However the needs that are related to the distinguishable or characteristic attributes of children with visual disabilities, should be precisely recognized, described, studied, and satisfactorily met.

### *Physical Needs*

Physical facilities best suited to the visual needs of partially seeing children are to be used in the special room in the co-operative plan and in the resource room. These rooms should provide an ideal seeing environment. It should be a well-lighted room with the following amenities: a white ceiling, light-coloured, matte finish painted walls with high reflection factors; light-coloured movable furniture; window shades which control light; chalk boards that make seeing easier; and efficient artificial light that can be controlled. Thus, the physical surroundings in any classroom should meet the needs of the partially sighted children and make their integration more feasible. The other physical requirements of these children are special books, supplies, and equipment.

### *Intellectual Needs*

Partially sighted children have the same intellectual needs as all children, if they are to be educated to function as "seeing" people. However, the scope and variability of intelligence with which the special teacher may have to work is very wide. In the co-operative type class, the enrolment requirements are usually restricted to those

children with a normal I.Q. In the contact plan such restrictions do not exist. In fact, this is one of the advantages of that plan. Because of the flexibility of this plan, children with other handicaps who are also partially sighted can be included. Children, whose greater handicap is other than sight, need not be deprived of the privilege of the help of the special teacher, just because they happen to come under more than one classification. Children who are deaf, orthopaedically handicapped, mentally retarded, or gifted can receive service from the teacher of partially seeing children if they also come under that latter classification.

Children who have had visual impairment from very early childhood have distorted or faulty visual perceptions which need clarification or re-education. Often too, they tend to be educationally retarded, because their perception of visual tasks is slowed down. This does not necessarily have to exist, and it is the function of the special teacher to use methods to gain optimum performance.

### *Emotional Needs*

Children with partial sight have the same basic emotional needs as all children, but the fact that there is a disability sometimes affects their capacity to cope with the daily problems that confront them. The education of these children, then, has an added emphasis on personality development, that is, the optimum personal development upto their capacity in relation to the impairment. It is possible with wise counselling to prevent a disability from becoming a handicap. It is not the physical impairment that is the crux of the technique of guidance, but the way the child feels about it and how he thinks about it in relation to himself. Like other children he needs to feel secure, to gain recognition for himself, to experience success to a satisfying degree, to be accepted by his peers, to gain the respect of others for his positive values, and, above all, to be aware of a sensitive recognition of his own personal worth. The fact that it is sometimes more difficult for him to satisfy these needs does not mean that it is impossible.<sup>62</sup>

### **Objectives of the Educational Programme**

The ultimate purpose of the education of partially sighted children includes the four main groups of objectives of education: " (1) Self-Realization; (2) Human Relationship; (3) Economic Efficiency; and (4) Civic Responsibility."<sup>63</sup> To these should be added the specific objective:

to assist children with visual impairment to adjust to their disability to the end that they may be enabled to build a personality capable of facing that disability, modifying their behaviour accordingly, and thereby attaining a personality strong enough to maintain balance and stability and competency in meeting life situations. Frederika M. Bertram enumerates the various ways in which the partially sighted children are to be helped.

### *Meeting Physical Needs*

To meet the physical needs of the partially sighted student he should be provided with:<sup>64</sup>

1. The best medical and optical care possible for his particular needs;
2. Rechecks of his visual acuity when indicated;
3. The best physical environment for seeing that is possible for his particular disability;
4. The best placement for him in the school situation;
5. The special provisions for partially seeing children which are available in his area;
6. Training which instills good health education, including eye health. The student should have increased knowledge of:
  - (a) What comprises adequate diet;
  - (b) The value of adequate rest;
  - (c) The value of good posture;
  - (d) What is good seeing environment for himself;
  - (e) What safety measures are to be taken by him so as to avoid accidents;
  - (f) The use of special services for eye health;
  - (g) Where to sit in the classroom, in a study situation, in the library, in the movies, and so forth;
  - (h) Where to sit in relation to the light;
  - (i) How to avoid shadows;
  - (j) How to avoid glare;
  - (k) Where to sit in relation to other students in order to participate to the best advantage;

- (l) The value of holding his head up to read and write;
- (m) The value of holding his book in the best position for reading;
- (n) The value of personal cleanliness and neatness;
- (o) How to keep glasses clean, if he wears them;
- (p) The fact that glasses need frequent adjustment;
- (q) How to avoid mannerisms that call attention to the visual disability.

7. Materials and equipment suited to his individual needs to help him see;

8. Training in the correct use of the above materials and equipment;

9. Books and supplementary printed materials in type size to meet his visual needs;

10. Materials, equipment and books for enrichment to make up for the deficiency in visual perception.

### *Meeting Intellectual Needs*

To meet the intellectual needs of the partially sighted student he should be provided with:

1. The same education as all children except as his handicap indicate adjustment or modification;

2. Instruction in the special methods used to adjust the curriculum to his special needs and thus show increased proficiency in-

- (a) being a good listener and using his ears to learn;
- (b) learning to read large-type books;
- (c) learning to use his special wide-lined paper to write;
- (d) learning to participate effectively in group projects;
- (e) learning to do number work and how to place it on the paper for better seeing;
- (f) learning how to use special materials so as to be a contributing member in social studies and science;
- (g) learning to use the large type dictionary effectively;

- (h) learning to use the typewriter correctly as an effective tool;
- (i) learning to make use of community resources;
- (j) participating in co-curricular activities suited to his particular disability;
- (k) operating auditory devices used in learning;
- (l) identifying areas in which he needs extra help and evaluating his performance so as to make the most efficient use of the special teacher's skills.

3. Counselling and guidance as part of general instruction so as to help him in the adjustment process;

4. Vocational counselling at the high school level to gain increased understanding of-

- (a) the variety of occupations needed to carry out their tasks and which are possible for them to perform;
- (b) the accepted standards of the job one expects to take;
- (c) how to develop a plan to get the education needed for the job;
- (d) what financial obligations to fulfil;
- (e) the worker's responsibility to the employer;
- (f) the nature of legal protection of the worker-vocational rehabilitation;
- (g) the types of work in which they are disqualified because of impaired vision;
- (h) what vocations have been successfully followed by others with visual disabilities;
- (i) where to find data concerning jobs;
- (j) the value of pre-testing for job placement or training;
- (k) how to prepare for the interview;
- (l) how to prepare for the questionnaire and application blank.

### *Meeting Emotional Needs*

To meet the emotional needs of the partially sighted student, he should be helped to gain increased understanding of his visual problems and to gain insight into the resolution of those problems by:

1. learning to admit that he has a disability;
2. learning to face the fact of the disability;
3. understanding how to adjust to the disability;
4. understanding that it will be a life time adjustment and that time and practice make that adjustment easier;
5. understanding that all people face problems of adjustment of some kind and he is not alone;
6. learning techniques of problem solving;
7. becoming articulate about a philosophy of life;
8. becoming aware that a philosophy is dynamic and subject to change with growth in understanding;
9. evolving and using techniques of self-discipline;
10. appraising his own plus and minus qualities;
11. planning constructively on the basis of the above appraisal;
12. making wise choices;
13. understanding the process of evaluation;
14. practice in evaluating his own attitudes;
15. applying general principles of mental health to his own particular problem;
16. learning to deal with anxieties and tensions by taking positive steps towards relieving them.

### **Personal Goals of the Visually Impaired**

The education of visually impaired children gives the special teacher a most satisfying experience in long term counselling. Counselling accompanies the whole educative process and is an integral part of it. The above objectives are consciously taught at the high school level when the student has reached that stage of development when he is actively interested in his own future. His personal goals then include a desire to acquire optimum physical and mental health, acceptable personal appearance, intellectual power, satisfying social relationships, a full life by enrichment, skills in efficient planning for study, recreation, and effective living, vocational knowledge

and the use of it to plan for the future, and ability in self-evaluation. These are the ends that may be accomplished through long-term counselling and guidance.<sup>65</sup>

## **Curriculum**

The curriculum for the partially sighted children must be purposeful and based on needs and objectives. It should recognize the worth of accepted curriculum practices and be integrated with the general curriculum pattern of the school system of which it is a part. In the co-operative plan the special teacher is responsible for all parts of the curriculum that primarily involve the use of sight and close work. The other two plans place the emphasis in varying degrees on working in regular classroom. In the contact plan the special teacher is not responsible for teaching the whole curriculum but must have an excellent knowledge of it in order to work in close co-operation with the classroom teacher and adjust the materials of learning for the child who needs them to participate effectively in the room. The success of integrated programmes, such as these three types, depends largely upon inter-professional understandings and inter-disciplinary respect. It places a large responsibility on the special teacher who is co-ordinator of educational practices for the children under his care.

### *The Elementary Grades*

Children are admitted to the special programme at varying levels. Provision for their adjustment has to be met at the point where they are when they enter, whether for the first time or from some other programme. There are others who are placed in the programme temporarily by the eye specialist and provision must be made for their temporary needs.

### **Kindergarten**

Experiences in kindergarten are of great importance to these children, since it is an excellent orientation to the classroom. They learn to manage within the community of the school, the building, the classroom, and the playground. They are introduced to materials of learning common to all children of their age. They share experiences of work and play with other children and use materials which are large and usually within their ability to manipulate. Interpretation of the visual problem in relationship to school participation is given in the

light of the eye specialist's report, and suggestions are made on how to help them to adapt themselves to the circumstances. The special teacher studies these children to determine what gaps might have occurred in their development because of impaired vision, and then tries to narrow that gap by giving them experiences which have been lacking.

Perception involves more than just seeing, yet accurate seeing is important to integration and thus to learning. Therefore, in order that the children may have the best advantage in learning, it is important for the special teacher to supply materials which they can see accurately and teach them to use methods by which they will have the best opportunity to see. The kindergarten room itself supplies any large materials for them to explore. The special teacher works with the children to develop an awareness of spatial relations in which they so often have faulty ideas. People with normal sight take for granted what they see in one quick glance and have no concept of the confused impressions that children with impaired vision have. Nor can they understand how much longer it takes these children to focus in order to gain a clear image. With experience, they do gain visual efficiency as familiarity with things gives them confidence. For this reason, the mother is often asked to sit in on the sessions with the special teacher to learn some of the techniques of enlarging the perception of these children.

The special teacher provides experiences through games which include visual concepts. The use of auditory directions helps to train that channel also. The child is asked to listen carefully and is given an auditory direction to carry out after thorough orientation to the room. Later, more than one direction is given, and then with more practice, a series is given. One might begin with, "Please, open the door." The directions should always be natural and meaningful. They should also be clearly and simply expressed. As they develop to a series, counting can be introduced and differences in word meanings made more definitive. From the exploration of the possibilities of the room, progression can be made to work at a table. Blocks, toy animals, little cars, planes, sticks, large buttons or button moulds, and other familiar articles can be explored. When they are familiar with these objects, by both sight and name, a large piece of paper (18 inches by 24 inches) can be placed before them. The teacher indicates a side by running a finger along it and saying: "This is a side." The child does the same. Then, "Can you show me another side?" Then the

sides are counted. A similar procedure is followed with the corners. Then the middle is pointed out and finally right and left are introduced. The next step is to listen for directions in regard to the paper and carry them out. The final step in the progression is to place the toys on the paper according to directions, like, "Put a button in each corner." These games have innumerable possibilities and can be carried on over a period of interviews with much success. Later in the year as the end of the term approaches, if first grade is being anticipated, the toys can again be used to introduce the left and right movement of writing. A large piece of newsprint with distinct crayon lines four inches apart is placed on the table. Little toy dogs or horses are run between the lines from left to right. After several trials, the animals are put away, a crayon is given to the child with the direction, "Show me with the crayon where the dogs ran." These are just an indication of a few of the games used to develop a sense of space and direction with partially seeing children.

The special teacher also takes the children on nature walks. Many of these children have missed the simplest concepts of nature around them. The walk does not have to be any further afield than the school grounds. The lawn to them is merely a mass of flat green, and it is a new experience to see a blade of grass by itself and to realize that the lawn is made up of many of these.

### **First and second standards**

These grades are very important to partially seeing children. This is equally important for all children since learning to read is complex attainment, which is dependent upon recognition of clear visual symbols. It is, therefore, imperative that children with a visual disability have print which they can see. Large type books are available in several of the reading series.

In the co-operative plan for the education of these children, the special teacher has the choice of the books, but in the other plans, the regular classroom teacher has that prerogative. If no large type book is procurable like those in use in the regular classroom or if the child needs larger type than is printed, the special teacher makes a hand-lettered book on cream coloured paper with matte finish to coincide with the reader being used. Pictures can be provided with the text by cutting up two regular books and pasting the pictures to correspond with the content. Vocabulary cards to accompany the

books are lettered in the same way. Auxiliary materials suggested by the teachers' manual for the reader are also made large, so that the children will have the benefit of all the supportive material available to other children. Careful lettering is essential to the making of these materials. "The bigger the better" is not the criterion. The guide should be comparable to 24 or 30 point type, evenly executed in Indian ink. Letters of the words should be close together and spaces between the words distinct and even to lessen eye movement and give a better comprehension of the "whole." The children must learn to recognize whole words and group of words together to develop facility, smooth flow, and understanding of content in order to complete the integrative process. Groups of words which go together should never be broken in going from one line to the next. Such phrases as "on the farm" or "under the tree" belong together, are read together, and are cases in point. For better seeing of reading materials, adjustable, tilt-top desks or books racks are suggested to hold the books in correct reading position.

Manuscript writing is another skill taught at this time. The children need help in this area and the special teacher uses specific techniques to accomplish this. The children must be able to see the formation of letters at close hand to be sure of direction and the way the letter is formed. Drawing letters never lead to facility in writing. Rhythm is important along with the direction of the strokes. Keeping between lines and judging space is often difficult for these children. This is where the kindergarten training in spatial relations pays dividends. The first and second grade children use special paper, 17 inches by 11 inches, which is wide enough to write a complete thought on one line.

The paper must be ruled on two side with green ink and the lines must be  $\frac{1}{24}$  inch wide and  $\frac{3}{4}$  inch apart. Ruled lines on one side of sheet shall register accurately with ruled lines on the other side, and ruled the long way.

Teachers of visually impaired children should be capable of writing a requisition for materials, equipment, and books with accurate information about them. Often they are starting a new programme and are expected to know these necessities through the administrator in charge, who may not be specialized but a general education person.

Pencils which make a clear, black line are indicated for children with partial sight. The usual first grade pencils, while heavy, are not always suitable, since they sometimes produce a "fuzzy" line.

Number work is also made large for these children. When the formation of numbers is being learned the special lined paper described above may be used. It is an excellent guide. However, later when combinations are introduced, it is better to use plain, large sized paper either in newsprint of dull finish cream colour.

Contrary to what might be expected, partially seeing children often like to draw and paint and do exceptionally well with it. It is amazing how much detail is often to be found in their work. The explanation is quite simple. People with good sight just glance at things, whereas, these children, when interested, examine things minutely and reproduce them accordingly. Clay work and fingerpainting are two excellent media of expression for children with poor vision.<sup>66</sup>

### **Third, through seventh standards**

The methods which are used to adjust the learning situation in the third, fourth, fifth, and sixth standards have certain points in common, and so will be treated together. The social studies units are the core curricula around which the class work centres, and special materials are of great importance to the child with poor vision.

As the core of the curriculum widens its scope from the immediate environment and the local community to include more global concepts, more educational aids are used. A globe with clearly defined land and water areas and a minimum of print is a desirable adjunct to learning. A globe that rests in a cradle and can be held by the children by lifting it from its resting place is a better tool of learning than the very large, attached globe whose very size keeps it from being explored closely by the child. Geographic forms and concepts should be presented before any political areas are particularly identified. The vocabulary of geography can be learned through projects and by hearing. If basic ideas are well taught through giving the children many experiences, the change over to two dimensional maps is a natural process.

The children with partial sight use special maps which are printed for their use and are expendable. These maps are the same as required in the general curriculum, but are 18 inches by 24 inches in size, printed in clear black line.

There are many ways in which the partially seeing children may participate in social studies and science projects. They can compile

meaningful notebooks with pictures, make oral reports, arrange collections and exhibits, keep a bulletin board, help with murals, take part in dramatizations and folk dances, grow and take care of plants, feed and take care of animals, and write stories of their experiences. Audio materials may be used by the children to gain information by listening. Recordings, transcriptions, and the talking book could be made available for their use. An effective tool for these children is a book list of large type supplementary books which can be used for pleasure reading and for gaining additional information. A large type dictionary should also be within easy reach for reference and where no large type materials are at hand, the Projection Magnifier is an excellent aid. It should be understood that no one piece of equipment or visual aid solves all problems for all children. They have to be used with discrimination and discretion.

Many of the aids just discussed can be used in the language arts as well. There are many large type books in use today, so that the children can be kept with a reading group no matter what plan is used for their education.

At the third standard level the lined paper which the children use is changed to one 9 inch by 12 inch in size. When the children in the regular grades learn cursive writing, the partially seeing children learn it also but are encouraged to continue using the more easily seen manuscript writing for their assignments.

Arithmetic is continued in much the same manner with emphasis on neatness and placement on the paper for better seeing. Crowding of work is discouraged. The special teacher often copies assignments of drill work for the children, leaving room for them to complete the problem.

Music is an excellent form of release for the children with partial sight. They learn to sing by rote. It is recommended that they be placed in front of a good singer, so that they may learn by hearing. In the higher standards, where words are no longer learned by rote but read, the special teacher may enlarge the words on the Magnatype machine. If the sight loss isn't too great, the children may be allowed to take instrumental music.

There are many problems related to the physical education curriculum of the partially sighted children. How much they are permitted to take part in the programme is directly related to their own particular

sight difficulty. Individual differences are the primary guide in this area. There are certain specific rules for all partially sighted students. Rough play is prohibited, because a blow on the head might have unfortunate results. Highly competitive games are not indicated, since they cause discouragement. The other children do not willingly choose a child for a team if his chance of winning is poor. Most school systems today do not encourage highly competitive sports in the elementary grades, but any competition is often too great a strain for the child who does not see well enough to have actual success. The children are able to participate in work with small groups and in many of the games and special help is indicated for them.

The special teacher is directly responsible for teaching typing. The typewriter has always been considered a valuable tool to be used by partially sighted students. The purpose of teaching typing is to provide a means of clear, written expression, which requires the least use of the eyes. For this reason it must be a "touch system." At what time typing is instituted is a matter of readiness. Some students have such poor motor co-ordination that they never evidence any aptitude for typing. If a child does not possess some probability for success, typing is not to be taught.

Children who reach the secondary school level have all the characteristics of early adolescence with its dependency on peer acceptance. They very often show more mature thinking and ability to adjust as a result of the long-term counselling which they have been exposed to. By this time they have had a great amount of practice in adjustment.

The special teacher works with the regular counsellor in programming these children, so that they will be placed in relation to their particular needs. All of the regular curriculum should be made available to them.

Education at this level should meet the needs of self-interest and of vocational guidance. The emphasis is more strongly on the development of personality. As the need for individual instruction decreases, because they now have developed techniques for the mechanical handling of their disability, the need for counselling increases.

The counselling of these children begins the day they are enrolled, and is interwoven with the learning process throughout their

school life. The first positive adjustive steps are related to the visual disability. There are four major steps in this adjustment. First, the child must recognize that he has a disability and admit it to himself. This almost seems self-evident, but often the visually impaired want to suppress the idea or they actually do not realize the loss because they have no concept of what perfect sight is. They have never seen a perfect image and so have no criterion by which to judge.

The second step is allied to the first. The student needs to be assisted in facing the disability after its recognition. This is a very difficult adjustment and requires the giving of correct information regarding the impairment without engendering anxiety or fear. The child needs reassurance and confidence in the matter of facing the reality of visual loss.

The third step involves the adjustment to the disability. If the first two steps have not been satisfactorily completed, the adjustment is never accomplished. One must also be aware that there may be regressions to the second step after the adjustment periods has been established for some time. If this happens, the counsellor has to realize and understand the child's doubts and exercise patience in re-establishing good basic confidence. It requires real courage to live with a visual loss and it is almost too much to expect perfection all the time. The child needs the discerning support of understanding at these times. The purpose of this type of counselling is based on the general basic hypothesis set forth by Rogers in his statement that "effective counselling consists of a definitely structured permissive relationship which allows the client to gain an understanding of himself to a degree which enables him to take positive steps in the light of his new orientation."<sup>67</sup> This can be true even though part of the counselling is necessarily directive rather than non-directive. Environmental factors in adjustment can be presented in such a manner that the child's acceptance of them comes from within himself rather than being super-imposed as directives. Besides, an effort is to be made to separate the child from friction-creating situations.

The fourth and last step is the recognition of the time element in the counselling process. Counselling of children with a visual impairment is a long-term process. It means assisting the student in the establishment of positive values; of a philosophy by which he may live with himself as he is; of the significant worth of personality building; and of the importance of vocational planning. Having admitted and

faced the visual loss, the emphasis becomes positive. In this type of counselling the focus is on the individual and his needs and not on the problem. The aim is not so much to solve an immediate problem but to help the individual grow so that he can cope with the present problem and with later problems in a better and integrated manner. This method relies on the motivation of the student to do something about himself. The stress is on the feeling of the student toward the situation and of what he wills to do about it. Freedom of thought and self-direction are important, because then the integration of the thinking becomes a growth experience and valuable to the individual. Intermingled with this process of gaining insight is a clarification of possible decisions and possible courses of action.

In order to do effective vocational guidance for the partially sighted some directive counselling is necessary in adapting the visual limitations to the known data in regard to certain vocations. Vocational guidance of the visually handicapped is based on two factors—the type of visual disability and careful guidance of his educational training. The first is outlined on the cumulative record from the first recommendation by the eye specialist to all subsequent medical history. The second should follow the pattern of all educational guidance which is an expression of good educational philosophy. It is a developmental programme concerned with the questions what is this student good for, despite the disability, and what kind of education will reveal his capacities and help him to develop them? Since the goal of all counselling is the growth of the individual, educational guidance is intended to aid the student in choosing an appropriate programme and in making progress in it.

Programming is extremely important to the partially sighted in that they cannot afford the use of eye-sight in vague experimentation. It is important that they are as efficient as possible in their choice of programme. Since they are often retarded because of sight difficulties, they cannot afford to waste sight and time on extraneous efforts. Their limited expenditures of visual energy need to be purposeful. The steps in the process of vocational counselling are: (1) the student's appraisal of his learning capacity, (2) the exploration of his vocational potentialities and interests, (3) the obtaining of information about all kinds of educational resources in the school and in the community, (4) the selection of a training centre, school or college that provides educational opportunities in keeping with the student's capacities and

interests, and (5) the detection leading to the correction of conditions that are interfering with the advantageous use of educational opportunities open to him.<sup>68</sup>

## **Supplementary Services**

Supplementary services for the children who are partially sighted are part of the general school planning for these children. Co-ordination with the regular health service is necessary for examination, placement, consultation, and follow-up. Psychological services should also be made possible. A good testing programme should be an integral part of the planning for them and results should be recorded. Evaluation of progress is meaningless without valid data. These tests should be given at different stages of development, so that the accumulated data may be used as a cogent guide to counselling. Provision should be made for keeping confidential cumulative records which can be used as an effective tool of operation for the benefit of the students. These records should include data predicated of needs – physical, intellectual, emotional, and social. All records and entries should be dated and should contain the name, address, date of birth, sex, school, and parents' names. Developmental data, physical peculiarities, illnesses, defects or disabilities, and what has been done about them, that is, any diagnosis or prognosis, should be recorded under physical. Intellectual traits should include school status, and all test data. Emotional and social data should include material on group participation, interests, companions, behaviour patterns, difficulties, strengths, leisure time activities, information about the home situation, and information about parent attitudes and about siblings.<sup>69</sup>

## **Educational Aids for the Partially Sighted**

For the child with borderline vision, minor adjustments, such as seating him near the blackboard, placing his desk in a good light, and permitting him to move about so as to be as close as possible to charts and other wall displays may be all that is necessary.

For the more severely handicapped child, books in large type, and magnifying devices of various types, are necessary.

Optical magnification is achieved in several ways. Magnifying projectors, and special lenses – both contact and in conventional frames – are available. Telescopic effects are achieved by using

contact lenses along with special lenses in conventional frames. A wide variety of special magnifying devices is produced.

Simple enlargement of print or magnification does not make a normal reader out of the partially sighted person. All means of enlarging print reduces the effective field of vision. This means that the amount of material that can be perceived at one time is reduced, and the rate of reading is correspondingly slow. It is therefore necessary to find the most appropriate type and degree of magnification for each person.<sup>70</sup>

The provision of visual aids to the partially sighted has become an essential link in educational rehabilitation of the visually handicapped, and the visual aid service should become equal to the service of any other category of handicapped persons. Realizing this, low vision clinics have been established in increasing numbers in U.S.A and in other developed countries.

## Footnotes

1. Charles W. Telford, James M. Sawrey, op.cit. p. 318.
2. Prof. Chikao Sata Tue, "Notes from Japan", *Fifth Quinquennial Conference of International Council on Education of Blind Youth*, Madrid, July 25-August 2, 1972, pp. 178-179.
3. George Lee Abel, "The Education of Blind Children", William M. Cruickshank, G. Orville Johnson, *Education of Exceptional Children & Youth*, p. 305.
4. Ibid. pp. 313-316.
5. A. K. Mittal, "Planning and Development of Curriculum in Schools for the Blind." *2nd All India Convention of the National Federation of the Blind*, pp. 27-28.
6. Ibid. p. 28.
7. William M. Cruickshank, G. Orville Johnson, op.cit. pp.316-317.
8. Ibid. p. 317.
9. Ibid.
10. A. K. Mittal, op. cit. pp. 28-29.
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## CHAPTER XIII

# EDUCATION OF THE ACOUSTICALLY HANDICAPPED

The child with permanently impaired hearing, has, by the very nature of that impairment, handicaps which have an impact on his total development and adjustment. The effects of impaired hearing pervade all communications: understanding, speaking, reading and writing languages. Often his most obtrusive handicap is his speech. It is not that his speech mechanism is defective, but that he cannot hear properly. The child with impaired hearing has a total communicative problem. In the category of the acoustically handicapped we include both the totally deaf and the partially deaf or the hard of hearing.

Children with temporary hearing impairment, or those who have the type of hearing loss which can be adequately compensated with a hearing aid, do not necessarily present a special problem to the special educator. His concern with them will be primarily in guiding parents to take their children to suitable medical and evaluative services and in helping them in minor classroom adjustments. We are concerned here with children who have difficulty in communicating because of permanently damaged hearing function whether it is total or partial.

The responsibility of meeting his special needs will require the co-operation and special skills of professional workers in many disciplines. Medicine, psychology, education, and audiology are but few of these. Of equal importance are the roles of the parents and the community as a whole.<sup>1</sup>

## **Social function of hearing**

Sharing a common language is a prerequisite to full integration of a child into family, community, and society. Adequate hearing and speaking are effective aids to co-operative behaviour. Sounds, even nonverbal ones, act as guides to behaviour and to understanding. Hearing is normally a major source of pleasurable social experience. A common language is man's principal means of social interaction. In addition to being two of our prime avenues of information, hearing and speech contribute to social acceptance as well as to one's feeling of personal security, and they also aid in the learning and maintaining of nonverbal skills. The fact that severely and profoundly deaf, but otherwise normal children, sit up, crawl, and walk later than their normal siblings indicates the importance of hearing and speech in the development of nonverbal habits. The severely aurally handicapped child lacks much more than his ability to hear other people and to acquire speech in the ordinary developmental way. Loss of hearing not only results in an impoverished informational environment; it also entails a restriction of the child's incentives to explore his world, a reduction in the things to become curious about.<sup>2</sup>

## **Deaf and Hard of Hearing**

Although no clear division can be made between the deaf and the hard-of-hearing, many of the problems of their education are sufficiently different to warrant their being educated either separately or by different methods. The primary difference in the education of these two groups is in their learning to speak and to understand speech. The deaf child with no useful residual hearing must depend entirely on vision and the other senses for his education. He must learn to understand speech solely by seeing (lip reading, speech reading, visual communication, or visual listening), and he learns to speak via the visual, cutaneous, and kinesthetic senses. If the child with useful residual hearing is taught, like the deaf child, to rely largely or entirely on visual, cutaneous, and kinesthetic cues for the understanding of speech and for learning to speak, he will eventually neglect his auditory potentialities and become functionally deaf. The profoundly deaf child acquires oral speech by learning to reproduce what he sees on the lips and faces of people talking to him. He can monitor his own speech only via the cutaneous and kinesthetic sensations from his vocal apparatus. The hard-of-hearing child needs auditory training along with his speech reading to increase the use of

his residual hearing, so that he develops a combined visual and auditory perceptual system. Except for the ways in which they acquire their communication skills, the education of the profoundly deaf and the hard-of-hearing is not significantly different.<sup>3</sup>

For a child who is born deaf or becomes deaf in his early years before the acquisition of language, there are hurdles to be overcome that stagger the imagination. Most such children are normal in other ways—in native intelligence, in vocal apparatus—but they cannot hear the spoken language which is absorbed and spoken relatively, effortlessly by hearing children. Language is the indispensable tool of learning and education. The deaf persons have hearing losses severe enough to produce serious disorders of communication and must be taught language and communication through special educational procedures. Deaf persons also have in common the fact that they are coupled to the world visually. Although recent technological advances in the design and construction of hearing aids, in addition to increased emphasis on auditory training procedures, have undoubtedly improved the utilization of residual hearing by deaf persons, it is likely that most of them still depend primarily on their vision for communication and for the acquisition of information. However, the scope limits itself to the extent that it is possible to separate them from the hard-of-hearing. These children also require special attention in varying degrees.<sup>4</sup>

The aim of educating the deaf child is to break through the barrier of silence which is imposed upon him by the impairment of hearing, and to make him enter into the verbal world for freely exchanging his feelings and thoughts with others.

The Special Schools and Handicapped Pupils Regulations, made under the Education Act, 1944 in Great Britain define two categories of pupils with impaired hearing: deaf pupils, that is, pupils who require education by methods suitable for those with little or no naturally acquired speech or language; and partially hearing pupils, that is, pupils whose development of speech and language, even if retarded, is following a normal pattern and who require special education facilities but not necessarily all the educational methods used for deaf pupils.<sup>5</sup>

### **Parent Education – A Prerequisite**

The first step in planning an educational programme for an acoustically handicapped child is orienting his parents. Adequate

adjustment of a handicapped child to the normal world depends on the level of adjustment his parents have achieved. Therefore the audiology centre, engaged in evaluating the child's needs, must explain the handicap in a way which is meaningful to his parents.

Over the last five decades excellent programmes for parent education have been developed in countries like United States. A pioneer agency in this field is the John Tracy Clinic in Los Angeles, California. The clinic has helped parents all over the world through their residence programme for parents and children and by their correspondence course.<sup>6</sup> It has emphasized and worked toward good mental hygiene in the family.

Another agency engaged in service to parents and teachers of hearing-impaired children is the Volta Bureau, Washington, D.C. Through its periodical, *The Volta Review*, and its letters about local and national facilities, it has steered parents in the direction of agencies which can be of help to them on the local scene.

The reaction of parents towards their handicapped child is not always in relation to the degree of their hearing loss. Some parents whose children are profoundly deaf will accept diagnosis much more quickly than parents of a moderately handicapped child. The parent educational programme must be organized so as to meet each parent's special needs.

A child becomes aware of sounds and develops vocabulary and language for expression of his primary needs, in the home environment. Sense training is the most useful tool in learning speech, speech reading and language and the same can best be given by knowledgeable parents. Hence it is useful that the parents be counselled from time to time for recognition, understanding and acceptance of the child's hearing loss. They must be guided to understand the need of talking to the hearing impaired child as much as to a hearing child and the significance of every day noises to the child to develop auditory comprehension. The need of providing enough opportunities to the hearing handicapped child to play with his hearing peers must be stressed. Periodical meetings with the counsellor must be arranged for the parents of young hearing handicapped children. Such meetings would provide them all with a common forum for sharing ideas and exchanging experiences. They obtain consolation when they discover that they are not the only ones to have such a child but there are many others with the same type of handicap.<sup>7</sup>

The hearing child learns to speak, from his parents, other children, neighbours and through many other stimuli which come from his social environment. For a child with normal hearing the speech comes automatically whereas in the case of a hearing handicapped child, a special effort and a definite educational plan is needed. During the pre-school years, parents alone can understand the physical and emotional needs of these children. Experiences show that educated and intelligent parents detect hearing impairment of their child quite early. Whereas the illiterate and the majority of common people come to know it only when they see that other children of his age are much ahead in the development of speech and their child has not yet started. Then they take the child from doctor to doctor getting different types of advices like, 'he will outgrow it,' 'he will start speaking after the age of 5 to 9 years' or 'it is general weakness, give tonics and the speech will automatically come' and so on. It is the E.N.T. doctor alone who can give the correct diagnosis.

Clinical observations have pointed out that those children whose residual hearing is good, use hearing aid in time, whose parents bring them to the therapist regularly and make the children practise at times as advised, show good progress. These children develop good speech and language, and are ultimately able to attend normal school.<sup>8</sup>

Most parents are shocked and panic stricken when they learn about the hearing loss of their child who looks so normal. Some feel guilty of having given birth to such a child. They will come to realise the severity and devastativeness of deafness as it had appeared to them never before. This is especially so in the case of parents of those children who lose their hearing at a later stage. These parents must be helped to understand what are possible and what they should do in the case of their handicapped child.

### **Informal Education During the Pre-school Years**

Children who have a minimal or marginal hearing impairment do not require the same kind of systematic special handling during the pre-school years as is indicated for those whose hearing loss imposes a greater handicap. Education for children with moderate to profound losses can be initiated when they have reached the stage of readiness. By the time the hearing child reaches two years of age he has learned to understand what others say to him and is strongly motivated to initiate what he hears and to express himself in words, phrases and

even sentences. Handicapped children have the same desire to communicate, even though their hearing mechanism is defective. Therefore it is imperative that auditory stimulation should be given to these children as early as possible. Though the use of amplification and hearing aids from early childhood is stressed, it cannot in any way correct the loss of hearing caused by a defective auditory sense. It is only an aid, not a panacea.

A hearing aid forced on a child without benefit of audiologic and educational advice can make him hate the imperfect and garbled sound he hears. It is necessary that the choice of a hearing aid and training in the use of amplification be delegated to a qualified audiologist and special educator.

In these pre-school years, children who have moderate, severe and profound losses need training in learning to understand what is said to them (lip reading), in developing intelligible speech and language and in learning to interpret what they imperfectly hear (auditory training). The parents must help and encourage the children to communicate with the hearing world.

"Home training doesn't imply teaching. It can be defined as the provision of opportunities that encourage a child's desire to experiment in different directions. It consists of the provision of particular opportunities that, in his circumstances, can enable him to develop physically, mentally and socially to his fullest capacity..... these situations do not happen enough by themselves; they must be anticipated and contrived frequently and deliberately." <sup>9</sup>

A child with impaired hearing can attend nursery school for hearing children where he can have an opportunity to be with other children. However, it is advisable that only one or two handicapped children attend any one nursery school. The nursery school teacher should have the guidance of an audiology centre or teacher of children with impaired hearing so that she can meet the handicapped child's school needs.

In general, formal education should be initiated earlier for deaf children than for children with moderate hearing losses. With proper guidance of parents and suitable pre-school education in an audiology centre, hard-of-hearing children can be expected to enter the kindergarten at the usual age.<sup>10</sup>

## **Initiation and Termination of Formal Special Education**

The deaf child's severe communication handicap dictates early initiation of special education. In developed countries like U.S.A. there has been a rapid growth of nursery programmes for deaf children both in established schools for the deaf and in conjunction with audiology centres. In both types of programmes children are taught informally and parents are helped to extend that informal education into the home.

In the event that a regular programme of special nursery school education is not geographically accessible to the child, or there are no such programmes at all, when a deaf child is ready to leave home to attend a residential school is a matter of concern to parents and educators. Some psychologists who have worked closely with or in schools for the deaf, feel that, beginning education in a large residential school for children as young as three years may be too early psychologically.<sup>11</sup> They feel that the appropriate age for entrance is about four to four and a half years. Before school placement, psychologists stress the need for parents to embark on a home training programme under the direction of an audiology centre even though contact with the centre can only be periodic. The decision as to when the young child should leave home is a question which must be considered thoughtfully and on an individual basis.

It has been the trend of some guidance agencies to discourage placement in a school for the deaf for all children who show even a small amount of residual hearing. This attitude seems unrealistic. Schools for the deaf are educational institutions. Most of them attempt to make their classrooms and living quarters (if they provide residential care) as home-like as possible. Their programmes are presumably based on sound developmental principles. In recent years most schools have adopted a "swinging door policy," that is, children enter a special school but they also leave it. This policy enables a deaf child, when he is ready, to leave the sheltered environment of the special school and go back to the local school. A plan of this sort is possible when there are supplementary helps in the child's home community. In general, a child is ready for formal special education when he is intellectually, academically, emotionally and socially ready to cope with daily help away from home.

Experience has shown that children of high school age adjust to a regular school because their hearing peers can accept them with

considerable ease and insight. This does not suggest that deaf children should wait until high school age to leave the special school. Rather, each child must be considered individually and both the home and the regular school situations need to be the kind in which he can succeed adequately and comfortably.

In most of the schools for the deaf in developed countries there are classes of children who have only moderate losses of hearing, but for one reason or another did not succeed in regular school classes and, hence, are placed in a special school for a short period. They may even have begun their education in the special school. Placement there is made with the understanding that when they are ready they will be transferred back to the local regular school. This presupposes implementation of the goal of returning the child to regular school.<sup>12</sup>

The knowledge of words by which people, objects, reactions and ideas are known and identified is sometimes entirely unknown to a deaf child. He may not even know that he himself has a name. To prepare a deaf child for this commonsense knowledge at proper age is very important. This knowledge in clinical terminology is called 'reading readiness'. The procedure used to prepare a deaf child for reading readiness somewhat differs from that used for a hearing child.

### *Reading Readiness*

Reading readiness comes before writing age. A deaf child can match familiar noun words with their respective pictures or objects although he does not know the names of alphabets. He simply matches the whole visual pattern of the word to the picture. Children perceive objects and forms at first 'as wholes'. It is the marked difference in the visual patterns of the word 'as a whole' which enables him to identify each word. The length, height and shape of the word also help him in discriminating its visual pattern.

If one shows three words to a 3 or 4 years old child taking care that the words are of his own interest, like Ball, Dog, Elephant and match them with their respective pictures, after a few attempts of matching he will put the correct word on the correct picture. In case of his inability to do this, it can be presumed that the child has not reached that stage of matching or he is not paying attention due to lack of discrimination of size and shape.

Reading programme is the only one aspect of wider importance for fitting children into school learning. School learning comes after the child is fully prepared and discriminating enough.

Five important points to note for reading readiness of a deaf child are:

- (1) Mental or intellectual level.
- (2) Lip-reading ability plus hearing capacity.
- (3) Social and emotional attitudes both in groups and as individuals.
- (4) Physical condition.
- (5) Child's vision, hearing, speech and physical state.

It is valuable for a deaf child to have an early beginning in learning to read. This should come after lip-reading. Once the child has formed the habit of looking for speech and has made good progress in lip-reading and also tries to imitate few words spontaneously, we can begin to teach him reading words, phrases and sentences.<sup>13</sup>

## **Systems of Education**

As in the case of other disabled children 4 systems of educational facilities are available to the hearing impaired children also. They are:

1. Residential schools
2. Special Day School
3. Special Class in a regular school
4. Integrated programme in which hearing impaired children are taught along with hearing children in regular classes with the help of itinerant teachers.

The details of these programmes and their relative advantages and disadvantages have been explained in the chapter on general principles of education of the handicapped (Chapter X). In the case of education of deaf and partially hearing children also modern thinking pay dividends to integrated system.

The importance of selective school placement of handicapped children has been discussed in Chapter X. Which of the above systems

would be appropriate for a deaf child is a matter to be considered in detail by parents of deaf children and the agencies guiding the parents before a decision is made. For none of these facilities are best for all deaf children in the same manner or degree. In considering proper school placement for the deaf child, the decision must be based on the consonance of the school's policies and personnel with the child's and parents' needs. In choosing the appropriate school placement for a deaf child many factors such as location of the school, parental attitude, extent and nature of the hearing problem, academic potential, language aptitude and the philosophy of the school's personnel are to be taken into account.

## **Methods of Teaching**

It is the goal of every educator whether he be teaching a normal child or a handicapped one that the techniques used meet the needs of the individual child. Through the ingenuity and efforts of many a teacher all over the world, several techniques of teaching language and communication to the hearing impaired children and adult have been developed. The following are the various methods used in different countries today.

1. Manual communication including sign language and finger spelling.
2. Lip-reading.
3. Writing.
4. Oral Method.
5. Combined Method or total Communication.

## *Historical Review*

In the early history of the education of the deaf extensive use was made of alternate methods of education including the use of sign language and of finger spelling. The story of the development of the sign language is quite interesting. It is presumed that nine thousand years ago men used pantomime to express their ideas through signs. For thousands of years many could not learn this art like their ancestors. Slowly and gradually this natural language was purified and socialized and today several forms have come into existence. These can be used for reading, writing and speaking purposes. Professor Alexander Johanneson of Icelandic University has indicated that, "speech and words are essentially and originally pantomimic of jaws, lips and tongue,

etc., and a thousand years ago people were related extensively to hand pantomime like the deaf of today who use it to express their ideas. From this point of view noise of speech is not essential but its gestures of articulation are meaningful. The noises of spoken words become valuable so that they might be understood in dark or corner."

Neither the deaf nor their teachers have invented the finger spelling; this art has been learnt from others. Professor J. C. Gardon of Gallaudet College is of the opinion that the people of Egypt and Greece used finger signs for number. Bede had given pictures of three alphabets in his book and has written that the finger spelling has been in use since one thousand years ago. Priests and others while taking silent oaths or persons for silent communication were using both signs and finger spelling.

In 1579, Rosellius a Florentine monk published three similar alphabets. The finger alphabet for the instruction of the deaf was at first used in Spain. At that time one handed alphabet was used which is reflected in the plate of 1579 of Florentine. Pedroponce de Leon (1520-1584) had the idea of this experiment.

Periere and his deaf pupil, Sabouraux de Fontenay modified and used Spanish alphabets in France. The Abbe Charles Michael de L'Epee and other French teachers used it. In those days these alphabets were not refined but clumsy. At the time of Sicard these were further modified and bettered.

De L'Epee who is known as the father of the education of the deaf is also the originator of the Manual Method or Sign Language. After obtaining his law degree he practised as a lawyer for three years. Later on he became a priest. He revolutionized the deaf education. When he became priest, Father Vanin was teaching two sisters with pictures and after his death their education was interrupted. De L'Epee started to teach them along with other deaf children. He decided to adopt natural signs in his teaching but soon he found its limitations to express grammar and language, and therefore, he used some more signs. Generally his signs are based on natural pantomime. He also published a book about his signs. Although he used articulation in teaching deaf children he believed signs as vernacular language of the deaf. He thought necessary the learning of the communication and language by them. In 1760, he founded an institution for the deaf in Paris. He established it without remuneration. In 1789, after his

death Abbe Sicard became head of the institution. Three years later the institution was taken over by the State and named as National Institute.

De L'Epee's method then was to take the signs which the deaf themselves used, systematise them, improve them, and add grammatical refinements. He considered this sign language to be the natural language of the deaf, not in the sense of something innate in their makeup and differing from hearing people; but rather as we might say that a hearing man in a foreign country not knowing the verbal language used there, will naturally resort to signs. Deaf people in this sense, not knowing verbal language, naturally resort to signs. De L'Epee thought that to confine the imparting of information during a lengthy period of time to what could only be communicated through a poverty stricken, almost non-existent vocabulary of words, was wrong. He was of opinion that to use their natural sign language would stimulate their minds, widen their outlook and give them an urge to use written language for the better expression of their thoughts. De L'Epee's aim, therefore, was to speed up the acquisition of verbal language in written form.

It is remarkable that this method is in vogue in some of the American Schools. In the early years of the last century, Thomas Hopkins Gallaudet was sent by an association of parents of deaf children to Europe to study methods of education. He was given a cold reception in Edinburgh and London, and for various reasons little information was imparted to him. He therefore went to France at the invitation of Sicard where he was welcomed and given every facility to see how children could be educated by the manual method and writing. He came back with a teacher named Laurentclerc who was a teacher in that school. They took these methods back to America and used them in a school which was founded at Hartford in 1817. Here Laurentclerc taught sign language to teachers. This language is also known as French method.<sup>14</sup> The manual method, therefore, held the field for many years in America.

In Germany Heinike taught his deaf children speech and lip-reading and was convinced that this was a much superior method. Braidwood in London also stressed the value of the oral method and taught mainly using that method. These three pioneers passed on their methods to their successors.

## 1. *Manual Communication*

There has recently developed an increased interest in research in the use of manual communication by deaf children. The Russians claim that by starting to teach manual communication at the age of two years they are able to develop vocabularies of several thousands of words by the time deaf children are six years old.

Two systems of manual communication are used by the deaf. One is sign language and the other is Finger spelling.

### (a) **Sign language**

It is a set of manual configurations, movements and gestures corresponding to particular words or concepts. Signs also include shaping of face and its expressions, nodding head and natural movements of hands.

There are national and regional variations in sign language that are comparable to those of spoken language. In some western countries the schools use mostly sign language in the teaching of the deaf. But its use and shape are different in India. In western countries, the sign language is thought as the symbol of universal convention through which people express their thoughts. Best says—"The sign language consists of gestures (specially of arm or hands), bodily movements, mimic actions, pantomime postures and to carry a close shade of meaning, even the shrugging of shoulders, the raising of eye brows and the expressions of the face, all appealing graphically to the accustomed eye."<sup>15</sup> The American Sign Language (A.S.L.) with certain regional variations is used by the deaf in North America. The A.S.L. is somewhat like pictograph writing in which some symbols are quite arbitrary and some are representational. For example, the sign for "always" is made by holding the hand in a fist, index finger extended as in pointing while rotating the arm at the elbow. This is purely arbitrary. The sign for 'Flower' is more representational. It is made by holding the fingers of one hand extended, all five finger tips touching (the tapered hand) and touching the finger tips first on one nostril and then the other as if sniffing a flower.

Another class of signs is that of selecting some outstanding characteristic and miming it. For example the characteristic feature of most houses is their sloping roof, so two hands held in front of the chest with the tips touching and the hands slopping away roughly

forming the shape of a roof refers to and means 'house'. The characteristic way of dealing with a loaf of bread (until the advent of sliced loaves) was to cut it into slices. Holding the left hand palm upwards in front of one, as if holding something upon it, and then holding the right hand as if it were a large knife and moving it forwards and backwards a couple of times indicates cutting bread or bread itself.

All signs are arbitrary to a degree. The literate deaf individual typically uses a combination of A.S.L. and finger spelling in manual communication.

Natural gestures are movements of the arm or hand accompanied by the appropriate facial expression. Gestures are often used by ordinary people, for instance outspread hands, palm upwards, puckered brow meaning 'I don't know', the beckoning movement of the hand meaning "come here" and so on.

Conventional signs are often used by the deaf amongst themselves. There is not always an apparent connection between the sign and the meaning it conveys. For instance scratching the cheek means "Sugar". In different areas and countries the signs for the same things vary considerably. In spite of these limitations a group of Chicago researchers after studying people who were born deaf concluded that the best way for the deaf to communicate, is through sign language and finger spelling.<sup>16</sup>

Some are of opinion that sign language is not international; it is not understood by a majority of hearing people. Although, it has an immediate appeal, it is stilted and has none of the nuances of spoken language. Sign language immediately debar the deaf from mixing with the hearing and makes them conspicuous. Some other disadvantages in using sign language are: (a) because such a method lacks grammatical accuracy, such as verb endings, and the language order of thoughts, there can be room for misunderstanding, (b) It is quite impossible to converse accurately by this method on definite subjects such as mathematics, history, politics, nature, literature and so on.

Some others hold the view that signing is an international form of communication.<sup>17</sup> A qualified deaf person can travel round the world and communicate with others even if he does not know French or German or other language.

## **(b) Finger Spelling**

It is the second system of manual communication in which the configurations of the hand correspond to the letters of the alphabet. In this system a spoken language is spelled out manually and therefore it is known as manual alphabet that is, one's fingers are placed in different positions to indicate the letters of the alphabet whatever be the language. Through this method the deaf and hearing persons can, after practice, spell out quickly the words which express their thoughts.

People use Manual Alphabet or Finger Spelling besides gestures and natural signs. These are symbols both for writing and expression. It is believed that by using Manual Alphabet or Finger Spelling the user becomes well acquainted with the structure of the language and develops his mind quickly. Thus knowing the written language and on the basis of reading and writing, one communicates easily. Without using even writing one exchanges one's thoughts with those who know them.

Finger spelling is quite simply the selecting of 26 different positions of the fingers to signal the 26 letters of the alphabet. In Great Britain two hands are used and the fingers placed in such a way that the positions thus formed become similar to the shape of the printed letters.<sup>18</sup>

For example, to form the letter T the edge of the left hand makes the top of the letter and the first finger of the right hand the down stroke. In America and on the continent only one hand is used and the positions vary slightly in different countries. In Russia one hand is used but the positions of the fingers differ in a number of respects from those in other countries since its alphabet also differs.

The advantages of finger spelling are:

- (a) If the hearing friend will take the trouble to learn this he and the deaf person can converse accurately and with considerable speed, but not as fast as normal conversation.
- (b) It is much less of a strain on the deaf person's power of concentration than that created by lip reading.
- (c) Russians claim that the use of finger spelling fosters rather than retards the development of oral speech and speech reading and that children so taught eventually abandon finger spelling and rely solely on oral speech and speech reading for communication.

## *2. Lip Reading*

This means the deaf person understands what the speaker says by watching carefully his or her lip and mouth movements, and replying by speech.

This method of communication is the nearest possible approach for a deaf person to normal means of social intercourse with hearing people. If the deaf person is an expert lip-reader and has good clear speech, it will be fairly easy for a hearing person to converse with him.

Even so, the hearing person must be prepared to speak slower than usual and sometimes repeat what he has said. Generally speaking there are no deaf people who rise to such a high standard of proficiency in lip-reading and speaking a language which they have never heard.

This method is, for the deaf, the nearest approach towards normal thinking in language.

### **Disadvantages**

- (a) Lip-reading for any length of time is a big strain on the eyes of the deaf person. He must keep his eyes fixed on the lip and mouth movements of the speaker. Only then is there the possibility of his following the complete sentence.
- (b) A conversation in which several people take part cannot be followed in detail and understood by the deaf person looking first at one person and then at another.
- (c) The deaf speaker will not be as familiar as the hearing person with the many and varied conversational forms of his own language, since he has never heard them.
- (d) It is necessary that the hearing person speak slowly and clearly, to give the deaf person a chance to lip-read. This makes the conversation very slow, because often sentences must be repeated, it is essential also that the deaf participant knows the topic of the conversation at the outset.
- (e) The person learning to lip-read will, as lessons proceed, be told to observe a group of letters which look similar to each other for example, 'P, B and M' as they are pronounced when saying such words as 'pie, by and my'. But his troubles are not at an end with these three, for he will be warned

that another group of letters also appears to be identical; these letters are 'T, D and N' as, for example, in saying the words 'toe, dough and no'. He may hope that six ambiguous consonants will be all he has to cope with, but to his consternation, he will be told that there are still more. It may be simplest to set out some of the consonants which look identical giving examples of words which contain them and therefore look alike. Here they are:

P, B, M, as in PAT, BAT, MAT, etc.

T, D, N, as in TIE, DIE, NIGH, etc.

F, V, as in FAN, VAN, or FINE, VINE, etc.

C (hard) G (hard) K as in COAT, GOAT, or BAG, BACK, etc.

J, G (soft) SH, CH as in SHOES, CHOOSE, JEWS, and SURGE, SEARCH, etc.

Clearly it will be seen that well over 50 per cent of the consonants are ambiguous and as certain vowels cannot be distinguished from others, this means that some thousands of words can be misjudged or guessed wrongly. Yet severely deaf people are compelled to depend upon this uncertain instrument for communication.

- (f) Ambiguity is perhaps the biggest disadvantage of lip reading. There are many spoken words which, to us, sound different, but to a deaf person look identical from the point of view of the lip and mouth movements of the speaker. For example, 'paper', 'baby', 'bell', 'bed', 'but' and very many others look similar.
- (g) Because of the last mentioned difficulty lip-reading gives room for many doubts to arise in the mind of the deaf person. These hinder his quick understanding of what is being said and, therefore, delays his giving a proper reply. Coupled with this, therefore, will probably be a certain amount of nervous tension.

These difficulties of a deaf person, of which hearing people are often unaware, tend to create the unjustified impression that the deaf are a little stupid.

When a child is born deaf, he must learn to communicate without the aid of sounds, which form the basis of a normal person's language. For the past 100 years, deaf children had been taught to read lips.

Since most deaf children are taught only to read lips, they never reach their true academic level even though they have the same range of intelligence as normal individuals. About 30% leave school practically illiterate, about 60% reach only the fifth grade level, and just 5 per cent a tenth grade level or better.

The problem with lip-reading is that 40 or 60 per cent of English sounds are homophonous; that is, they look like some other sounds on the lips. As a result, the deaf child perceives less than half of what is said to him. Actual comprehension is less than one fifth.

Various studies have been made on the usefulness of lip-reading and generally it is believed that hardly 50% of speech is understood correctly.<sup>19</sup> While this is happening in countries with one language—English, the problem will be more complex in a country like India with many languages. These limitations should be borne in mind by all educators of the deaf.

### *3. Writing and Reading*

If an educated deaf person cannot speak clearly and lip-read well, he can express his thoughts by writing, and can then read the written reply of the hearing person.

The advantages of this method are:

(a) If the deaf cannot understand what we are trying to say whether by speech, signs, gestures or finger spelling, we can put it down in writing for them to read.

Likewise, if we cannot understand them they can write their thoughts for us to read.

(b) By this means of conversation the accurate use of language is possible.

One disadvantage in this case is that it is an extremely slow method of conversing.<sup>20</sup> Therefore it must be taken up as the last resort when for both the hearing and the deaf partner all other systems of communication have failed.

### *4. Oral Method*

The method which is employed in almost all the schools where deaf children are educated is called the oral method. This implies the

educational process leading to communication by the deaf child with other individuals through speech and lip-reading, utilizing to the fullest whatever residual hearing there may be.<sup>21</sup> In the early history of the education of the deaf, extensive use was made of alternative methods of education including the use of finger spelling and the sign language. At the present time almost all children enrolled in schools for the deaf are given opportunity to learn by means of Oralism, at least in the early years of their education.

The oral method shuns signing and spelling and stresses speech as the normal communicative skill, all the while giving the child as full a command of language as possible. The oral method chiefly using the mouth. However, for reasons not entirely clear, some deaf individuals seem unable to master oral speech, and these people must not be neglected. In fact many schools use a combination of speech and a manual alphabet (finger spelling).

### *5. Total Communication or Combined Method*

Total communication for deaf individuals involves a communication system in which language transmitted through speech and hearing in normal hearing and speaking persons is made visual and auditory for persons unable to hear and speak normally.<sup>22</sup>

It means sending and receiving communication completely by both the speaker and the listener respectively.

In normal hearing and speaking persons, total communication exists when one expresses a thought through speech and another receives his thought through hearing. Some natural gestures and facial expressions may aid these people in a more total communication thought.

Between deaf individuals total communication takes place when one expresses a thought through impaired or unintelligible speech, a form of sign language, finger spelling, natural gestures and facial expressions, and another receives his thought through impaired auditory clues, speech reading, reading sign language, reading finger spelling, and receiving natural gestural and facial expression clues.

In both hearing and deaf individuals, total communication involves the expression of thought through writing and the reception of his thought through reading.

Total communication provides for a union of hearing and deaf persons by expanding a communication system to reach the capacities of each group. The deaf population use their impaired hearing for auditory clues and limited speech development in attempting to use the communication system of normal hearing persons.

Through total communication, deaf and hearing persons can live and work together intellectually and socially on more even terms. In places where total communication is accepted in its complete form television programmes, meetings, conferences, school classes, religious work, social interactions etc., can be understood and enjoyed more fully by those who have hearing problems. This in turn makes a better world for all concerned.

“The road to total communication is not difficult,” says an internationally known communications expert, Prof. Frances M. Parsons.

The key to total communication is the simultaneous usage of finger spelling, signs and facial expressions, but fewer and refined. “It gains in stature, dignity and effectiveness when people are skillfully instructed in the three phrases of this language—colloquial, conversational and dignified platform usage.” According to Parsons, “hand language requires a longer time to learn but eventually it should be included for the complete total communication.”<sup>23</sup>

Total communication means the combination of oral speech, audition, lip-reading, finger spelling and sign language which are signs used systematically, involving a complete grammatical structure.

A widely accepted definition of total communication was formulated by Dr. David Denton of the Maryland School for the Deaf.

1. By total communication we mean the right of a deaf child, to learn to use all forms of communication available to develop language competence. This includes the full spectrum: child-devised gestures, speech, formal signs, finger spelling, speech reading, reading and writing. To every deaf child should also be provided the opportunity to learn to use any remnant of residual hearing he may have by employing the best possible electronic equipment for amplifying sound.

This definition includes all the processes involved in all the prevalent methods of teaching the deaf i.e., oral, manual, combined

as well as aural. From the very beginning there has been a controversy between "oralism" and "manualism" and it still persists.

2. Those who advocate manualism generally contend that too often the results of exclusively oral teaching are unsatisfactory and that the deaf child cannot make himself understood to an untrained listener. Furthermore, it is argued, many children do not have the aptitude to benefit from oral instruction and the time spent in this type of instruction could more profitably be used in concentrating on the child's 'mental' development rather than on his means of communication.<sup>24</sup>

Prof. Parsons herself says that she had experienced the teaching of Individual Systems-Oral and Manual language-and only when she was introduced to the total approach did she feel really a whole person. Words are so fleeting on the lips and every person has his own way of speaking, but if a deaf child is taught with the total communication technique, his sentence structure is not only correct, but also not stilted; besides his concepts widen quickly, his mastery over spellings is quicker, and his language develops very fast. His infant years-one to six-are crucial for learning the basic structure of language and this technique hastens the input of language and the deaf child begins to think in words rather than images. For example, "I am going to town"-is the correct pattern but a deaf child will invariably say, "I go town". AM, GOING, and TO are the words which give the complete structure and which are taken care of right from the start in "total communication". The young child automatically learns as part of his natural conversation before he comes to learning grammar; he sees "am" and "ing" linked in the same sentence which if said just orally without signing will not be perceptible on the lips.

One of the essential factors in education of the deaf is that the child must be tutored in his "home language". Just to equip the child with only manual language is depriving him of his birthright: his right to speech. A deaf child is a visual child. Therefore the Total Communication is an incentive approach where the child through association of many hand patterns (sign and finger spelling), remembers what he is learning and thereby develops his language and speech. Also signs are universal-"water" said in English, Marathi and Bengali has three different lip reading patterns whereas "water" has one pattern in Total Communication whichever language is used.

We use so many gestures in our conversation with the hearing person; therefore it would be unfair to prevent a deaf with using one, if he can also speak aloud (speech) his thoughts, using a correct sign instead of exaggerated gestures.

Every one who works with the deaf should have solid knowledge of the deaf person's communication problem and communication behaviour in a structural linguistic sense; for only on the basis of this knowledge can successful language teaching start.

It is possible to educate a few children in such a way that they will be able to forego all other communicative means except speech and lip reading. However, those who practise this principle should be warned that: (1) speech is not identical with language, and language is more important; (2) success in speech training does not guarantee success in language teaching; (3) the deaf child who can live happily with speech only is the exception.

Frustration can result from forcing the deaf child to use speech and lip-reading only. But if permitted to use a combination of speech with finger spelling and signing, or with signing only, he can communicate in a happy and relaxed fashion.

Success in language teaching is possible even though the results of speech training may be only fair to poor. However, such efforts must always be based on an acknowledgement that training is a compensatory, not an additive, device. We can accept the fact that a child is deaf but not that he is unable to understand or to make himself understood.

No means of communication can be successful if the child's language competence is inadequate. In a conversation, the hearing partner has to be aware of the fundamental distinction between poor communication skills and poor command of language.

Bearing in mind all the various difficulties involved in the methods mentioned, combined method is the quickest and probably the most satisfactory of all. It is often used by hearing people who take time to become acquainted with the adult deaf.

It allows for the greatest possible freedom of spontaneous expression which the handicap of deafness allows, and, therefore, reduces to a minimum the frustration which so easily arises from the other methods.

Sad to say there are still only very few hearing people who are so acquainted with the deaf as to be able to communicate with them in this way.

Of all the various means of communication, the one which best suits the needs of the deaf individual concerned, should be used.

Deaf children in special schools are faced with the vast problem of learning their mother tongue without ever hearing it.

To balance up their efforts in learning the language of society, it is vitally necessary that such members of society who have contact with the deaf, should practise the most suitable method of communication with them.

## **Curriculum**

Charlotte B. Avery points out that in planning a development curriculum based on the needs of children with impaired hearing that will enable them to operate more effectively in their own environment, the school must keep as its goal the curriculum used in regular schools, but modify it to meet the needs of the handicapped children. Most schools for hearing children now use a child development approach to the curriculum, that is, "..... an effort to apply to the education of children the lessons learned from a study of the children themselves".<sup>25</sup> Therefore, in order to plan a suitable curriculum for hearing impaired children there must be a thorough knowledge and understanding of normal child development and behaviour as well as a knowledge of the special problems created by hearing impairment. There should be a direct relationship between the special lessons and what is being taught in the classroom.<sup>26</sup> The special lessons will include vocabulary, concepts and information which will enable the hearing impaired child to progress equally with his hearing classmates.<sup>27</sup>

### *Special Needs of Hearing Impaired Children*

The young child with useful residual hearing, fitted with a hearing aid and equipped with good home training, will probably develop best in a normal environment where he experiences oral speech all day long and where special efforts are made to talk to him as much as possible. The profoundly deaf child will require supplementary training by a special teacher of the deaf. The special teacher can also instruct and train the mother and the regular teacher so that they can provide

supplementary speech and speech-reading training for the child. A good, natural, normal nursery school programme, with the aurally handicapped child using his hearing aid, if indicated, and the teachers making special efforts to teach and stimulate him, is probably the best supplement to the home-training programme for the three-to-five year old.<sup>28</sup>

During the pre-school years the child with impaired hearing may often be neglected because the impairment goes undetected, or may be overtrained by misinformed, rejecting, or overenthusiastic parents. One is almost as devastating as the other. The goal in planning a home training programme or a nursery school curriculum must be to allow the child with a hearing loss to grow as a child. "His needs as a child must be provided for by exposure to a normal, happy environment in which he may enjoy the activities and experiences of the hearing child. His needs as a hearing-impaired child can be met by consciously designed methods employed by the adults who guide him."<sup>29</sup>

The child development approach to curriculum planning emphasizes parent education. Parents are the child's first and most important teachers. They can be his first guide to good emotional adjustment as well as the guardians of his physical well-being. If the family itself is well adjusted, happy, and able to cope with the problems which every family faces from day to day, then their handicapped child can be expected to make good school progress, limited only by his intellectual and hearing potentials.

In the pre-school years the hearing handicapped child requires, in addition to experiences he needs as a child, the three extra tools for language development. He requires as a handicapped child: (1) lip-reading, (2) auditory training, and (3) speech training.<sup>30</sup> Lip-reading, auditory training and language training must be integrated in such a way that each is a part of the same process.

### **Lip-reading**

This enables a person, regardless of whether he possesses normal or impaired hearing, to understand speech by attentively observing the speaker.<sup>31</sup> The person who receives his language through the visual sense must be taught to lip-read if he is to become proficient in understanding what is said to him.

Long before the hearing baby can understand words which are said to him he learns to interpret their meaning through facial expression, gestures, voice quality, and physical contact. After he has learned to interpret words he learns to turn his attention to a speaker, especially in a noisy environment. He can be said to be lip-reading. The term refers to much more than merely reading lips. All factors including lip movements, facial expression, gesture, and the situation itself are taken into account by the person who is lip-reading. (Some authors prefer to call the process "Speech reading" or "visual communication.") Whatever sound the lip-reader may hear, accompanying what is said, can be considered an aid to the process of perceiving speech.

There is a systematic procedure in the teaching of lip-reading just as there is in the teaching of reading or arithmetic.<sup>32</sup>

Awareness to lip-read the word comes very early if parents talk to their deaf child usually as they do with their normal child. The deaf child can easily be trained to lip-read by simple talking and not by making gestures.

The word building process is also easy through this method. Communication with other people becomes possible. Once this habit of lip-reading is developed there is always confidence found in children and they try to learn more and more in everyday life. There are two types of lip-reading: one is 'casual lip-reading' and the other is 'specific lip-reading'. Both are essential for understanding. Specific lip-reading is very much important when a deaf child is to learn something without any previous background. Casual lip-reading helps the child to understand language in a particular situation. He can very well lip-read you when you ask him to bring your shoes at the time when you are to go somewhere especially while leaving for office.<sup>33</sup>

A number of methods for the teaching of lip-reading have been devised, usually for use with hard of hearing adults.<sup>34</sup> The present day teacher will find it useful to acquaint himself with those methods, evaluate them carefully, and then decide on his own. Streng points out that the teacher will find that "... building a series of lessons on subjects, topics or situations vital and interesting to the children is psychologically sound. Learning is expedited when interest is a factor."<sup>35</sup>

The teacher of lip-reading always uses voice when teaching. The voice may be soft during exercises, but never should he attempt to talk silently. The teacher's articulation should be natural. Exaggerated speech movements detract from the meaning of the context. She should face the light so that the lip-reader encounters as little eye-strain as possible. It is also useful for children to practise lip-reading each other. The teacher will help his pupils take full advantage of facial expressions, gestures, and situational clues, as well as interpreting what the lips "say".

In order to prepare children to lip-read in real life situations where there will be background noise, the teacher introduces other sounds during lip-reading practice. He can begin by using sounds which are not distracting (orchestral music), and finally work up to very distracting noises (conversation or loud environmental noises). Sound-effects records can be used to stimulate background noises. Later, children can be expected to lip-read on excursions in the school building or out of school.<sup>36</sup>

### ***Auditory training***

The second aid to the acquisition and perception of language for the hearing impaired is auditory training. The way in which the hearing-impaired child is taught to use the residual hearing he has with or without the help of a hearing aid is called auditory training. Fortunately electronic hearing aids which amplify otherwise inaudible sounds assist the handicapped child remarkably in his auditory discrimination. Even though a hearing aid cannot be expected to correct the hearing of a child so handicapped as to require special education, it is the greatest single development to aid him in the perception and acquisition of language.<sup>37</sup>

Auditory training plays a very important role in the development of language and speech of a child with impaired hearing. This training also helps the parents as well as the hearing therapist to estimate more accurately the nature and degree of hearing loss and its relation to the child's further progress. Auditory training is important for the children who have congenital or acquired hearing loss since infancy or childhood. It helps children to get maximum advantage of their residual hearing. It is generally found that even most of the so called "deaf" children, have some residual hearing. The greater the residual hearing the more fully the child may be taught 'speech' as a useful tool in everyday life. As soon as hearing loss is detected in a child his

early years of life must be filled with various loud sounds. The child must be given an opportunity to learn to hear.

This training systematically develops the child's discrimination of: (1) gross sounds—including environmental noises; (2) rhythm patterns of speech and music; (3) easy speech sounds in words—the vowels; and (4) difficult speech sounds in words—the consonants. Auditory training is the improving of the child's listening skill.

The audiologist who has recommended a hearing aid for a particular child can predict only partially whether or not he will be a good listener. Certainly his audiologic analysis<sup>38</sup> cannot be used as the sole predicting measurement. It provides only a clue. The psychological function of hearing, which Meyerson calls "auding,"<sup>39</sup> determines how well the person with impaired hearing uses his residual hearing. Listening or auding ability contributes considerably to the person's acceptance of a hearing aid. The special teacher can determine, over a period of time, the child's potentialities for being a good listener. Systematic and interesting auditory training, along with understanding and appreciation of the child's problems with and feelings about his hearing aid, will go far in making him a good hearing aid user. Factors which influence his acceptance of a hearing aid include the enthusiasm and support his family, teachers, and classmates show toward his wearing an aid.

The child who cannot wear a hearing aid (because his loss is only minimal or because that loss is confined to the high frequencies) also profits from auditory training. He can be taught to improve his listening skill by utilising to better advantage all of the hearing he has.

Development of auditory discrimination is basic in pre-reading activities for normal children; obviously it is supremely important for children with hearing impairment.

Phonograph records specifically designed for auditory training<sup>40</sup> are few, but the hearing therapist can find any number of children's records that can be used effectively for auditory training. They must be chosen wisely; however,<sup>41</sup> records, tape recorded stories, singing games, excursions out of doors and around the school, and live-voice exercises are all part of the equipment for auditory training.

Major stages of auditory training programme, according to Carhart, are:

- i. Development of awareness of sound;
- ii. Development of gross discriminations;
- iii. Development of broad discriminations among simple speech patterns;
- iv. Development of finer discrimination for speech.

*(i) Development of awareness of sound*

In this step the child must learn to know the presence and absence of sound.

An awareness of sound should be developed by surrounding the child with noises that are related to his everyday life. The idea of awareness of sound should be given with the help of different types of noise making toys, hearing aid and ear-trainer. Assessment of tolerance of sounds is also made on the speech trainer and ear-trainer.

*(ii) Development of Gross Discriminations*

The next step involves teaching the child sounds which differ from one another. The child is imparted training to differentiate between highly dissimilar gross sounds. For this purpose different types of noise makers like bells, drums, low frequency whistles, automobile horns etc., are used. The child should be given a chance to be familiar with the noise making objects; these can be offered in the form of play. He should also be given chance to make the sound himself.

*(iii) Development of broad discrimination among simple speech patterns*

The aim of this step is to teach the child to start learning to understand speech. In the beginning two words in which two dissimilar vowels take place can be given for hearing exercise. For example in Hindi two words the 'Ah' "Tala" and the 'Se' "Cheekoo" are quite different from each other. Later on some short sentences which are closely related to his every day life should be taken like 'Do you want a doll?' or 'Show me your eyes'. In this way the child will learn to respond to spoken words and phrases in a normal way.

#### *(iv) Development of finer discrimination for speech*

The purpose of this final stage of auditory training is to train the child towards building increasingly precise discriminations, particularly for longer speech units. The methods and techniques are similar to those of step three; however, the child is now asked to select the 'heard' word from among choices that sound quite similar e.g., in Hindi "Papa-Baba," "Pata, Kuta", "Pen-Pin." etc., The child's listening habits are directed to more and more of the things familiar and close to him in his environment. For further practice, stories, phonograph records and conversation periods are very helpful.

Ewing and Ewing outlined comprehensive schemes of auditory training for children of different ages and degree of impairment of hearing. For children from two to eight years of age who had no naturally acquired speech but who were not having total hearing loss four types of training were recommended:

- (1) Practice in listening and speech reading, speech relevant to the child's interests.
- (2) Listening of rhythmic sound, especially music and singing.
- (3) Listening to sounds incidental to daily life.
- (4) Using hearing aids in every possible situation.

It is recommended that:-

(1) An opportunity should be provided to a child to hear noise or words which the child likes through repetition and make them a part of his daily experience.

(2) Always talk loud to the child when communicating with him. Both gestures and speech can be used to make ideas more clear. However the goal must be to lessen the gestures. Hearing aid should be used frequently.

(3) Always speak distinctly and at an appropriate loudness. When convenient, speak as close to the child as possible.

(4) The child should be given articulation work and speech therapy programme every day.<sup>42</sup>

#### **Speech training**

The hearing baby babbles, coos, and jabbers all manner of sounds before he finally begins to imitate and use the language he

hears. Language emerges when the first spontaneous word is used to communicate. Through speech the pre-school child demonstrates his grasp of concepts which are basic to his developing awareness that language has structure. To be truly communicative, however, speech requires a common set of symbols (words) which are intelligible. The average child of three is able to speak intelligibly enough to communicate adequately.

The hard-of-hearing baby also babbles, coos, and jabbers all manner of sounds (if his vocal mechanism is normal). The greater his hearing impairment is, the less pleasure he is able to get from the auditory stimulation of vocalization. Very soon, then, he ceases his babbling unless he is given training in using speech. His training utilizes all of the senses: vision, hearing, touch, and kinesthesia (muscle feeling).<sup>43</sup>

Children with severe and profound hearing losses must be taught to talk; children with marginal and moderate hearing losses will need to have their speech corrected.

Conservation of natural voice quality and correction of articulatory defects comprise most of the time spent on speech training. The teacher should evaluate the speech of his pupil in terms of its articulation and the quality, pitch and melody of his voice. A tape recorder can be used to permanently record speech samples periodically throughout his training. Often children are startled to realize how they sound. They can't believe that they sound like that.

It is important for the teacher to guard against meaningless and dull drills on sounds, per se, in speech training. The material used for speech correction must include attractive motivational device so that the pupil will want the process. The child's parents and classroom teacher can be a real boon to him by giving praise when it is due. A stranger's effortless understanding of what he says will be a real reward, for there he will feel that he is communicating adequately.<sup>44</sup>

It is in the area of language development that the hearing handicapped child must have systematic special training even in the pre-school years. That development is trained through lip-reading, speech and auditory training.

## Sense Training

Sense training must be described as the spring board to communication for the young hearing impaired children. It helps the child in developing special reading for language understanding, in speech preparation and for reading 'readiness'.

Sense training is a form of learning. It is offered in the form of play for the child. He can touch, manipulate, put together, take apart, match experiment and attain a feeling of success through constructing forms. The development of sense of touch, sight, smell and hearing is closely related to the development of speech, speech-reading and reading. While this may be done in a clinic, the parents can give the same type of practice with the help of attractive methods and objects to their child at home. They should not feel that the time spent in matching colours, pictures and objects is a waste.

The following methods may be used for sense training.

### *1. Matching of objects*

- (a) Matching objects which are same in all respects.
- (b) Matching objects in different sizes but of same colour.
- (c) Matching objects of different colours.
- (d) Matching objects of different sizes and colours.

### *2. Matching picture to picture*

- (a) Matching pictures to pictures that are identical.
- (b) Matching pictures that illustrate objects of different sizes.
- (c) Matching pictures of objects that differ in colours.
- (d) Matching pictures that differ in colours and sizes.

First, the child is given simple, clearly defined and identical pictures for matching; afterwards more complicated pictures are introduced.

### *3. Matching picture to object.*

This exercise helps the child's understanding of the relationship between pictured objects and real ones. The child should be given more pictures and objects for matching with a gradual change in size and colour.

#### 4. *Speech reading or lip-reading with picture and object matching.*

The child is given speech-reading practice also during matching exercises of picture to picture, object to object and picture to object. Though in the beginning speech reading is difficult for the child with severe or profound impairment of hearing but gradually after many repetitions he learns to speech-read or lip-read.

#### 5. *Colour and shape*

Colourful paper, toys, clothes, furniture and different types of puzzles and shapes, etc., are used to give the idea of matching colours and objects. Simple shapes should be given first and more difficult and complicated ones later on.

#### 6. *Sense of touch*

Wooden solid geometrical pieces are used for developing the sense of touch. Two or three pieces are placed in a bag, while the child is matching. The child picks up one of the corresponding shapes from the bag by touch, without looking into it. Pieces of different types of cloth like two pieces of woollen fabric, two pieces of cotton etc., are also used for giving training in sense of touch. This type of training also helps children with impairment of hearing in learning the correct articulation by placing hands on the cheeks, throat and chest of the speaker to feel the vibrations.<sup>45</sup>

The hearing people acquire the faculty of speech from birth, effortlessly, almost unconsciously and simply. However, the hard of hearing and deaf have to fashion the same, bit by bit, word by word, sound by sound, sentence by sentence, workable, even though imperfect, language for themselves. Therefore, speech training will be important for such children to develop communication.

The conditions for learning to hear and speak include: the right age, loudness of sounds, reception of sounds, individual attention, time, and intelligence.<sup>46</sup>

### *Curriculum for Deaf Children — Pre-school Years*

Children who are deaf cannot be expected to develop skills earlier than they are developmentally ready to learn those skills. Their

language acquisition may lag behind that of their more fortunate hard-of-hearing and hearing peers, but by the time they are ready for formal education they will have learned to lip-read, use a hearing aid, and will be saying (although only approximately the correct articulation) words and phrases which are meaningful to them.

Deaf children of pre-school age can be educated in a home training programme for the first two years, or in a nursery school for deaf children for somewhat longer than that (depending on the school's policy and programme).

A good nursery school for deaf children includes parent education, all the activities earlier outlined as appropriate for hard-of-hearing children and the systematic development of language through lip-reading, auditory training, and speech development.<sup>47</sup> When the child is ready, the agency can guide his family to the appropriate facility for his formal education.<sup>48</sup>

### *Curriculum for Deaf Children — School years*

The developmental curriculum for deaf children must "..... set up goals which present opportunity for orderly and continuing growth of pupils;.....select those experiences which are best suited to their needs, interests, and capabilities; and .....make provision for their individual differences."<sup>49</sup>

*Language arts:* The deaf child who has had the benefit of pre-school education has already been introduced to language. During the school years his language skill must be practised, extended, and refined. Early in this period children should begin to realise that sentences are used to express thoughts. His vocabulary, although it cannot match the hearing child's range of 2,500-10,000 words, needs to be increased through constant use in meaningful and varied situations. It is not enough for a deaf child to know many words if he is not able to use them correctly for the expression of thought.

The language programme for deaf children during the primary years must use as its ultimate goal that which is standard for hearing children of the same level. Speech, reading, writing, and spelling are also aspects of language. Their development follows a pattern which grows and broadens from year to year.<sup>50</sup>

*Vocabulary:* Vocabulary, words used in a language, alone is not the magic key that solves the problem of "getting along anywhere".

It is comparatively simple to teach a deaf child vocabulary, i.e., (i) associative meaning; (ii) spelling; and (iii) attempt at the 'speech' of the word. But the greatest stumbling block towards language learning is the structure of sentences, the order of words in a sentence, the tenses of verbs, etc. A deaf child of 6-8 years will exclaim, "Accident I saw car bump". He has put the words in order of their importance to him and related an incident to his teacher. However, he has to be taught: (a) to put these words in sequence, a sequence he has never heard, but seen fleetingly on the lips of people he comes in contact with; (b) to use the correct tense of the verb. 10 year-old deaf children, who have had an early start in learning from 2½ to 3 years will learn complicated words (meaning, lip-reading pattern; approximate speech, spelling) in a few minutes. But it would take them years of work to express themselves as do hearing children of the same age using complicated structures in a sentence.<sup>51</sup>

The first task of the educator consists of restoring speech to the deaf child through demutisation (speech training) or auditory training. Oftentimes, the teacher must simultaneously use both avenues to enrich and improve his languages, that is: teach him the vocabulary and grammar. This process requires tremendous efforts on the part of the child. As far as the teaching of usual language is concerned, stumbling blocks do watch the deaf child at every step of his learning. Alone, he is unable to acquire his mother-tongue through the normal channel called usage.

### **Intuitive Method**

In order to efficiently teach vocabulary and syntax, the teacher must arouse ideas side by side with objects, performed actions and felt sentiments. As to objects and concrete facts, once the action is performed the task to do is rather easy. We stick the word to the action which is its sign or representation. When we reach the abstract field and its degrees the task becomes more subtle; starting with intuition, we use various perceptions according to the goal to be attained. In brief, we must call upon the "psychological law according to which every perceived aspect within the various objects tend to become a thought-isolated object".

### **Clear Ideas**

Let us give an example depicting the idea of WHITENESS. We must show some objects which have the real characteristics and,

later, show objects having a different colour so as to instill the idea along with the learning process. For a deaf child, the genuine meaning of the verb OPEN will be understood and grasped only when he will have opened a door, a desk, a cupboard, the hand, the eyes, etc..... To a normal child these two examples may be oversimple but they uncover the amount of precautions the teacher must take to arouse clear ideas in the deaf child's mind.<sup>52</sup>

Along the way, certain ideas whose quality remains doubtful will have to be pinpointed. For a normal child, the world oftentimes recalls a specific idea because it has been acquired through repetition of facts for which he had been the witness. The deaf child sees but does not register anything auditorily. This impossibility is due to the nature of deafness and nobody can do anything to palliate it. Even an experienced teacher can be caught at it and be persuaded that a pupil has understood because he repeats a word well. A simple control will help to discover sometimes that such a word seemingly acquired has been associated with an idea different from the reality.

### **Situational Method**

The idea which has been recalled and associated directly with the sign, that is a word, must be retained. The memory then comes into action on the occasion of well-balanced repetitions in a way as to arouse and maintain interest. Thus it is likely to generate the attention among the pupils. These words must, as soon as possible, be incorporated into propositions. They will be connected and, as much as possible, will refer to the pupil's life. This is what we should easily expect from an oral-graphic, intuitive and direct method and above all situational as we call it today. As the child progresses, other subject-matters are added such as new mathematics with cuisenaire material, geography, history, book-keeping and social studies.<sup>53</sup>

Hearing handicapped children are taught to associate meaning with conventional speech patterns. Every hearing handicapped child has normal inner language. The different linguistic items like vocabulary, pronunciation, rhythm, intonation patterns, etc., present tremendous problems for the hearing-handicapped child. He always uses single words or phrases for expression owing to his lack of proper vocabulary and grammatical knowledge. For correct use of language it is necessary to talk to a hearing-handicapped child in full sentences. Visual aids such as pictures, charts, actions, objects etc., help the child in getting a real concept of objects in true perspective.<sup>54</sup>

## Speech

If we consider that speech concerns the mechanics of talking as well as oral expression, it requires constant vigilance on the part of the teacher during the deaf child's school years. The chief goal is intelligible speech (involving much more than normal articulation).<sup>55</sup> Oral expression, using intelligible speech, must be utilized in every aspect of the school day. Children's speech needs to be corrected. If it is done suitably, pupils will not lose their spontaneity. By the time children have reached school age they want to be understood. Therefore, the chief motivation for intelligible speech is present. The deaf child must learn abstract concepts and translate them into verbal symbols immediately.<sup>56</sup>

Precautions to be observed for speech reading include: light on the face of speaker, appropriate distance between lip-reader and speaker, creation of interest in the patient, same facial level of speaker and lip-reader, use of stories according to the capacity of lip-reader, use of mirror to show the facial movements. Story was also used to stimulate speech reading; the techniques adopted in this case are: chart story, drill story, lip-reading story, sequence story etc.

Auditory training is also considered necessary for recognition of gross and complex sounds, discrimination of words and sentences, frequency consonants and, recognition of simple and complex sentences.

## Reading

Reading is of written language and is an integral part of the language programme during the school years. There was a time when educators attempted to teach deaf children to read before they were physically and emotionally mature enough to cope with another set of symbols. They used understandable haste in providing a way for deaf children to learn about their world through a system which seemed more tangible than the elusive lip-reading. Greater understanding of developmental principles led to the postponement of introducing reading until readiness for the skill has been attained.

The teacher of reading needs to explore the literature on the language and reading abilities of deaf children in order to plan a meaningful reading programme which can avoid, as much as possible,

the pitfalls encountered by deaf children and their teacher in the past. Material available on the subject of teaching reading to both normal and deaf children will be extremely informative and helpful.<sup>57</sup>

Before starting any practical work with the child it would be better to check all his antecedents like physical, mental, social and emotional state or any other clinical investigations which may be useful to correctly diagnose his problems. Then start some advanced type of exercises through which he will be able to understand and comprehend all types of words, phrases, and sentences.

Use direct word teaching method in which the child sees the visual pattern of the whole word. After giving sufficient practice in sense training as specific and casual lip-reading, an attempt should be made to increase the child's vocabulary of common words, nouns, adjectives, verbs and phrases gradually coming to simple sentences through objects, pictures or dramatization. When a good vocabulary is formed, use words in all possible situations to make the concept clear in his mind.

It is necessary to check those words through all possible ways and see whether the child follows the word and its correct usage. If any disability is found in him to comprehend the word, it should be made clear to the child through pictures and explanation.

Lip-reading and silent reading of written forms should be followed simultaneously. When the child will be able to read words with understanding he should be given books on his own interest for reading and enjoyment. This should be done at the earliest possible age (5 or 6 years).

Language work will be the main target of teaching deaf children. In the beginning, material should be made by the teacher himself like cards (words), pictures (actions) and other test materials.

The art of silent reading also includes comprehension. One may read many things printed in a book but may not follow a single word. Experience with deaf children has shown that their reading comprehension is very poor, because of lack of association with written language. Children are fond of reading stories, cartoon stories in pictures, film magazines etc., and so this may be introduced as early as possible after the reading habits are stabilized.<sup>58</sup>

## **Writing**

This skill is developed along with the other language skills in the school years. The mechanics of writing need special attention in the curriculum for deaf children. Its use as an aspect of language will require special help. Unfortunately, in some schools for the deaf copying occupies much of the child's time. He becomes a beautiful writer mechanically, but has little concept of what he is writing.

All language (speech, reading, and writing) should grow out of the child's vocabulary and perception of his experiences.<sup>59</sup> This includes two methods—one is copying and the other is dictation. To give practice for correct writing the teacher should use the same word cards for copying the words on the notebook, and teach him to improve the writing and to learn the spellings. This should generally start at the age not above three. When the child writes the word the teacher should speak the word and associate it with the proper object. Draw a small picture on the top of the notebook and ask the child to write its name below and repeat the same several times.

By visual dictation we mean the words are seen and not heard. Instead of speaking to the child you flash the written card for at least ten seconds and then turn it. The child is to write the same word after seeing the word. This also becomes a game of interest for the child. The teacher can use more words and use them in small phrases and sentences.

The next step would be 'speech reading'. The teacher will speak to the child and he will write. This process is rather difficult but very effective in developing speech reading. The child learns to lip-read some lexical words which are very important to make the sentence correct.

Encourage the child to collect pictures and write their names. He should also be given everyday five to ten words in writing and asked to use them in sentences. A hanging black board will be very useful and effective for writing of words or drawing of pictures till the child begins to lip-read and write.<sup>60</sup>

## **Arithmetic**

Another aspect of the deaf child's language programme is arithmetic. It should be a challenge to his intelligence rather than to

his memory.<sup>61</sup> The intelligent deaf child has little difficulty with the mechanics of numbers and their computation. He patterns the hearing child's development in arithmetic skills except when language becomes part of the subject. Meaning of arithmetical concepts can be developed through the child's experience in natural, real situations. The deaf child should be taught problem solving, money, time, weights and measures, geometric figures, as well as reading and writing, numbers, addition, subtraction, multiplication, division, fractions and mixed numbers, decimals and percentage graphs, and scale drawing. The teacher should point out to him arithmetic's vocabulary and other language in order to understand its social usage.<sup>62</sup>

### **Social and natural sciences**

These subjects of the curriculum also become a part of the language programme for deaf children. They need to be presented to the children in meaningful ways with considerable opportunity for material manipulation, creative dramatics, and supplementary reading.<sup>63</sup>

### **Creative art**

This is one of the areas in the curriculum which can be used to develop real talent and also provide the deaf child with a means of expression which a language handicap sometimes frustrates orally. Children should be given the opportunity for free artistic expression and not be expected to merely copy what their teacher does. There should be time in the child's school experience to create freely with no pressure of stilted requirements. Art can, of course, be used as a means of illustrating academic material, but this should not be one of its primary aims in the curriculum.<sup>64</sup>

### ***Physical education***

This subject provides an opportunity for the deaf child to develop co-ordination skills which he cannot develop without training. Through athletics, physical education is a natural sphere for deaf children to build confidence in association with their hearing peers. It provides experiences with hearing children in which handicapped children's language problem can be minimized. The programme should be more interesting than competitive.

Realistic vocational guidance will have a place in the school for the deaf at the high school level. The programme will include vocational

training and preparation for a job after graduation, and will guide the child to the sort of vocation for which he is best suited. Some deaf children are able to go on to college, either the special college for deaf pupils or a regular college or university. There is only one special college for deaf pupils in the world—Gallaudet College in Washington D.C. It has been found that a small college where there is considerable individual attention is the best for deaf students.<sup>65</sup>

### *Curriculum for Hard of Hearing Children—Pre-school Years*

Language training can be presented informally to the pre-school hard of hearing child. The child with the minimal hearing loss will have little difficulty in learning language and will require little, if any, special attention drawn to it. His parents should catch his attention before they speak to him, and he can learn naturally to use visual clues in communication.

The child with a marginal or moderate hearing impairment, if he requires a hearing aid, should be oriented to it early so that it becomes an integral part of him. Orientation to it involves both acceptance and knowledge of how it works. He can learn to listen to radio and possibly to phonograph records. His parents should talk directly to him using clear, distinct, normally loud speech. They should talk to him even more than they would if he had normal hearing. He should have books read to him so that he is not deprived of the literature all preschool children enjoy. His parents can sing to him so that he can learn to enjoy both the act of listening and expressing himself in song. His parents should not require perfectly articulated sounds except as he is able to produce them himself. Speech correction should be left to those specially trained in that area. He can be held to what he can speak correctly, however clumsily.

The hard-of-hearing child needs real experiences such as going for shopping, helping parents at home, travelling by bus or train and so forth, so that he has concrete experiences about which to talk. Films, television and picture books can be a supplement to real experiences, but they cannot take the place of those experiences. The hard-of-hearing child needs experience in playing with other children. If this is not possible in the neighborhood he may be able to attend a good nursery school for hearing children.

Parents of hard-of-hearing children should have direct guidance for their child's pre-school education from an audiology centre or

special nursery school. Their visits to the centre can be as often as time and other conveniences permit. Children with a marginal or moderate hearing impairment need not, any longer, arrive at formal school age without having had informal education in language developed through lip-reading, speech, and auditory training.

At home or in a nursery programme the hard of hearing child will want time in his day to:

1. Play creatively with such art media as water paint, clay, finger paint, crayons, paper, and paste;
2. Play creatively with environmental toys such as dolls and kitchen equipment;
3. Play using the large body muscles with tricycles, rocking boats, swings, see-saws, and so forth;
4. Build with both large and small blocks of various shapes and colours;
5. Match objects using pictures, puzzles, form board, and colour games;
6. Engage in imitative activities such as "follow the leader" and finger plays;
7. Have introduced to him the wealth of children's literature and dramatize those stories as well as see the pictures in a book;
8. Informally practise the language skills of speech, lip-reading, and auditory training;
9. Socialize with other children who are not handicapped.

Sometimes so much stress is placed on naming objects, having good manners, and wearing a hearing aid that the pre-school child has little opportunity to learn about the world he lives in through happy permissive experiences. There should be considerable time during the day when he is free to do all the things pre-school children enjoy without attention drawn to his hearing handicap. He is not just "a pair of ears" but rather, a growing personality who needs freedom to play where and what he likes, if it is not physically dangerous. Parents can be helped to find limitless ways in which to enrich his pre-school life.

The special teacher's role at this stage is one of guiding parents and demonstrating meaningful ways in which to teach language informally.

Hard-of-hearing children who have been handled in this manner during the pre-school years are apt to be able to fit comfortably into a regular school kindergarten. There will be need of flexibility on the part of the guidance agency and special teacher in deciding when the child is ready for formal education, for, no two children will be ready at exactly the same time.<sup>66</sup>

### *Curriculum for Hard-of-Hearing Children — School Years*

The hard-of-hearing child who attends a regular public school may be part of a system which has a philosophy of rather rigid curriculum, organized in such a way that only certain text books are used and adherence to a rigid course of study is observed.

Or at the other extreme, the child may be confronted with a philosophy which has a curriculum that develops continually as learners and their teachers work together on the problems of everyday living.<sup>67</sup> In such a plan, learners and teachers plan each day at a time while the questions, problems, and persistent life situations dictate what is to be covered.<sup>68</sup> It would appear that these two philosophies are at either end of a continuum and that the realistic approach lies somewhere between the two extremes.

The developing curriculum is being projected more and more on a plane of practical and realistic education. Such a programme seeks to make learning real and functional to boys and girls by utilizing their interests and abilities as starting points in carrying out planned educational experiences designed to meet the present and anticipated future needs of individuals and groups.<sup>69</sup>

The developing curriculum does not suggest elimination of an organized course of study, but neither does it suggest rigid adherence to any one method, one set of text books, or a strict schedule. It appears that the hearing-impaired child, as well as the normal child, can be a better learner in a system where a developing curriculum is used.

At present, most elementary schools for normal children include in their curriculum: language arts (listening, speaking, observing, reading, writing, and spelling), social living (geography, history,

elementary science, and social learnings), arithmetic, health, physical education, recreation, safety education, art, and music education.<sup>70</sup>

The school environment should be rich in materials, objects, projects, situations, experiences, and personalities so that every child is stimulated and challenged to do all things for the thrill of doing, creating, and experiencing.<sup>71</sup> The hearing handicapped child must find the school experience challenging enough to try to keep up with classmates, but not so difficult that he becomes defeated, withdrawn, or a behaviour problem.

In addition to the regular classroom activities, the hard-of-hearing child will require special help in areas involving language and language concepts as well as in speech and hearing rehabilitation. (lip-reading, speech, and auditory training).<sup>72</sup>

## **Teachers of the Hearing impaired**

A special teacher who works with both the deaf and the hard of hearing children must be competent in three areas: (1) parent orientation and education; (2) education of the deaf and hard-of-hearing child; and (3) co-operation with regular classroom teachers and school administration. His special qualifications include:

1. Being a good teacher (knowing teaching techniques and school curriculum);
2. Being a good speech and hearing model for the children with whom he works (good hearing and speech are essential in order to be able to demonstrate speech to children; normal facial features are required so that children can lip-read without distraction);
3. Understanding normal speech and language development, and the ability to diagnose and correct errors made by the children;
4. Thorough knowledge of special techniques required to teach children lip-reading, auditory training, speech, and language (speech perception and expression);
5. Understanding the construction of hearing aids; how to operate and use them effectively;
6. Ability to interpret diagnostic reports (medical, audiologic, and psychological) to parents and regular teachers;

7. Ability to administer audiometric, educational achievement, and social maturity tests;<sup>73</sup>

8. Ability to appreciate parents' strengths and needs; to be able to give them normal support and if need be refer them to a counselling agency; and

9. Awareness of community resources; medical, educational, psychiatric, and vocational.

When a child attends a class for deaf children within the public school he may or may not have classmates in his special room who require work at the same academic level or who require exactly the same special help. These children are given individual tutoring and their contact with children of their own age will be in the regular classroom. Naturally there should be fewer children assigned to the special teacher of the ungraded class than when children are homogeneously grouped. Five or six children in this type of class should be the maximum. Children in this special class should be integrated into the regular classes and activities just as soon as possible – provided, of course, that the child is able to profit from that integration.

The special teacher or therapist, whether he works with the child in the special classroom or outside the classroom (in the school itself or in an audiology centre), must appraise himself of his pupil's and his parents' respective needs. He can get to know each child through his school records, visits to the home or interviews with his parents at school, and with interviews with his classroom teacher. He will probably want to observe him in the regular classroom as well.

Participation in regular classroom work is available in large day-school programmes and even in residential schools when there is good liaison with the regular school in the same community. The school administrators and teachers must have the same philosophy regarding the education of a deaf child. They will need to work together constantly in that educational process. The teacher of the deaf child must appreciate the reluctance of regular teachers to include his pupil in their classes and will need to work slowly toward his goal of integration. Children who can compete adequately and comfortably will be chosen for integration. Both the deaf child and the regular classroom teacher must see progress and feel the effort as worthwhile if such a programme is to be effective.<sup>74</sup>

In an integrated programme for the deaf or hard-of-hearing a regular classroom teacher who often has more than the ideal number of children to teach will need help in understanding how the hearing-impaired child can fit into his room. The special teacher or hearing therapist will orient him to the special needs of the handicapped child and how he can help him with little extra effort and consideration.<sup>75</sup>

1. The handicapped child should have a seat which is placed at best advantage for him to see his teacher during most of the time. Preferably the seat is near the teacher and placed so that his back is to the light so that he does not just see a shadow on the faces of others in the room.

2. The child should be given the opportunity to move about the room freely in order to hear to the best advantage.

3. The teacher learns to get the attention of the handicapped child before he gives him instructions or directions. He needs to talk a little more slowly, clearly, and distinctly to him, but not speak more loudly. The teacher will find that the hard-of-hearing child has great difficulty in understanding him if he talks while facing the blackboard.

4. Teachers usually need to rephrase a new idea in several ways to explain it to normal children. He finds that using different words is more effective than verbatim repetition.

Rephrasing is particularly helpful to the hearing-handicapped child. He may have missed a word or two in the original statement, but when rephrased, may grasp the concept quickly.

5. His classmates need to be oriented to the hearing-impaired child's problem. They will be curious about his hearing aid and why he leaves the room regularly for therapy. If they understand his special needs, they will be willing to use a little extra effort to make certain he hears everything. The hearing-impaired child, however, should not be made to feel obtrusive. Explanation and orientation early in the school year hastens acceptance of the handicapped child and his problems.

6. The hearing-impaired child should be included in extra-curricular activities so that he has the feeling of belonging to the group.

Classroom teacher's evaluations are invaluable in the determination of initiation or termination of therapy, especially after they have been oriented to a child's special needs.

The educator who works with deaf children must develop skills in two technological areas. The first has to do with knowledge that provides sensory expansion. The hearing aid, artificial prosthesis, and glasses are examples of technology used as a means for sensory expansion which overcome the defects of a particular handicapped child. Within this area we have the entire range of stimuli, which might advance the deaf child's ability to perceive his world. In addition to this, closed circuit television, overhead projectors, instamatic film projectors and cameras can provide the deaf child with a means for storage of his visual environment. The teacher of the deaf must also learn how and when to use these devices in order to expand the sensory experience of the deaf child.<sup>76</sup>

The competent and qualified teacher of the deaf will be, first of all, good teacher. "The basic factor is his ability to teach."<sup>77</sup> He will be well-grounded in the following areas:

1. Philosophy of education of the deaf and an awareness of its ever-changing qualities.

2. Normal child development, normal child educational curricula and techniques—so that adaptation to the needs of deaf children in subject-matter areas and reading can be made. Remedial procedures will need to be understood.

3. Knowledge of the communicative process as it relates to deaf children. This includes hearing, speech, language, lip-reading and vision.

- a. *Hearing*: its anatomy and physiology, how it is evaluated, how tests are interpreted, how hearing is aided, how hearing aids (both group and individual) work, "first aid" for hearing aids, and how hearing is trained (auditory training).
- b. *Speech*: its nature and how it is produced, how to diagnose difficulties and analyze errors, and how to teach speech.
- c. *Language*: its normal development, the special language problems of the deaf, and how to teach language.
- d. *Lip-reading*: its process and how to assess and train this skill.

e. *Vision*: understanding that this is the modality through which most of the deaf child's learning will come, what visual perception means, and problems which deaf children may have in visual perception.

4. Psychological tests and measurements as applied to children and how the information obtained from them relates to the child's educational, social, and personal adjustment.

5. Social adjustments—the handicapping effect of a hearing loss and how to facilitate adjustment to that loss academically, vocationally, socially, and emotionally.

6. Public relations—so that the teacher can be a guide to parents, to other professionals dealing with the child, employers, and the community as a whole.

7. The history of the education of the deaf—in order to understand its growth and be able to evaluate present-day programmes.

8. The adult deaf and their problems—in order to be a better guide to the children in his classroom.

9. Allied handicaps which impose added problems to the child's learning ability, adjustment, and capabilities.<sup>78</sup>

Amongst many needs in the profession, the major one at the moment appears to be better teaching, allied to higher expectations. "In the final analysis the effectiveness of all methods will depend on their being able teachers, given good leadership, whose aspirations remain high."<sup>79</sup>

## **Special Aids and Equipments**

There are several aids and equipments such as real objects, pictures, books, black boards etc., specially devised for use with hearing-impaired children. Probably the most expensive item in a classroom for acoustically handicapped children, yet one which is essential if instruction is to take advantage of modern research and technology, is a high quality, precision-built group hearing aid.

### *Hearing Aids*

A hearing aid is any instrument which brings sound, and particularly speech, more loudly to the ear. An ear trumpet will perform

this function, but in practice the term, 'hearing aid' is now used to refer to an appliance using electrical energy. A hearing aid consists of the following components:<sup>80</sup>

- (a) A microphone to change acoustic energy into electricity.
- (b) An amplifier to build up the strength of the signal coming from the microphone; and
- (c) A receiver to change the amplified signal back to acoustic power.

The efficiency of hearing aids is affected by:-

- (1) The acoustic conditions in which they are used, and
- (2) The distance of the speaker from the microphone.

### **Types of Hearing Aids**

Three main type of hearing aids are in general use. The first type is used by children and adults, the second and third more commonly by children. They are:

- (1) Individual wearable aids which are sometimes used in conjunction with inductance loops.
- (2) Portable speech training aids for use by one or two children.
- (3) Group hearing aids.

### **Successful Use of Hearing Aids**

The factors affecting the successful use of the hearing aids can be grouped under three heads related to: (1) the users, (2) the equipment and (3) the conditions in which the equipment is used.

*Factors related to the users include*

- (a) Nature and Degree of Hearing-Impairment, and
- (b) Psychological problems

*Factors related to the equipment are*

- (a) Characteristics of the Aid
- (b) Convenience of Aid, and
- (c) Acoustic Feedback

Aids should first be worn in good acoustic conditions, eg., in a clinic or classroom which has been sound-treated or in the home where furnishings reduce reverberation, and in easy listening situations in which there is a minimum of background noise and a limited number of speakers. When skill in listening has been achieved in such circumstances, practice should be given in listening under more difficult conditions such as a lecture or church service, a meeting in which many people are speaking at a distance from the listener, or a conversation outdoors in the presence of loud traffic noises. The hearing aid user must be helped to adjust the volume of his aid to meet the situation.

These factors suggest the need for very careful and thorough assessment, by means of pure tone and speech tests, of the nature and extent of the hearing impairment, and of the equipment which will give the most beneficial results. They also indicate the need for training in the techniques of using a hearing aid successfully.

Even when each deaf child has his own individual aid, group amplification of high fidelity can help him utilize his residual hearing to a greater extent because of its greater power and less distorted, broader frequency response. For the aid to be maximally effective, the classroom should have adequate sound-treatment. Again, in choosing group aids for a school, the administration should consult an agency for guidance which is cognizant of the deaf child's distinctive hearing needs and is qualified to give advice regarding such a purchase. Usually an audiology centre can make recommendations regarding the acoustic treatment the classroom requires.

A phonograph can be utilized by a number of classrooms in a school for the deaf. Eventhough deaf children cannot be expected to understand the speech of the recordings perfectly, they can appreciate through auditory training the rhythm of music. They can discriminate some melody patterns, some speech rhythms, and even possibly the vowel components of speech. Children can learn to identify certain environmental and animal noises. Recordings need to be associated with pictures or bodily activity if they are to be meaningful. It is wise to have a phonograph connected directly to the group hearing aid for highest fidelity, and also so that extraneous room sounds will not interfere with the children's hearing the record. Commercial records, if they are to be used with deaf children, must be wisely chosen by the teacher and proper introduction leading to their use must be made.

Special equipment for speech training should include a large mirror near the group hearing aid which is at eye-level height when seated. It provides opportunity for the child to see his teacher's articulation, feel and see his own, and thus he is stimulated three ways: through kinesthesia, vision, and hearing.

Movies, strip films, and slides can be utilized effectively by the teacher of the deaf.<sup>81</sup> There must be considerable preparation and follow-up, however. When movies or television are used for either instruction or recreation they should be shown in an acoustically appropriate room where children can use either their individual aids or the group instrument. The audio portion of the equipment should never be turned down or off.<sup>82</sup>

### *Special Equipment for Use with Hard of Hearing Children*

The hearing therapist or special teacher should use all of the visual aids and materials which a good classroom teacher utilizes: real objects, pictures, books, blackboard, and so forth. Although most children will wear their own individual hearing aids, a good group hearing aid is indicated because of its superior fidelity and amplification, and because it permits auditory stimulation of both ears.

The special teacher will need a tape recorder and a phonograph, both of which can be used effectively for auditory training. The tape recorder also can be used for recording samples of his pupil's speech to measure improvement. Visual aids especially designed for hearing handicapped children<sup>83</sup> can be used, but, in general, they are too expensive and too time consuming for the average school programme. Aids designed by the teacher himself can be more effective because they are not so distracting that they become ends in themselves.

In choosing any audio equipment for use with hearing impaired children, it is wise for the purchaser to obtain guidance from audiology specialists.<sup>84</sup> One important reason for training the child to utilize his hearing is to help him want to hear. Therefore the equipment used must be of the highest quality so that it brings him the best hearing possible. In this stage when the child is developing an appreciation of the world of sound, this appreciation should not be limited by the electronic device employed.<sup>85</sup>

## **Allied Services**

### *Audiological*

Education of children with impaired hearing begins with the detection of their problem. Too often children with communication disorders have been sent to a special school without any kind of diagnostic work-up beforehand. This can account for the many children in schools for the hearing-impaired who are inappropriately placed. Recently more and more children have been studied by an audiology centre whose purpose it is to define the youngster's problem, begin his special education by working with the parents and make suitable educational recommendations.

### *Psychological*

The school's psychologist serves a very important function in this aspect of the school's supplementary services. He will have an opportunity to test and observe the youngster more often than would be possible at the agency. The impression of teachers and house parents can be accumulated and evaluated by the psychologist who integrates them with the other information on the child in order to clarify his particular problem.

The psychologist administers appropriate individual examination of various kinds (intelligence, adjustment, personality, and vocational aptitude) to the entire school population. He will work closely with classroom and supervising teachers in administering and interpreting tests of educational achievement. He can also be called upon to give parent counselling when it is indicated.

### *Social*

Some schools have found the contribution of a social worker very useful in evaluating home and school relationships. In the event that the hearing-impaired child attends a regular public school the system's psychologist and social worker will serve similar functions in that setting.

### *Technical*

Children who wear hearing aids must be provided with adequate service of their aids. In the event that there is an audiologist on the

staff of the school, it would be his responsibility to see to it that aids are kept in good repair. When there is no such person on the staff, the administration makes arrangements for that service through a suitable community agency.

*Group auditory equipment* usually requires the services of a part-time trained and experienced *technician*. In some schools there is an audiologist in the staff who along with the psychologist and audiology centre serves the function of evaluating whether or not a child should be admitted to that school. In addition, he supervises the auditory training programme, tests hearing, and makes appropriate hearing aid evaluations.

### *Medical*

Many large schools have a *consulting medical staff* (including an otolaryngologist and paediatrician) who examine pupils annually. Periodic audiologic and hearing aid evaluations are indicated for most children. Recent medical and audiological research can be of benefit to children with impaired hearing; they must have the advantage of being known to the specialists who keep abreast of development, if they are to realize any of those benefits.

Children with hearing anomalies may have accompanying physical problem (heart conditions, eye difficulties, and so forth) which require frequent medical care. In the event that a child needs physical therapy, it can be obtained through a community agency. In a few cases, a child psychiatrist or child guidance clinic will need to be consulted to meet the needs of emotionally disturbed hearing children and his parents.

The child's parents should be responsible for seeing to it that he has the special services he requires. His teachers need to know what his special needs are so that they can co-operate with agencies in helping the child and his family. In some instances the school has to take on the responsibility because of disinterested parents or because the child is away from home for the major part of the year. In such cases social workers, public health agencies, and directors of special education will need to be oriented to the child's special needs so that arrangement can be made to meet those needs. Unfortunately, in some school systems the entire responsibility devolves upon the single administrator who is not interested or competent in all areas of

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## CHAPTER XIV

# EDUCATION OF THE ORALLY HANDICAPPED

Speech or oral communication is the basic tool by which an individual relates to others in the world around him. It is a well known fact that any interference in the efficient use of this tool seriously handicaps the adequacy of establishing interpersonal relationships. At best, one sees the social and personal life of the individual continually disturbed, distorted, and limited if the major tool for establishing and maintaining this relationship is affected. It must also be remembered that this tool serves in other ways. There is reason to believe that the language used in talking to each other effectively moulds and designs what people are. Language is used as a release function for emotions. It is also known that interference with oral communication produces an effective block to learning or serves to distort the nature of learning. With such broad, pervasive effects of speech problems, it is no wonder that children who have speech handicaps are a major concern to teachers and parents. Every teacher can expect to find some children in his class year after year who have need of particular guidance and help along these lines. The exact number is difficult to say because different standards have been used in the various surveys that have been made to discover the incidence of these handicaps. As a general rule the teacher can expect about 5 per cent of the children he contacts to be in need of some special help with regard to speech.<sup>1</sup> The exact number will vary with the standards, a larger number of children having inadequate speech in the lower standards.<sup>2</sup>

## The Speech Correctionist

The speech correctionist is responsible for the improvement of the oral communication of children whose difficulties are noticeable enough to interfere with their academic or social adjustment. In order to do this he must give concentrated attention in the areas of improving certain oral skills and of developing certain attitudes and adjustments. Through the improvement of the skills of articulation, fluency and vocal control, the speech correctionist is able to improve the intelligibility of the speech, improve social or personal adjustment, and to reduce the distractibility aspect of the defect. Sometimes elimination of a speech problem may remove a block to learning. Through the reduction of fears and anxieties about speech, the child's total ability to communicate effectively can be enhanced. Sometimes it is necessary for attitude changes to go much further than those directly related to speech and to reach out into rather broad social adjustment areas. Defects of communication are often affected by factors like attitudes towards self, concept of adequacy and status and relationships to others and do in turn affect the latter. Speech can be a tool to obtain better insight into many emotional and social problems. Since oral communication plays such a predominant and important role in all academic and social adjustments, it is clear that the role of the speech correctionist can be of considerable importance.

The work of the speech correctionist divides itself into two principal categories: correcting speech defects and organizing and administering the speech correction programme.<sup>3</sup>

In the United States, speech correction is done in hospitals, clinics, and private offices. Nevertheless, the bulk of speech therapy is done in the schools. Many universities operate speech clinics as both training and service centres, but the largest number of speech correctionists are employed in public school systems.

The most common administrative educational arrangement is to use itinerant teachers. In this type of organization, each teacher serves several schools and the children remain in their regular schools and classes. The itinerant teacher visits each school regularly and provides group or individual therapy as frequently as the workload permits. This plan is easily administered and can be easily adjusted to meet changing needs.

In some school systems, speech specialists handle the most difficult cases and train the regular teacher to work with the less

seriously defective children. Studies have indicated that parents can participate effectively in speech improvement programmes.<sup>4</sup>

The field is very clearly interdisciplinary in character and a close co-operation among related areas is essential in order to meet the needs of the speech handicapped. Some of the areas to which speech pathology is most closely related are child welfare, dentistry, education, general speech, hearing conservation, psychology, social case work, and such medical specialities as neurology, orthopaedics, otolaryngology, paediatrics, and psychiatry.

### *Correcting Speech Defects*

This involves three steps which in turn are sometimes divided into various aspects. The initial job is finding the children who have the speech problem. At first glance this may appear to be a very simple operation, but in actual practice it is sometimes quite complicated. The finding divides itself into two different stages. First is a screening process by which children who appear to or probably have a speech problem are selected. Naturally there is no question about some of the more serious of these. This discovery is made by the speech correctionist who interviews each child briefly to determine the adequacy of the speech. Another method is to give instructions to the class room teachers and have each teacher evaluate the speech of children in her room in the light of the descriptions of defects outlined by the therapist. By having the teacher reach a judgement of "adequate" or "retest," it is possible to find most of the children who have problems. The second stage is to give a diagnostic examination to each of the children who appear to have difficulties. This involves a very detailed analysis of the sounds that are in error, the characteristics of any nonfluencies which are present, the adequacy of the four variables of voice, and an analysis of the speech mechanism in relation to the errors (including the breathing, phonation, resonance, and articulatory mechanisms). Case history material including medical, developmental, family, and school background may be needed. The total situation is taken into consideration before recommending that the child receive speech therapy. The type and amount of speech therapy required may be determined at this time. Initial goals of therapy are suggested by the results of this diagnostic examination.

The second step in working with children is selecting those who will actually receive the help. In most school systems a speech

correctionist will not be able to work with all the children who actually need help. Also, there are some children who, because of their age, dentition, maturity, attitudes, or school situation, cannot be worked with profitably. Some may need to be referred for medical or dental care before any speech work is attempted. Thus the selection of a child for therapy depends on his own speech situation, plus the practicability of including him in a work load. Once the selection has been made, the therapy begins with each child. The kinds of therapy given must be adapted to the particular type or types of speech problems present.<sup>5</sup>

### *Organizing and Administering the Speech Correction Programme*

The needs in this area are less apparent, but the work is as important as the pupils' contact time used for correcting defects. Many elements go into this process. A systematic recording of the pertinent elements in each case must be worked out. This usually includes some kind of form on which the speech screening, the examination, and the evaluation of the mechanism are entered. Additional case history forms, medical report forms and so forth may need to be used at times. Another aspect involves a systematic process of reporting. This includes verbal and oral reports regarding the children given to the class room teachers and to the parents. Another report would include a statistical picture of what is happening in each school and in the school system as a whole. These reports go to principals, supervisors, and superintendents. At least once a year a report is required by the State Department of Education.

The job of scheduling may involve great many complexities. The speech correctionist must first decide on a pattern of visiting schools. The most frequently used pattern is to schedule each school for a half day, twice each week. This means that from four to six schools may be included in any one week. In recent years, there has been considerable experimentation with several "block" systems of intensive therapy in fewer schools for varying lengths of time. The particular compromise of systems will depend on the geographical distribution of schools, the number of children in each school, the existence of severe speech problems in certain schools, the number of speech cases to be scheduled, the desires of the headmasters and teachers and the personal preferences of the speech correctionist. All systems of organization produce effective therapy and are best

decided by the total local situation. In arranging for the time that he works with the child, the speech correctionist must consider such elements as his age, grade, the recess times, lunch periods, desires of the teacher regarding his release for speech therapy at a particular time, the amount of time needed for his speech problem and so forth. The limitations imposed by the case load also affect the children who can be scheduled for help. It is usually agreed that from 75 to 100 should be the maximum number of children worked with at any one time. The speech correctionist also feels a responsibility for considerable 'in service teacher and community education.'

Another important aspect of the speech correctionist's duties is his relationships with the medical, dental, psychological, and social work professions. The child may need to be referred to any one or all of these professions for examination and treatment for problems which relate to the speech difficulty. The determination of when such a referral is wise is a serious responsibility of the speech correctionist. The correctionist can serve to interpret test results to the teacher or to make clear the child's communication needs to other professions. In the selection of children for special classes the speech correctionist should be a regular member of any screening or advisory group.

It is obvious that the speech correctionist must function in a wide variety of ways if he expects to have a successful and efficient programme. This means that he must have time for doing the organizational and administrative duties.

The multiple and varied aspects of his job demonstrate that the public school speech correctionist is anxious to participate actively in the affairs of the entire school system. He is not a "clinician" who walks into the school system, performs certain duties, and steps out, he is a teacher who is anxious to see that all his work co-ordinates with and gives assistance to the total educational process.<sup>6</sup>

## **Helping the Speech Correctionist**

The fact that many school systems have a speech correctionist does not mean that the teacher can turn all speech responsibilities over to this specialist. The teacher still remains an important link in the improvement of the child's speech. How does the teacher do this? (1) The emotional climate in the class room is often a key element in the child's improvement. This should be recognized as a major

contribution when it is well done. (2) The teacher can furnish background information about the child which may be pertinent either with regard to family situation, success in school, playground behaviour, or changes in speech in the class room. (3) The teacher may also be important in helping the child to carry out the assignments which he gets from the speech correctionist. (4) The implementation of the referrals to physicians and psychologists must often be carried out by the class room teacher. All these contributions are vital.

If the class room teacher is to help children most effectively, it is important that he understands what the speech correctionist is trying to do and how the correctionist goes about doing this job. It is also necessary that the teacher has some basic understanding of the nature of speech problems. In this way he can work intelligently with the speech correctionist toward a common objective of more effective oral communication.<sup>7</sup>

## **The Teacher's Function**

In this section we outline some basic principles which can be applied by a sensitive and conscientious teacher with some degree of success.

In-service training programmes can aid the regular class room teachers in handling the children with less serious speech defects, although they probably will not attempt formal therapy. Every teacher is, to a degree, a teacher of speech. Each teacher can be a good speech model. The classroom teacher can make referrals to private, or government clinics when they are available. The teacher can handle children with all types of speech defects in the ways suggested for the general treatment of the primary stutterer. Some additional suggestions for the class room handling of the child with a major speech defect are:

1. Complete acceptance of the child as a fully worthy individual is most important.
2. Accept the child's non-fluencies in a relaxed and unembarrassed fashion. Try to get the children do likewise.
3. Do not look away from the child, or take over and speak for him.
4. Encourage, but do not force the child with serious speech defects to speak before the class.

5. Provide the child with non-verbal assignments and responsibilities to keep him from capitalizing on his disability.
6. Capitalise on the child's assets and provide recognition for his accomplishments to increase his self-confidence.
7. Provide as much group participation as possible for the child. If he will not participate verbally, let him participate in a non-verbal way.
8. Provide some daily oral experience for the child, such as group singing, reading in unison, or ordinary conversation.<sup>8</sup>

In order to help a child who has a speech problem, it may be necessary to make further adaptations to his individual differences. To do this adequately it is necessary to learn as much as possible about the psychological and physical development of children. All children, regardless of level, must be dealt with in some manner or other.

The child must be accepted with his speech disorder before the teacher can expect to help him get rid of it. He can be aided best by avoiding pressures which might make him too sensitive about the undesirability of the manner in which he speaks.

The teacher will need to take simple but systematic steps to see that the precise nature of the problem is isolated sufficiently for rational treatment. This may involve two separate steps.

First, it is necessary to make a speech analysis. A gross analysis of the problem should be within the range of every class room teacher. He should be able, for instance, to decide whether the problem involves articulation, voice, stuttering, or is an indication of delay in development. He also should note whether there are any factors which seem related to speech problem. It is important that these related factors are not considered as causes, although in some cases they may be.

Physical elements which seem to be directly related to the speech are cleft palate, cerebral palsy, and oral malformation. General physical status is important. It may account for the weak voice of the child.

It is important to find exactly what sounds are in error if the child has a problem in articulation. For those teachers who have not had training in phonetics, the following steps, if followed systematically

and conscientiously, should provide accurate answers in most cases. (1) Select a word that "sounds wrong." (2) Write this word and under it write the way he pronounces this word. (3) Note what sounds there are in the word without reference to the letters of which it is composed. (4) Identify the place\* where the error occurred, and note it in the word that has been written. (5) After locating the place, determine exactly which sound is affected and write it down the way it is pronounced. If it is not there at all, it is omitted. Another method which is helpful for determining the exact error is to imitate the word the way the child pronounces it. (6) Determine what substitution is being made. If these steps are taken it will be possible to find out where the sound is wrong in the word and what is wrong with that sound. Then by listening to the child's connected speech the consistency of usage of the error can be determined.

In order to evaluate voice problems a great deal more training and practice may be necessary. It is vital to listen to each one of the four variables - loudness, pitch, rate, quality - separately, as the child talks or reads. Most people can learn to identify and agree upon the errors or combination of errors that are being made.

If the child is stuttering, the frequency, the severity of the stuttering, and the situations causing the most trouble can be determined. The secondary reactions such as tensions, breathing irregularities, head movements, noises, and so forth should be described. The detail with which this is done however is not critical because much of the treatment of stuttering in the class room does not depend on doing anything directly with the speech. This is done to help the teacher notice the elements to make sure of his identification of the problem and to provide some specific items in which to note improvement.

The second step in handling the specific speech problems is to arrange for possible treatment or examination by others. It is the teacher's responsibility to see that referrals are made thoughtfully and to place where the child can be helped. The following criteria for making referrals of any kind may be helpful. The child should be referred when: (1) the problem is difficult to analyze; (2) methods indicated here and in other books do not seem to help and the child does not improve; (3) the problem is a severe one either with regard to related factors or to the speech errors themselves; and (4) there is uncertainty about such factors as the relationship between emotional

or behavioural problems which are present, the degree of intelligence and its possible effect on the speech, and so forth.

If the child is to be referred for a speech and hearing examination the most convenient person may be a local speech correctionist. Often people confuse the term "speech teacher" with "speech therapist."

Some teachers may be interested in referring children for physical or medical care in relation to, or what they feel is related to, the speech problem. Whenever this is done, the child should be referred through the parents to the family physician rather than to any sort of specialists. The only exception to this procedure for referral should be in cases where there is a school nurse or a school physician. It is appropriate to ask this person to see the child.

The most frequent outside referral, in addition to speech and hearing problems, will be for testing by a psychologist. Every effort should be made to describe the behaviour which prompts the referral.

Broadly speaking, the tests desired will be concerned with intellectual capacity or emotional adjustment. The description of behaviour is the best way of helping the psychologist to make the appropriate selection of tests and to report in such a fashion that it will be most helpful.

### *Role of class room teacher in helping children with speech problems*

The possibility of delayed speech even in the absence of emotional problems causing minimal brain damage cannot be ruled out. For children with delayed speech and language, corrective differential diagnosis is necessary. A scientific and systematic therapy programme would be of great help. While these children under study are still receiving treatment we could list some causal factors which would be useful to determine the possible causes of the problem.

Some specific objectives of therapeutic procedures may be: (i) to develop ability to perceive, recall, and reproduce sequence of sounds in speech; (ii) to develop speech words and their association with objects, actions and experiences; (iii) to develop listening ability; (iv) to develop writing ability of words and sentences; (v) to modify the behaviour of the child.

Since the things which will be taken are quite different for the various types of problems, it is imperative to talk about each problem separately. Most of the commonly met problems will involve difficulties of articulation.

### **(a) Articulatory problems**

The first step is to teach the child to hear differences. It is necessary for him to learn to hear, and sometimes see, exactly how the incorrect production is different from the correct production in words. For instance, if he is saying "top" instead of "stop" he is omitting the s, but it is not enough to tell him this. It is important for him to appreciate that there is a difference between these two words, and that one is incorrect and the other is correct. Next he must appreciate where the difference is located in the word. In the above illustration, it is at the beginning of the word. Then he must learn that the specific difference is that one sound is omitted. A similar sequence of learning must take place for sounds for which he makes substitutions. Fundamentally, this teaching is done by presenting him with several comparisons which have been labelled for him. Attention may be called to the place in the word where the sound is in error and the nature of the difference. In this way a general difference is noted and this is gradually increased in specificity to the point where he has a precise notion of what is wrong, where it is wrong, and in what manner the error is made.

The second step is to teach him to make the sound. This step can be very simple, as a rule, if the above steps have been carried out systematically and thoroughly. The simplest way to teach a child to make the sound is to have him imitate the teacher, after he is able to identify differences. Then both the correct and incorrect sounds can be introduced as they appear in words, or, sounds may be added or omitted at will. He has already learned how to make the sound and no further work need be done at this stage. Occasionally additional efforts must be made to teach him how to make this sound. General instructions may be given, such as asking him to open or close his mouth, raise his tongue, or pull his tongue inside his teeth. No further details by way of instructions need be given. Speech correctionists sometimes use rather elaborate techniques to help the child produce the sound but these are an outgrowth of a thorough study of phonetics and a keen knowledge of the limitations of these methods. It is not wise for class room teachers to go beyond what can be done through

ear training with the very general instructions just mentioned. If the proper ear training has been carried on in step one, this sound will be a meaningful unit to him as part of this word, even though he may be having trouble in producing it. If the above techniques are unsuccessful, it is better for the teacher to remain working at the first stage of having him hear differences and do nothing further. Persistent efforts to get him to produce something that is difficult for him can be harmful if pursued unwisely.

The third stage is to teach him how to use this sound. When he is able to produce the sound with careful stimulation and by imitation, he will need a period of practice using words in isolation and in phrases. These words should be chosen from his vocabulary and be placed into meaningful context as frequently as possible. It is true that some children have learned to improve speech by reading word lists that have been prepared by the teacher. They probably would have learned faster, however, if they had practised words which they had selected and which were placed in sentences which they might actually use. In fact, in groups of children it is quite possible to arrange for frequent repetitions of certain words in a truly meaningful context. It also may be necessary for the child to say these words slowly and carefully, at first giving somewhat exaggerated attention to all the sounds. This should not be continued too long, and he should be using the sound at his normal speed as soon as possible. He should be kept in his practice stage until he is able to use the correct sounds with a high degree of consistency and be able to check his own errors. That is, he should be able to stop at the production of an error and make a correction of it. If he cannot do so, he is not yet ready to go to the next stage. The use of negative practice, or practising the wrong sound purposely, can be helpful in making him more aware of the introduction of an error into general conversation. Another fact sometimes gives children trouble at this stage. If the sound has been learned in isolation, the child has sometimes difficulty putting it into the word. He is apt to insert his old error between the correct sound and the rest of the word. Whenever this occurs, it means that further ear training similar to that of stage one is necessary. The total configuration or pattern change must be taught. For instance, the word that he has been saying would be spelled "the top" instead of "stop". If he is asked to add an s, he puts this s at the beginning and still inserts his incorrect sound. This means that he has not learned the total pattern change for that word.

The last stage is a carry-over of the correct sound into conversational speech. This assumes that he is able to detect his own errors and make corrections. The first attempt should be with controlled conversation. This means that the conversation is limited by the means of stimulating it. For instance, if the child is asked to talk about a picture, this limits somewhat the words which will be used. If necessary, the key words can be practised ahead of time to be sure he is paying particular attention to certain sounds. This kind of practice can gradually move into more general conversational usage. Steps should be taken to see that this correct usage is carried into speech outside of the time he is being helped by the teacher. Whenever these "assignments" are made, they must have three characteristics: they should be limited, definite, and verifiable. The first of these terms means that no assignment should be made for an indefinitely long period. It should be a very short time—not more than one or two minutes. Two, three, or four minutes is a long time to practise anything and to keep attention on using "new" sounds in a particular fashion. The assignment must be definite by associating it with some other activity with which he is familiar. A common way is to ask the child to use a sound correctly while he is reading aloud, in case his reading is not giving him special problems. Or he may be asked to use it correctly at certain times. Another form of doing this is to give him certain words which he will use fairly frequently and concentrate on getting these right each time. For instance, if the teacher's name is Miss Brinda and he is practising on the s, he could be assigned to make the s correctly in the word "Miss" each time he uses it. The word "yes" is another good word to begin practising, because it can be used several times a day. If the child is to do something while he is away from the teacher, it is very important that there is some way of checking to see that the practice has been profitable. It is actually harmful to have him practise something and do it the wrong way. The results of this can be checked by going with him into test situations, by having others describe his success, or by having him write down items which indicate the degree of success. There should be a gradual increase in the number of assignments and the frequency with which he does them. In this way there is a gradual and systematic transfer into everyday conversation.

If the above steps are followed faithfully, the teacher will be able to help many children. There will always be some, however, who cannot be helped by these simple measures and will need extensive and expert therapy. Therefore, the teacher should not feel discouraged or feel compelled to try harder to help these children who

do not respond to the above measures. The best therapist in the world still has limitations and cannot help everyone. The child should be given time to acquire these new habits. The teacher should never make the mistake of assuming that just because the child can use a sound correctly in a certain controlled and limited situation his only problem is "using" it. The implication of this is that the child is deliberately refusing to use the sound correctly. This is not all accurate and is extremely unfair. The job of correction is not finished when the child is able to use the sound — it is only finished when he is actually doing so.<sup>9</sup>

### **(b) Stuttering**

The treatment of the child who stutters should be directly geared to the nature of the problem.

First of all, the child knows how to talk. This is demonstrated by his periods of normal fluency. Techniques which concentrate on practising talking are not useful. Instructions which tell him how to talk better will not help. It must be remembered that the secondary reactions, such as extreme tensions in the face, jerking of the head, eye movement, head bobbing, and rather bizarre looking actions are normal, learned behaviours which the child has adopted. He acquired this behaviour as a means of preventing, avoiding, or concealing his "trouble". Another fact which must be accepted is the variability of stuttering. This has particular importance for judging whether or not the child is improving. Improvement or progress can never be judged on a short-term basis. It may be that the child has reached a period of fluency, which has little or no relationship to the ways being tried to help him. Likewise, when he seems to "get worse" this may not be directly related to what is being done. General improvement can be judged only over a period of several days or even weeks. Another important point to remember about improvement has to do with the goals that are set up. Improvement should be thought of in the direction of easy, normal communication. This can reflect itself in reducing the strength and degree of the blocking or in the secondary reactions or in a desire to do more talking. These changes should be thought of as the goals rather than the elimination or "cure" of stuttering. Stuttering is related somehow to the child's attitudes, emotions, and feelings about speech and speaking. It is also tied in with his feelings about himself and his relationships to others.

These items above indicate some points that need to be avoided in trying to help the child. Any instruction designed to stop stuttering is generally to be avoided. It is true that some children appear to improve after instructions, such as "stop and take a breath," "Now, talk slower," "Think of what you're going to say", and so forth. This whole area needs further study. But in general it can be said that these instructions are not designed to be helpful to most children who stutter. Related to this is the avoidance of praise for fluency. A child can be praised for his willingness to talk or an improvement in the process of his stuttering; but praise for fluency is an implied criticism of his stuttering. This reinforces the child's impression that stuttering is something he must not do because it is wrong or bad.

The positive helps to give, on the other hand, are many. Some of these may be grouped under the general topic of speech adjustment techniques. The basic element here is to give the child the opportunity to enjoy oral communication. The more he can get pleasure, satisfaction, and feelings of accomplishment from this, the more apt he is to improve his total communication pattern. The most direct way to help the child enjoy talking is to accept and enjoy his communication. Many times parents and teachers have been told to ignore his stuttering. This seems to be a mistake. It is important that the teacher accepts his way of talking. This is quite different from ignoring it. This assumes that the teacher and the child both recognise that there are differences in his speech, but there is an unemotional acceptance of the fact that these differences exist. The attitude one assumes in ignoring a deviation is to pretend that it does not exist. This implies being "poker faced" and "patient" while the person struggles through his speech. Acceptance, on the other hand, derives from an attitude which says, "Of course you have considerable struggle with some of your words, so what?" How can this be put across to the child? One way is to spend some time in demonstrating that all people have nonfluencies. It is true that he probably has more than some other children, but that is no different, in kind, from the trouble all people have.

Another way to make him aware of acceptance of himself and his speech is to spend some time talking about individual differences. Attention can be called to differences in speech which various people have. These differences are in the articulation, fluency, loudness, or possibly in the foreign dialect. If individual differences are talked about and conversation moved along to other topics it would affirm, that

they exist, but that they are not a cause for rejection. This implies, of course, that the teacher is able to do it unemotionally. If he feels overwhelming sympathy for the poor child who struggles, it is difficult to handle this properly.

In addition to the teacher's communication with the child, it is important that he be given more experiences in his relatively fluent situations. This will take some watching to find out when or where he happens to be able to talk most easily. Teachers should be alert to the fact that the child may suddenly begin to stutter violently in situations which usually give him little difficulty. Here is one place where choral reading can be of some use. This does give him an opportunity to verbalize with security and fluency. It has only limited value, however, since there is little direct personal communication involved in the process.

Oral recitations may be adapted to his particular needs. This does not mean that the child should be excused from all, but he may have these recitations reduced, at least temporarily. The text by Johnson<sup>10</sup> et al has several pages devoted to how these can be altered.

Anything the teacher can do to improve general emotional adjustment of the stutterer in the class room is of direct help to him. The creation of an atmosphere where a child can learn without being blocked by extreme emotional disturbance is certainly an ideal worth working for. This ideal is not a state of no emotion or no tensions. In fact, the class room should be a place where a child is free to experience emotions as well as intellectual successes and to learn how to control them in appropriate manners. It is important for teachers to develop ways of reducing extremes of emotions and the destructive expressions of them. This has particular importance for helping the stutterer because the very nature of his problem creates extremes of emotional tensions many times a day as he attempts or desires to communicate. The release of these tensions is frequently destructive.

These destructive expressions of emotions may be directed towards the child himself or towards others. Both extremes are frequently found in stutterers. Some are extremely withdrawn and try to hide themselves from everyone. Other stutterers are very aggressive and are continually starting fights to stop people from openly recognizing the fact that they are stutterers.<sup>11</sup>

## *1. The Treatment of Primary Stuttering*

Even though the distinction between primary and secondary stuttering is difficult to make, the initial hesitations, blockings, and repetitions of the two-to-four-year old require different treatment than the secondary symptoms of the confirmed stutrer. Here are some general suggestions for parents and other adults concerned about the non-fluencies of the child who is in the early stages of language acquisition.

- i. Measures taken should be indirect and not concerned with the speech deviations as such.
- ii. Keep the child in good physical condition.
- iii. Provide a pleasant, relaxed home atmosphere.
- iv. Provide as many good speech models as possible.
- v. Try to develop feeling of adequacy and self-confidence (a satisfactory self-concept) in the child by utilizing his assets and minimizing his liabilities.
- vi. If referred to child's non-fluencies it should be acknowledged but accepted as normal. The impression that they are bad or that other people are anxious about them should be avoided.

## *2. Symptomatic Treatment of Secondary Stutterer*

Symptomatic treatment may attempt to either teach the person to stutter in a way that is tolerable to himself and to others (controlled stuttering) or to talk without stuttering (inhibition of stuttering).

Controlled stuttering is attained by teaching the stutrer rate-controlled speech techniques of breathing and controlled phrasing, through the repetition of what is said, reading in unison, negative practice (practice in stuttering) and various distracting devices. Remedial procedures are intended to develop tolerance of stuttering, emotional desensitization, anxiety reduction, and controlled speech. Treatment designed to make it possible for the person to talk without stuttering consists in teaching him analytically, step by step, to articulate properly and gradually to build up fluency. Many of the same techniques used in teaching controlled stuttering may also be used to develop speech which is relatively fluent. The treatment of stuttering, as well as of many other types of speech defects, seems to be shifting away from mechanical drills and devices (speech correction) toward therapeutic

relationships (speech therapy). One manifestation of this shift in emphasis is a preference for the term speech therapist rather than speech correctionist.

### 3. *Psychotherapy for the Stutterer*

Psychotherapy is used with stutterers on the assumption that the non-fluency is either a symptom of, or is accompanied by, personality maladjustment and that the way to handle stuttering is to deal with the underlying personality defects. Speech pathologists have recommended and used psychotherapy ranging all the way from directive counselling and group discussion to the nondirective, psychoanalytic, and hypnotic therapies. The goals of psychotherapy for stutterers are essentially the same as those for individuals with normal speech. These include the development of insight (self-understanding), changes in the self-concept (ego-building), self-acceptance, emotional desensitization (the reduction of fears and anxieties), and the improvement of personal relations.

Psychotherapy attempts to go beyond the removal of the symptom and deals with the more basic problems and conflicts on the assumptions that speech will improve with personality re-orientation and improved adjustment.<sup>12</sup>

The child's emotional state has a lot to do with stuttering. These children tend to stutter when they are excited or when they are talking to one particular person.

One little boy began to stutter when his baby sister was brought home from the hospital. His jealousy made him uneasy and without revealing it outwardly, in pinching or hitting her, he began to stutter.

When a left-handed child was forced to use his right hand, he started stuttering, a psychologist observed, because that part of the brain that controls speech is closely connected to the part that controls the hand that a person naturally prefers. When this is upset, it confuses the nervous machinery for talking, and stuttering begins.

Although most parents are distressed at the first signs of stuttering in their children, there is no cause for alarm. Most children outgrow the stutter and only the exception becomes the chronic. It is most important that the parents do not make an issue of the child's disorder, but accept it as part of his normal speech development.

If the child is upset by any one situation in particular, that condition must be eliminated. If the child is frightened at being separated from his mother, on no account should the parent leave his side. Children should not be urged to talk too much - they should be urged to do things instead. They must have companions of their age in whose company they are relaxed and play easily. When children talk to their parents or elders, they must be given full attention, because if the child is not able to hold his audience, jealousy makes him frantic and nervous.

Stuttering in most cases lasts a number of months, and parents must be content with gradual progress. Patience and conscientious efforts on the part of parents alone will help the stuttering child overcome his handicap. With proper education of young parents and the public, the problem called stuttering could be considerably overcome.<sup>13</sup>

Stuttering becomes a social handicap in communication and it usually occurs when one is overwhelmed by fear and anxiety. Yet imitation of stuttering has been used on the stage as a source of amusement to others. There has been a widespread interest in this speech handicap amongst the Psychologists, Speech Pathologists and Therapists, Speech scientists, Linguists, Otolaryngologists, Neurologists, School Teachers, Parents and the Public.

Hence, it is imperative that for the successful rehabilitation of a stuturer, a combined effort on the part of all concerned is necessary in view of the multifaceted problems regarding its aetiology, manifestations and management. This could only be achieved by a team approach by the Otolaryngologist to rule out any structural or organic defects; the medical social worker or public health nurse to elicit a detailed case history with reference to socio-economic and emotional problems involved as well as the follow-up of the case; the speech therapist to establish a good rapport with the client and the attendants. The linguist is very much involved in the scientific rehabilitation of a stuturer as he offers a linguistic approach to the problem of stuttering as a whole.

Moreover, it is advantageous to organize parents' meetings for the stuttering groups so that the parents and guardians of many cases with similar problems find a platform to discuss their individual problems amongst themselves as well as with the team. An endeavour is made to allay most of their apprehensions and worries and solve

their problems. Moreover, such meetings make many parents feel at ease as the progress of the case is not quick as in the case of voice and articulation problems. They also feel that there are many others like them who have similar problems. Most of the parents expect readymade cures or remedies by way of medicines, operations etc. They have to be made aware of the implications of the problem and told that time-consuming therapy is the only answer.

The first visit of the handicapped to the Rehabilitation Unit is both crucial and difficult to handle. The team must explain to the patient in clear and precise terms the details about this condition, the entire therapy regime, and prognosis. Moreover, one must clearly explain that much depends on the active co-operation of the client and the family. There is no magic touch or injection available for the treatment of this condition; only training will help. The patient has to be fully prepared for the difficult task and tireless efforts ahead of him. The team must ensure that the person is never discouraged in the slow advance to ultimate success.<sup>14</sup>

Since there are so many etiological factors leading to stuttering, it is necessary to take the case history. It will be of great help to the therapist to arrive at a comprehensive diagnosis and consequently to plan and impart a more effective therapy for final rehabilitation in society.

It is desirable to take the case history under the following headings: (1) Identification data, (2) Education, occupation and socio-economic status, (3) Brief history of the problem, (4) Any history of stuttering in the family, (5) Birth history, (6) Developmental data, (7) Health background, (8) Social history, (9) School history, (10) Family history, (11) Interpersonal relationship between parents and other family members. (12) Home discipline, (13) Parental habits, (14) Attitude of the parents toward the successes and failures of the child, (15) Attitude of the parents towards the speech of the child.<sup>15</sup>

In treating a stutterer a complete evaluation of his/her personal attitude towards stuttering is valuable and important. Before any treatment plan is made out, the stutterer's complete attitude towards his/her problems must be traced by taking a detailed social personal history.

Every stutterer must be explained the goal of treatment before entering the clinic. The following are the aims of therapy:-

- i. The therapy aims at changing the attitude and behaviour towards medical treatment of stuttering;
- ii. Parents' counselling;
- iii. Building up confidence;
- iv. Relaxation; and
- v. Group therapy

*(i) Clinical methods*

The techniques used in the clinic to help the stutterers in changing their attitude and behaviour and reducing the stuttering symptoms are: (i) Collecting information regarding speech and its function in order to arrive at a proper understanding of the problem. (ii) Explanations of speech mechanism and the importance of different situations, and listener's reaction that changes the attitude of the stutterer.

*(ii) Parents' Counselling*

It is the most important part of therapy especially in the younger group. Parents must be carefully handled and explained the technique of 'how to behave with their children during speaking and other activities'. It has been observed that sometimes the parents' frequent checking and rude behaviour, anxiety or bad intra-familial relationship put their children in difficult and confusing states. Separate interviews and detailed history of the parents and family history are very essential in understanding the problem.

*(iii) Relaxation, building up confidence*

Stuttering due to lack of confidence can be reduced by slow and rhythmic reading, speaking individually and then in a group. Stress must be laid on relaxation and voluntary stuttering. Use of a taperecorder helps in analysing the speaker's own image of speech. If one speaks with relaxation at one's optimum rate there is always less difficulty in a speaking situation. Speaking before a mirror also helps the speaker in analysing his own body image and postures. It has been found useful in many cases where slow and prolonged speaking is used. The results show a great deal of easy speech without the least hesitation.

In children other activities like drawing, painting, games etc., develop confidence when they are hypertens or restless in a speaking situation. It has been seen during these activities that children are more relaxed and co-operative with the therapists and talk in quite a normal way. Practice of relaxation gives rapid recovery from fatigue, both physical and mental, and so it should be carefully explained to the stutterer with all its value in achieving mental calmness, confidence and ability to face life without any stress and strain.

*(iv) Group therapy*

In order to achieve the main goal of speaking in a group, group therapy is useful. Six stutterers can be put to form a group for short discussions about the problem in order to get an understanding of stuttering. Sharing their thoughts and difficulties make them aware of the real speaking situation. The therapist's job is to encourage them to speak in a relaxed and clam way. The stutterers are asked to analyse each other's speech and to discuss it freely. Story-telling, lectures, debates, poetry, and songs attract the listener and motivate him to speak more. Beside these specific techniques some other techniques have proved useful outside the clinic.

- (1) Situational practice like practice talking on the telephone to a superior, to a shopkeeper, to a hotel manager, etc., where the therapist or the parents accompany the stutterer and help in the talking situation through by suggestion, support and encouragement.
- (2) Counselling with school teacher, friends and classmates.
- (3) Parent counselling at home with the help of trained social workers.

In spite of all efforts made by the team approach, in many cases the results have not been proportionate. The following reasons were observed at the Rehabilitation Unit in Audiology and Speech Pathology, All India Institute of Medical Sciences, New Delhi.

- (1) Lack of co-operation from the family members due to lack of understanding of stuttering.
- (2) Cases who have attended very few sessions because of the long distance and poverty and so discontinued the therapy.

- (3) Over-demanding on the part of parents which prevented good results in spite of intensive counselling and therapy.<sup>16</sup>

Since there is no known organic cause of stuttering there cannot be a cure for stuttering, but there is always a scope of controlling it, and the treatment of stuttering lies in the art of teaching how to control it in spite of the fact that sometimes it may re-appear.<sup>17</sup>

### **(c) Voice Problems**

The things that the teacher can do for voice quality, pitch, or loudness problems in the child are much more limited. In the first place most children are not going to have functional problems of voice. Most of their disorders will be caused by some organic condition. If hoarse, husky, harsh or denasal quality is present, it is important that the child be referred to a physician for examination. Occasionally, there will be children who have poor voices because of imitation of someone at home. In general, it is best to refer such children to a speech correctionist for examination and advice.

There is one voice problem which troubles many teachers. That is the voice of the child who talks too softly. Ordinarily this is not a speech problem in the sense that the child needs practice in talking or instructions as to how to talk differently. First, his vocal expression should be observed on the playground and outside of the class room. If he gives evidence of being able to talk loudly, it may usually be assumed that his problem is one of emotional adjustment in the class room. The techniques which have already been suggested under the treatment of stuttering apply equally here. In addition to these techniques, it is wise to have the child experience what it is like to talk louder in an "easy" way so that he can make the transition from soft speech to something that can be heard. It must be remembered, however, that as long as the voice is reflecting how he feels in the class room there may be difficulty in persuading him to talk louder.

Any attempt to do something for the child must be based on an accurate and detailed analysis of the acoustic factors which are defective. The complexity of this apparently simple task may be illustrated in an analysis of the pitch. It is important to determine the habitual pitch in relation to the optimum pitch and the pitch range before judgment can be reached about it. Sometimes the problem is a matter of total flexibility which includes pitch, loudness, and timing aspects. In regard to quality, most children do not have defects without

an organic cause, because they have not had time to misuse their voice long enough to develop functional qualities which need attention. It is for these reasons that it is felt that a speech correctionist should make the examination and provide detailed recommendations for the individual child.

#### **(d) Special Problems**

A similar conclusion can be reached with regard to cleft palate and cerebral palsy. These are special conditions which present so many complex problems that any detailed instructions for class room teachers seem out of place. In fact, the adequate handling of these problems usually involves a team of many specialists. If the class room teacher wants to help the child, consideration of emotional factors and work on articulatory aspects can be introduced. This can be done by following the adaptations of the instructions outlined under problems of articulation.

These statements also apply to helping children who have a hearing loss. Although it is possible to help them with their articulatory difficulties, certain cautions are necessary. Exaggeration of the sounds or of lip and tongue movement will often be picked up by the child with a hearing loss and cause distortions in his speech which are as bad as his original problem. Emphasis on final plosive sounds, for instance, may result in a release; so instead of saying, "bed", the child says, "beduh." It is necessary to add more visual cues to the teaching instead of depending entirely on the auditory discrimination as outlined under the treatment of articulatory problems.

It is also possible to help the child in articulating sounds, pronouncing words, increasing his vocabulary, and improving his understanding of rapid speech. This latter can be done by slowing down phrases and then speeding them so that he can recognize the pattern. Care must be taken not to teach him solely by talking slower and more carefully. He needs to pick up the total pattern of normal rate of speech.<sup>18</sup>

An important fact here is that, the teacher should not expect too much of those who do improve. This attitude prepares the way for many items involving specific cautions. Changes in speech, at first, will not be consistent, nor will they be immediate following some attention to the speech. No child will change his form of speech even when he "can" until he feels he needs to do so. Teachers must be

careful not to create too much pressure in making him want to change. It is much better to present stimuli easily and intermittently. It is important to avoid talking for the child who has difficulty, particularly if he stutters. Also, stutterers should not be instructed to do things in order to prevent stuttering. They should not be told to go slowly, to take a deep breath, to think of what they are saying and so forth as a means of avoiding the stuttering. In working with children who substitute or omit sounds, the teachers should not go beyond ear training and general instructions. Specific tongue placement and particular mouth postures should be avoided.

If the teacher decides that the stuttering or that the lack of speech development is due to emotional problems having their roots in home and family conditions, he should not feel under obligation to become a combination of social worker, clinical psychologist and speech pathologist in order to clear up the speech problem. He is not shirking his responsibility by confining his efforts to creating a good total school situation for the child. On the contrary, he should feel obligated to see that this kind of work is done only by appropriately trained individuals. Home visits and any manipulation of the child's environment by the teacher should be done only to the extent needed to support the teacher's primary functions as the principal director of the child's educational experiences and growth.<sup>19</sup>

## Footnotes

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## CHAPTER XV

### **EDUCATION OF THE MULTIPLY HANDICAPPED**

In the foregoing chapters we dealt with the education of four major categories of the physically disabled, viz., the orthopaedically, the visually, the acoustically and the orally handicapped. All these forms of disabilities can and do occur in the same individual in varying degrees. Those persons with more than one disability are designated as multiply handicapped. There could be eleven possible combinations of these disabilities.

- 1) Orthopaedically and Visually handicapped.
- 2) Orthopaedically and Acoustically handicapped.
- 3) Orthopaedically and Speech handicapped.
- 4) Visually and Acoustically handicapped.
- 5) Visually and Speech handicapped.
- 6) Acoustically and Speech handicapped.
- 7) Orthopaedically, Visually and Acoustically handicapped.
- 8) Orthopaedically, Acoustically and Speech handicapped.
- 9) Visually, Acoustically and Speech handicapped.
- 10) Visually, Orthopaedically and Speech handicapped.
- 11) Orthopaedically, Visually, Acoustically and Speech handicapped.

Orthopaedic disabilities do not call for any specialized method of education. Therefore the blind, deaf and speech handicapped with

orthopaedic disabilities can be educated in the special institutions for the blind and deaf and dumb. In majority of cases severe speech defects are the result of deafness or hearing loss. Hence the most important group among the multiply handicapped that deserves special education is the deaf-blind which include the dumb as well. In fact deaf-blind are triply handicapped. This group has received special attention from educators and social workers all over the world. In this chapter we will deal with some of the major aspects of the education of the deaf-blind.

## THE DEAF-BLIND

According to Fifth International Deaf-Blind Seminar, 1974, "Children are deaf-blind who have auditory and visual handicaps, the combination of which causes such severe communication and other developmental and educational problems that they cannot properly be accommodated in special education programmes solely for the hearing handicapped child or for the visually handicapped child".<sup>1</sup>

S.O. Myers points out that "at one time, programmes tended to be based on totally deaf and blind children with normal or superior intelligence". Now such children form a very small proportion of the school population; in fact, in England at present there is no such child. In countries where education on any scale is provided, it is probably true to state that at least 80% of deaf-blind children have useful vision, and a considerable number of children have some useful hearing. A more accurate description of the deaf-blind children would be "children with severe communication difficulties associated with defective vision and hearing".<sup>2</sup>

The deaf-blind population can be sub-divided into 4 groups on the basis of the residual vision or hearing. They are: (a) the totally blind and the totally deaf; (b) the totally blind and the hard-of-hearing; (c) the partially blind and the totally deaf; and (d) the partially blind and the hard-of-hearing.<sup>3</sup> However, for the purpose of this chapter we will consider the deaf-blind as one category.

### Development of Educational Services

The education of children deprived of sight, hearing and speech is considered to be a yeoman task. The methods of today are, of course, different from those used by the pioneers. But one needs to trace their development in order to be able to understand them.

As early as 1648, a book was published in England, which stated that "a man born blind, deaf and dumb, may be taught to hear the sound of words with his ears and thence to learn to speak with his tongue; For the truth is, they speak not, because they cannot hear". It also relates, without explanation, "that one Anagildus, who was reported both deaf and dumb and blind was restored to all his senses whilst he prayed unto St. Julian." Gabriel Farrell believes that the indicated author of this book, "J. B. Surnamed the Christophher," was probably Dr. John Bulwer, the first Englishman to be interested in the deaf.

More than a century later, the Abbe Deschamps, a Frenchman, in a book published in 1779, outlined a method of instructing deaf-blind children by first teaching them speech through the proper placement of lips and tongue. In 1795, a woman in England is said to have learned to communicate "by talking with her fingers at which she was uncommonly ready," and in the same year a book was printed in Madrid setting forth a method of teaching the deaf-blind through the senses of touch, smell and taste.

The author, Lorenzo Heuvasy Pandura, wrote, "a spelling book of letters is high relief; I should have the blind-deaf-mute touch them with his fingers. Then I would present to him the word 'bread' in raised letters. I would have him take a piece of bread and taste it and in this way I would make him understand what the word 'bread' meant. . . . . And so the mind of the deaf-blind would acquire knowledge. . . . .for experience shows that the knowledge of the deaf-blind is as if dammed up. It is manifested at first very slowly, but as soon as it is aroused, it runs rapidly like a torrent which has been held in restraint".

Abbe de L'Epee, the founder of the work for the deaf in France, did have an interest in the doubly handicapped. He was stimulated by Didert's assertion, that the deaf-blind could be taught through touch by patient and persistent connection of tangible signs and objects. Abbe Sicard, de L'Epee's successor expounded a complete system for the instruction of those deprived of sight and hearing which followed in-principle the method proposed by the Spanish author in 1795. This, however, was motivated primarily by a fear that some of his deaf-mutes might lose their sight, the essential sense for lip reading. Sicard had no concern for deaf-blind children and after perfecting his system there was no clarion call for its application, for he wrote: "May such a system of education be only an object of rare speculation and its

application never become necessary! May no child ever be born so unfortunate as to have instead of the ear and the eye, only the hand!"

Another similarity to the pattern which led to the education of the blind is found in a deaf-blind boy in Scotland in 1795. In a way, James Mitchell may be considered the counterpart of the blind boy in England whose sight was restored through an operation. . . . . Sir Dugald Stuart and Sir Astley Cooper reported in 1812 to the Royal Society of Edinburgh that their work with James Mitchell indicated that the deaf-blind were uneducable.<sup>4</sup>

Farrell observes that, historically and technically, schools for the deaf, especially those using the oral method are better equipped from the point of view of instruction than schools for the blind to reach the imprisoned minds of those who are both deaf and blind. But from the earliest times educators of the deaf, while often speculating about the possibility of educating the deaf-blind, have hesitated to come to grips with the problems and until very recently have taken an "out-of-bounds" attitude.

Thus in United States, as in several other countries, most of the outstanding work with deaf-blind children has been achieved by educators of the blind.

### *U.S.A.*

Dr. Howe, the youthful first director of Perkins Institution for the Blind, took up the challenge laid down by the noted scientists of England, Sir Dugald Stewart and Sir Astley Cooper. On reading an account of Laura Bridgman, a deaf-blind girl, written by Dr. Mussey, then resident at Hanover, Dr. Howe was struck by the idea that there was an opportunity of assisting an unfortunate child. Moreover he decided to use this occasion to answer the question whether a blind-mute could be taught to use an arbitrary language.

Dr. Howe lost no time in finding out the handicapped child in a farmhouse near Hanover, New Hampshire, U.S.A. She was an attractive little girl of seven years, deprived of sight, hearing, smell and taste through a devastating fever in infancy. This child was Laura Dewy Bridgman, born on the 21st December, 1829. Dr. Howe prevailed upon the parents to permit him to bring Laura Bridgman to the Perkins Institution, then in South Boston in October 1837, two months before her eighth birth day. Thus began the experiment which has been

described as "one of the wonders of the world". Laura, while at home was helped by an old neighbour who took sympathetic interest in her, to make use of the sense of touch, the only avenue of knowledge that was left to her after the ravaging fever. He took her out on 'long walks through fields and woods and made her aware of grass and trees, flowers and fruits and running water'. For the first few days Laura lived in Dr. Howe's apartments and acquainted herself with her new environment with the little blind girls of the school. She was taught a few signs to express her physical needs. Opportunities to employ her hands and to acquire co-ordination of her muscles and limbs were offered. Then came the important decision as to the method that should be followed for her formal instruction.

Dr. Howe's own story gives us the best description of the primary steps in this undiscovered science:

"The first experiments were made by pasting upon several common articles, such as keys, spoons, knives, and the like, little paper labels on which the name of the article had been printed in raised letters. The child sat down with her teachers and was easily led to feel these labels, and examine them curiously. So keen was the sense of touch in her tiny fingers that she immediately perceived that the crooked lines in the word 'key', differed as much in form from the crooked lines in the word 'spoon' as one article differed from the other."

"Next, similar labels, on detached pieces of paper, were put into her hands, and she observed that the raised letters on these labels resembled those pasted upon the articles. She showed her perception of this resemblance by placing the label with the word 'key' upon key, and the label 'spoon' upon the spoon. A gentle pat of approval upon her head was reward enough; and she showed a desire to continue the exercise, though utterly unconscious of its purpose."

"The same process was then repeated with a variety of articles in common use, and she learned to match the label attached to each one by a similar label selected from several on the table".

"After continuing this exercise several days, with care not to weary her, a new step was taken. Articles were placed upon the table without having a label upon them, as a book, a knife, etc. The loose printed labels, book, knife, etc., were placed upon the articles until she had felt them sufficiently, then they were taken off, and mingled

in a heap. She narrowly watched the process by feeling her teacher's hands, and soon learned to imitate it by finding out the label for book, and placing it upon the volume; the same with the knife, etc....."

"The next step was to give a knowledge of the component parts of the complex sign, book, for instance. This was done by cutting up the label into four parts, each part having one letter upon it. These were first arranged in order, b-o-o-k, until she had learned it, then mingled up together, then re-arranged, she feeling her teacher's hand all the time and eager to begin and try to solve a new step in this strange puzzle".

And so, time after time, the exercises were repeated, care being taken not to fatigue the child. Then came what has been called "the supreme moment in Laura's history", so graphically painted by Dr. Howe:

"The poor child had sat in mute amazement, and patiently imitated everything her teacher did; but now the truth began to flash upon her, her intellect began to work, she perceived that here was a way by which she could herself make up a sign of anything that was in her own mind, and show it to another mind, and at once her countenance lighted up with a human expression; it was no longer a dog or parrot, it was an immortal spirit, eagerly seizing upon a new link of union with other spirits. I could almost fix upon the moment when this truth dawned upon her mind, and spread its light to her countenance; I saw that the great obstacle was overcome, and that hence forward nothing but patient and persevering, plain and straight-forward efforts were to be used".<sup>5</sup>

Thereafter Laura's education advanced steadily, unfolding the mysteries of the world to her at every new step. Since that time, there has been an unceasing stream of doubly and often triply handicapped children at the Massachusetts school, where they are now known as The Children of the Silent Night.<sup>6</sup> Of them, more than twenty deserve mention, but special reference must be made to the world famous Helen Keller.

When Anne Sullivan, later Mrs. Macy, went to Tuscumbia, Alabama, she took with her a doll dressed by Laura Bridgman, who was still living at the school, as the gift of the girls of Perkins. This doll became the subject of Helen's first lesson when the new teacher spelled the letters "d-o-l-l" into her hand in the manual alphabet. This,

however, did not awaken a response and it was while holding her hand under water from a pump that the concept of word meaning penetrated the mind, and "w-a-t-e-r" was the first word that Helen Keller voluntarily spelled. Response to the underlying idea that finger positions represented the names of objects was evident in three weeks and from there on Helen's onward march to heights of genius and greatness has been unimpeded. Though doubly-handicapped, after finishing her ordinary schooling, she earned her degree of Bachelor of Arts from Rad-cliffe (Harvard). Since then she had been known as a reputed writer and a philanthropist. Her scholastic honours have not stopped here, for she was awarded the degree of Doctor of Humane Letters by the Temple University (Philadelphia) in 1931 and that of Doctor of Laws by the University of Glasgow in 1932 for her philanthropic; philosophic and literary works.

The first deaf-blind pupil to be taught articulation in the formative years of education was Willie Elizabeth Robin, who, in December 1890, when she was six, came to the Perkins Kindergarten from her home in Texas, "bereft of sight and hearing by severe illness called catarrhal fever", at the age of eighteen months. Under a special teacher, Elizabeth's formal training began with objects—fan, hat, and ring — following the procedure established in the education of Laura Bridgman. She soon had a mental grasp of what was meant, and her response was so sure and quick that she achieved a knowledge of the objects within a fortnight. So steady was Elizabeth's progress that she received a diploma in June 1906, as well as a certificate for the completion of the full course in manual training. She was the first deaf-blind student to have been awarded a diploma signifying graduation from high school.

The continuous presence of deaf-blind pupils, from the admission of Laura Bridgman in 1837 to the present time, has focussed attention on Perkins for its work with doubly handicapped children. Prior to 1931, there had been eighteen deaf-blind pupils in residence. In that year, a special department replaced the old plan of employing a teacher for each pupil. Now teachers, skilled in speech building, are engaged only in class room instruction, while attendants care for children outside of the class room. In making this fundamental change, it was hoped to secure more skilled teachers on a professional level and by distributing responsibility to avoid both the loneliness of Laura Bridgman after her school work terminated and the lifelong dependence of Helen Keller upon first Mrs. Macy and later Miss Thompson.

The approach in general teaching was also changed from the method developed by Dr. Howe with Laura Bridgman. Instead of beginning with an object and having the pupil learn its name, a command is now the opening wedge. Most teachers begin with the command to bow. The initial learner places his fingers on the teacher's face, feeling both the vibrations of the muscles of articulation and the lip positions used in forming the elements of speech. The teacher will say "bow" distinctly, while he pushes the child's body into a bowing position. This is done again and again, until the muscular pattern of bowing is associated with the vibrations felt as the command is spoken. Often it takes months of daily work in short periods to get this idea into the child's mind and sometimes it is never accomplished. But after the first command is understood, the more complicated commands become progressively easier to teach.

Another vital change was to make speech the main medium of communication. Spelling in the hand was no longer taught to those who could develop speech, and manual signs were not encouraged. The aim was to make communication as normal and natural as possible, so that any one, not only those who knew the manual alphabet, could talk with the children. In earlier years, this was not thought possible, but now its practicality has been proved, and can be demonstrated by several accomplished students. The secret of the success of the new method is vibration, and it has become, in a large measure, sight and sound to the deaf-blind.<sup>7</sup>

Speech is acquired by repeated drill in the fundamental sounds until a normal voice is produced. To understand speech, word meaning is associated with minutely varying vibrations. At first this is stimulated by an electric device. Later the vibrations are "heard" through the fingers placed on the lips and right or left cheek of the person talking.<sup>8</sup> Building speech through vibration requires competent teaching. At first, the child has to be taught how to form his lips and place his tongue in order to make the fundamental sounds in somewhat the same way described by Deschamps in 1779. Beginning with "oo" "ah" and in some cases "ee" the child must learn to give these sounds in a natural voice, and then combine them into words as spoken by the teacher. This takes weeks and months of careful and unceasing work, but the progress that is possible is its own reward. It must be remembered that deaf-blind children are not naturally dumb. They are not able to imitate speech because they never have heard people

talk - a principle, first enunciated by Dr. Bulwer in his book published in 1648.

Taught to hear through vibration, the deaf-blind child must then build word meaning into the delicate varying vibrations of the throat muscles. He must then be taught to reproduce with his own vocal cords the sound thus heard.<sup>9</sup> This method was originally developed by Miss Sophia Alcorn, for many years a teacher of the deaf in the Detroit public schools, and modified considerably by Miss Inis B. Hall, the first Head of the Deaf-blind Department at Perkins, and later, until her retirement in 1952, the first Director of the Department of the Deaf-blind in the California School for the Blind.

Since Perkins' floors are concrete which carry no vibration, a hardwood floor laid on strips of rubber has been placed in the large room of the Deaf-Blind Department. This has extended the use of vibration and the deaf-blind children can locate one another and take part in rhythmic games on this 'super-floor'.

The electric device mentioned above is known as Phipps Unit. It helps to preserve and develop the residual hearing of the deaf-mute. It assists the pupils to hear through bone-conduction. It looks like a gramophone without a horn; and very soft music, only audible through the bone-conduction of sounds, is produced. This soft music or talk is heard by holding to or placing on the bones or between the teeth the metal butt of the wire, attached to the unit. The mechanism is simple and anyone can operate it.

Extensive research is being carried on in the school for the instruction of the deaf-blind at the New York Institute for the Education of the Blind, not only with electrical hearing equipment but also with a floating floor; through such means it is felt possible to conduct the education of deaf-blind children on lines similar to those used for normal hearing and sighted children.

In short, a floating floor may be described as a suitably devised floor through which vibration may be conducted. Dr. Merle E. Frompton, enumerates its uses in the following paragraphs:<sup>10</sup>

"The floating floor is used with children of varying degrees of development and ability. With some children who elicit little or no response, work on the floor has proved successful and they have begun to respond to taps on the floor and vibrations from the piano

by clapping, shaking percussion instruments, or tapping in rhythm. Students who give more response are given work on the floor to increase sensitivity to pitch and rhythm, improve speech, and for exercise and group recreation."

"Vibrations are set up by a piano or by the teachers tapping on the floor, and are controlled so that the response can be identified as being elicited definitely by the vibrations themselves".

"Some work is given in which students identify pitches as high, middle or low when a tone is struck. The same kind of work is done with responses to rhythm and the students clap to the rhythm, changing as the tempo varies."

"Speech work is done on the floor with vibrations from the piano giving the cues for repetition of words or sounds in rhythm, and change in volume indicating accent in words of more than one syllable. Change of volume have proved helpful in showing the students what the teacher wants if voice is not full enough."

"Speech work is also done with the piano, using nursery rhymes, commonly used sentences and expressions, words to singing games and counting for dance rhythms. The emphasis in this type of speech work is primarily upon rhythm, phrasing and inflection."

"The floor is used in several ways for group work; rhythm band, training in a social dancing and gym classes for the girls in which they do work on exercises, balance and relaxation, and learn dances and action games."

"For several students in the department, the floor has been a fine aid in helping them to walk independently and to improve co-ordination. This has not always been accompanied by vibration work, but has shown us that the floor has some quality in itself which is valuable to many who have co-ordination difficulty".

In 1946, the American Foundation for the Blind turned its interest to the deaf-blind and set up a new programme known as the Helen Keller Department. The Department, under its own director, has become an active centre for promoting interest in the doubly handicapped, and is endeavouring to list deaf-blind people and to analyze the services they need. It is also undertaking a programme of public education, and through well placed press and radio stories

is doing much to focus attention on this small section of the blind population in the United States, which has been described in the past as "the most neglected and the most handicapped in the World".

For long, all efforts for the education of deaf-blind children have been somewhat spasmodic and sometimes selfishly centered in the schools undertaking this work. For that reason, one of the most significant developments in this area was the Conference of Educators of Deaf-Blind Children, sponsored jointly by the American Foundation for the Blind and Perkins Institution, which was held at Perkins on April 13 and 14, 1953. The good response made by schools for the deaf was encouraging, for it indicated a revived interest in the doubly handicapped, or perhaps a greater readiness to tackle the problem.

The delegates present, after discussing the problems of educating deaf-blind children and the extreme difficulty of finding adequately trained teachers, recommended that a permanent national committee be established to deal with this matter. In September 1955, Perkins Institution opened a special class for training teachers of the deaf-blind to supplement its long-established courses for instructors of the blind. The committee has also initiated plans to develop a programme of research into the problems of the health and education of deaf-blind children.<sup>11</sup> This was the most constructive action that had developed in this special field, which gave the promise of a more hopeful future for 'the children of the silent night'.

The rubella epidemic of 1964/65 which presumably resulted in a sizable increase in the number of deaf-blind children gave an impetus to 1968 Federal Legislation in the United States, which provided for the establishment of centres and services for deaf-blind throughout the country.

Since 1969 ten regional centres for deaf-blind children were founded to develop, co-ordinate and stimulate services for the deaf-blind population in all fifty States, including the Trust Territories, Guam, Puerto Rico and the Virgin Islands. Each regional centre is responsible for the administration, co-ordination and dissemination of funds to participating agencies under what is called sub-contract agreements to provide services to deaf-blind children and their families. A full range of services is provided through more than 250 programmes throughout the United States. The services include diagnosis and evaluation, educational assessment, interim, intensive or respite care, summer camp programmes, itinerant home teaching and

correspondence programmes, in-service programmes for parents, teachers, and others, and full-time and part-time educational or training programmes in residential or day schools.

In U.S.A. there is no state which has not identified at least a single deaf-blind child and does not have at least one programme for the deaf-blind. With increasing services for the deaf-blind the United States has faced the problem of a dearth of qualified personnel such as educators and para-professionals. Therefore great emphasis through Federal funds has been placed on in-service training in order to supplement the skills of teachers of the deaf, teachers of the blind, child care workers and social workers.<sup>12</sup>

### \* *United Kingdom*

In the United Kingdom, in 1952 there was one school at Conover Hall, for blind children with additional handicaps. It served 175 children among whom three were deaf-blind.

In 1971, the responsibility for severely sub-normal children, including the deaf-blind was transferred from the Department of Health and social security to the Department of Education and Science. With this change in responsibility came the principle that all children should receive education, no matter how severe their handicaps. So the large group of children who had been classed as severely sub-normal or ineducable was examined closely and it was realized that it could be subdivided into groups according to educational needs, and one of these groups was the deaf-blind. So units began to be opened attached to schools and mental hospitals.

In 1973, a survey by Hills and Best revealed that there were 95 severely mentally handicapped deaf-blind children in mental hospitals who did not receive any education usually accessible to others.

The Inner London Education Authority have appointed a peripathetic (itinerant) teacher of deaf-blind, whose job is to go into schools for the mentally handicapped, identify the deaf-blind children, and then visit the school regularly, giving advice to the teacher on handling the deaf-blind child. In this way the teacher can help 28 children, instead of the 8 he had as a unit teacher. However experience shows that an extension of this service will be much less effective than an increase in the number of units.

In 1973, an organization of parents and teachers called the National Association for Deaf-Blind and Rubella Handicapped evolved a programme for communication between teachers. The education section of this organization maintains regular contact between teachers by means of a termly newsletter in which there are contributions from each of the units.

The Association holds meetings twice a year for the staff of the units for the deaf-blind in which subjects like, curriculum content, definition of deaf-blindness, placement after school, behaviour modification with deaf-blind children etc., are discussed.

The Royal National Institute for the Blind has a group of Education Advisors who have taken responsibility for a wide range of children, including that group into which most deaf-blind children fall, thus giving a definite, reliable source of help to parents, teachers, social workers and doctors who may have to deal with a deaf-blind child.

The report suggested that many of the large toys such as slides, see-saws, that are often used with deaf-blind children, may simply encourage non-constructive, repetitive behaviour, and it would be better to use toys which require "the exercise of a variety of other activities, each of which brings into operation other basic skills".

## *Russia*

In Russia, the Institute of Defectology in Moscow, investigates various physical and mental "defects", in "Laboratories" which design teaching techniques, programmes, and equipment for application in the special schools throughout Russia. There are classes for handicapped children (eg. deaf, blind, deaf-blind, mentally retarded) for experimentation with methods. At the same time, the technical apparatus and teaching aids are constructed in the establishment and tested in the class rooms. The children live in dormitory accommodation at the Institute.

The approach adopted with deaf-blind children has produced quite outstanding results, both academically and in communication skills. However, the deaf-blind being educated in Russia are mainly the "classical" or adventitious type.

At Zagorsk, 75 kilometers from Moscow is situated a national school for deaf-blind children. This school was established in 1963 and in 1974 there were 50 pupils, ranging in age from 3 to 23 years. Children here are taught in groups of 3, with 3 teachers to each group (apparently some of these adults are teachers' aids). The methods and equipment used at the school have been designed by Dr. Mescheryakov and his assistants at the Institute of Defectology.

Three senior students of the Institute passed the usual entrance examinations to the University in Moscow and received medals. Two of them majored in Psychology and one in Philosophy. Each had an interpreter, communicating through fluent speech, finger spelling (one-handed) and braille. The lectures in this Institute are put on tapes from which the students make braille notes. All students use a typewriter in addition to an upright braille writer.

The most interesting and unique piece of equipment used with the deaf-blind is a "Tell-Touch", a group communication device. This aid was designed and constructed at the Institute. It is in the nature of a group hearing aid, except that communication is through touch. A semi-circular table with a communication panel for the teacher and five communication panels for students are the essential features. The teacher's panel has switches which activate vibrators at the students' panels. The control panel also has a typing keyboard and a braille key board. Each student has a braille cell connected to the control and a braille key board. The device is electrically wired.

The main objective in this teaching programme is the development of intellectual qualities. Speech is not stressed at the cost of training the development of the intellect. In their scheme of work the order of importance is:

1. Practical work
2. Thinking
3. Development of communication
4. Oral speech

The 'Tadoma method' is not used; it is felt too difficult for most people to use it effectively. So there is an emphasis on finger-spelling for parents, and letters in the palm for the public. The school programme provides for both general and vocational education. Some of the vocational preparation covers toy making, sewing, making blankets, and making safety pins on machines.<sup>13</sup>

## *Germany*

In Germany the first deaf-blind child was accepted into the Oberlin Home at Potsdam – Babelsberg by the Director, Pastor Hospe, and educated by the Teacher of the Deaf-Blind, Gustav Riemann, in 1887. At the turn of the century a permanent centre was established there which later housed 12 deaf-blind children and 30 adults. At Stuttgart School for the Blind the deaf-blind children are integrated with the blind but are trained separately in "writing into the hand".

The idea of a comprehensive, national centre for the deaf-blind was conceived by Herr W. Marhauer, President of the Federation of the Blind of Niedersachsen and Vice President of the German Federation of the Blind. He founded the charitable institution and collected 15 million D.M. from public and private sources. Thus in 1972 the German Deaf-Blind centre at Hannover came into existence.

The centre serves as a residential home for 50 children and 30 adults. In addition 100 children and adolescents and 400 adults are cared for on a non-residential basis. It deals with all problems of rehabilitation, including:

1. Registration of children and adults.
2. Consultation with parents of families.
3. Early care of pre-school and school age children.
4. Education of school children.
5. Vocational training of adolescents.
6. Vocational integration.
7. Re-education and further education of adults.
8. Representation of the deaf-blind in all matters.

An educational expert (female) is in charge of early care.

The centre assists parents of deaf-blind children by offering them consultation in collaboration with medical specialists. Parent courses at the Centre provide parents with hints for a useful pre-conditioning of the child before entering school. The deaf-blind school is the nucleus of the Deaf-Blind Centre. There, efforts are made to induce in the children a realistic conception of space as well as to develop communication by language through spoken, written and

tactical means. The physical, intellectual and spiritual growth of the pupils are fostered in a manner corresponding to the different dispositions and talents and to teach practical living skills.

The educational principles of the centre are:

1. Protect the deaf-blind child from internal and external stress.
2. Activate and develop all residual sensory perceptions of the deaf-blind child.
3. Get rid of development and behavioural abnormalities.
4. Teach the deaf-blind child the use of the means of communication and aids.

In view of giving the deaf-blind person self-confidence and economic independence, the period of vocational training in the centre is preceded by a one-year period of vocational assessment. Lessons are held in pavilions where four children of different age, sex and degrees of disability are housed as a family. They are taught and cared for by one teacher, one housemother and three female educational assistants. Teachers of the deaf-blind take a university degree requiring five years' study and passing three state examinations.

They receive the same salary as grammar school teachers and are civil servants of their respective regions. In order to develop to the utmost the capabilities of children of different dispositions and handicaps, there is a preparatory period of curricular assessment research run in conjunction with Hamburg University. The centre offers rehabilitation services to those who in adulthood lose their sight when already deaf, or their hearing when already blind, or even both senses.

Although the services at the centre are restricted to pre-school and school education, vocational training and social rehabilitation, it also gives special attention to medical rehabilitation such as measures of functional improvements, corrective surgical operations, treatment by medication or occupational therapy, remedial exercises, and the supply of technical aids. The centre carries out these programmes in co-operation with the medical school nearby.

The centre tries to create a homely atmosphere for those deaf-blind who have not known it before. In many cases they have had to leave their circle of friends and the surroundings familiar to them. Therefore, the centre has developed foster relationships in conjunction with church congregations. Nearly half of the deaf-blind work in the

sheltered workshop next to the centre in traditional craft. Others knit or cane at home; letters are folded and inserted into envelopes; industrial orders from the corporation of Hannover are carried out. The leisure time activities in the Centre include all activities that are within the scope of the deaf-blind-gymnastic exercises, swimming and other sports, cooking and handiwork, reading and games, rambles and visits, parties and religious ceremonies.

Technically, the buildings are adapted to the requirements of the deaf-blind. Different routes are distinguished by a change in the building material. Inside and around the Centre specialized rails serve to facilitate mobility. A vibrating rod in front of the lift indicates when the door is about to open. Several vibrating knobs inside the lift indicate on which floor it is about to stop. Rotating ventilators inside rooms replace bells. In every room there are 'mains columns' where additional electric apparatus including the Brailomat, a deaf-blind communication aid, can be connected. Every deaf-blind person can operate an alarm system in case of emergency from his bedside. Amplification equipment and induction coils are to be found in the pavilions, the gymnasium and the rhythmic room.<sup>14</sup>

### *Holland*

In Holland, the Institute for the Deaf in Saint Michiels-gestel has a separate section for deaf children with additional handicaps. It is known as Maria-School. In January 1962 a pavilion for deaf-blind children was opened. Education by means of the manual alphabet, accompanied by speech as much as possible, is the method of teaching in the school.

### *France*

France has two schools where deaf-blind pupils are admitted, one at Saint-Mande for girls and one at Poitiers for boys. Because of the small number of doubly handicapped children in these schools and the variations in their abilities, the programme is carried out almost entirely through individual instruction.<sup>15</sup>

### *Sweden*

Ekeskolan in Orebro, Sweden, is a state school for blind children with additional handicaps. It was opened in 1965, but the school had actually started in 1886 as a private school for four deaf-blind children

at Skara. In 1922 a new institution was opened in Lund. And so in 1965, fifty pupils from Lund were transferred to Ekeskolan. The institution in Lund is now a home for multi-handicapped blind.

Ekeskolan consists of a pre-school, an observation department for younger pupils, primary school, and a department for vocational training. Numbers of children vary from 75-100. They come from all over the country. Children can be admitted to the school from the age of about four for observation, or attend a pre-school group for short periods. The pupils can remain at school until they are 21 years old.

Most of the pupils are resident, a few youngsters (also deaf-blind) are living in their own homes or in foster homes. The pupils go home five times a year, a few of them go home every week-end.

Most of the deaf-blind children at Ekeskolan live with the hearing children. Finger-spelling and sign language are used in communicating with the children. Social training through ADL has been an important part of the school programme.

### *Norway*

A school for multi-handicapped deaf children was opened in Andebu, Norway in 1949 with 10 children. In 1974 there were 35 children in the school, coming from all over the country. The children live in small family groups together with a housemother and her assistants. Several of the pupils have sight defects as an additional handicap to their deafness.

There has been a special school programme for low functioning deaf-blind children. For some years the centre had invited parents of pre-school deaf-blind children to stay at school with their child for a week or two. During that time the child was observed and the parents were given guidance. Before the child is admitted to the school, usually at seven years of age, in some cases longer observation periods take place. This service for pre-school deaf-blind children and their parents has taken place in close co-operation with the consultant for the deaf-blind, the Department for Observation and Guidance (at Skadalen School for the Deaf, Oslo), the social worker and the psychiatric and psychological consultant, and with professional people for the childrens' homes.

At Hjemmet for Dove, Nordstrand, the deaf-blind adults are offered social training to help them function as independently as

possible in the institution or in their own homes. They are taught braille and other communication methods along with a mobility course. After training, some of the deaf-blind get jobs in sheltered workshops or in open industries.<sup>16</sup>

## **Professional Standards**

The North American Committee on Services to Deaf-Blind Children have set forth certain professional standards in the functioning of services for deaf-blind children in the United States. They are as follows:<sup>17</sup>

### *1. Comprehensive Diagnostic and Evaluative Services*

- i. Diagnostic and Evaluative Services (D & E) should be centred in those facilities which provide a full range of services to deaf-blind children and youth.
- ii. Adequately trained and experienced personnel should staff the D & E services.
- iii. A minimal number of D & E centres should be provided with highly developed D & E expertise and quality services available on a wide geographic area.
- iv. D & E facilities should employ personnel to work with parents and guardians from the time of initial referral to educational placement for parent support, counselling, and education. Co-operation and co-ordination should be made with existing local, state and regional agency personnel.
- v. Long-term comprehensive family services and programmes should be established with provisions made for the changing needs and stress factors involved in raising deaf-blind children.
- vi. Specific plans should be offered to D & E as well as educational services, for children who cannot be enrolled in participating agencies.

### *2. A Programme for Adjustment, Orientation, Education and Consultation*

- i. An educational specialist should be available to each deaf-blind staff, with adequate training and long-term experience

in working with deaf-blind children. The teacher-pupil ratio should reflect the needs of the children.

- ii. Teacher and staff preparation should reflect the needs of those served by the programme.
- iii. Each programme should have use of a relevant curriculum encompassing all areas of development adapted to the needs of the individual child served.
- iv. Recreation and physical education should be provided for maximum emotional and social development.
- v. A planned approach should be developed for the children's initial relationships to others, peer contacts, group experiences, larger social activities, etc., depending upon the functioning level of the individual child.
- vi. Facility and safety factors should be considered when establishing and using facilities for deaf-blind children and youth.

Proper care and procedures regarding hazards, accidents, illnesses, medication and transportation of children should be established.

### *3. Teacher Preparation Programmes*

- i. Because of the unique need for personnel with specific qualifications to work with deaf-blind children and youth, only well qualified and experienced personnel should undertake a programme in teacher preparation.
- ii. Practical work should be undertaken only under a master-teacher with deaf-blind preparation and experience.
- iii. Students should be placed in a variety of practical settings so that they will gain experience with children at varying educational and training levels.
- iv. Skills necessary for supervision should be built into the preparation programme so that the trainee will be able to programme aids and assist teachers.
- v. Specific course-work oriented to various areas in deaf-blind education should be required rather than a compilation of course-work for deaf, blind, or retarded. Particular

attention should be given to the ability to develop communication skills through the complete spectrum.

- vi. Course work in related areas shall be interpreted and applied to the area of the deaf-blind by some one experienced in that area who knows the characteristics and learning problems of deaf-blind children.

Parents also make extensive use of the Resource Centre, comprising:

- 1) A Reference Library.
- 2) A Toy Library
- 3) An Audio-Visual Library

The Centre developed a curriculum guide which could be effectively communicated to teachers, and implemented by parents. Initially the aim was to train the parents to train the children, but even when deaf-blind children were attending full-time schooling, parents attended one session per week.

### Footnotes

1. *Fifth International Deaf-Blind Seminar*, Conover Hall, Shrewsbury, 26th July - 1st August, 1974, Business Session, p.117.
2. S. O. Myers, "Preparation For Leaving School And The Provision of Community Services", *Fifth International Deaf-Blind Seminar*, Conover Hall, Shrewsbury, p.102.
3. R. M. Halder, *Society and the Visually Handicapped*, p. 6.
4. Cf. Gabriel Farrell, *The Story of Blindness*, pp.78-80.
5. Cf. R. M. Halder, *op.cit.*, pp.142-144.
6. Gabriel Farrell, *op. cit.*, p. 77.
7. *Ibid.* pp. 82-85.
8. R. M. Halder, *op.cit.*, p. 144.
9. Gabriel Farrell, *op. cit.*, p. 86
10. Cf. R. M. Halder, *op.cit.*, pp.145-146.
11. Gabriel Farrell, *op.cit.*, p. 90.
12. Robert Dantona "Recent Development in Programmes for the Deaf Blind", *Fifth International Deaf Blind Seminar*, 26th July - 1st August 1974, pp. 21-24.

13. Keith Watkins, Report on the Institute of Defectology, Moscow, U.S.S.R., *Fifth International Deaf-Blind Seminar*, 26th July - 1st August, 1974, pp. 30-32.
14. K.H. Baaske, "Developments in the Federal Republic of Germany", *Fifth International Deaf-Blind Seminar*, 26th July- 1st August, 1974, pp. 43-45.
15. Gabriel Farrell, op. cit., p. 88.
16. Solveig Ostenby, Recent Developments in Programmes for the Deaf-Blind in Sweden, *Fifth International Deaf-Blind Seminar*, 26th July - 1st August 1974, p. 40.
17. Verna Hart, "Designing Programmes to Meet the Total Needs of the Child and Family" *Fifth International Deaf-Blind Seminar* ibid. pp. 76-80.

## CHAPTER XVI

# VOCATIONAL TRAINING

### Significance

Vocational training is an important component of the vocational rehabilitation process. There are some disabled individuals who, after they are provided with physical restoration services, are capable of going back to their old jobs. But, there are unfortunately many, who are unable to do so, and, therefore, require training in new skills. Vocational training may not be so essential to an able bodied person, who can benefit by general education. But for the disabled, who has to compete in the open labour market against the prejudice of the employer and co-workers, equipment with a special skill is the only alternative. The technical qualification acquired through vocational training will offset the effect of physical disability and is of value in the eyes of the potential employer. It also gives the individual self-confidence, the lack of which may often be a greater handicap than the disability itself.

The old concept of purely 'custodial' care of the physically handicapped by the community or the society has undergone a radical change. In the past, training was left to voluntary organizations or to the disabled individuals themselves. But now in many countries governments have taken the initiative in this regard.

### Objectives

With the type of patient whose disability is either progressive or liable to vary in degree and effect from time to time, vocational training may serve multiple purposes:

- (1) Given as part of a long-term treatment, it offers opportunities of closer medical and vocational observation of the patient, and is certainly one of the most important factors in the building up of a strong motivation for rehabilitation.
- (2) Vocational training will counteract the tendency for patients to take a short-term rather than a long-term view of their present and future problems.
- (3) If the vocational training is provided in an industrial set up it may be the most reasonable way of creating physical and mental fitness for normal work.

Disabled persons who have training potentialities and who have been oriented and assessed for a suitable trade are often in a much better position to contribute to the economic development of their country than the majority of the able-bodied for whom no such evaluation services exist.

If there are no possibilities of establishing "factory environment simulation" or a similar realistic work preparation, a "placement preparation programme" may be introduced to give the client an exposure to the type of people and situations they may encounter in competitive work setting:

- "Looking for the Right Job."
- "Getting Ready for a Job Interview"
- "Why people fail to get the jobs they seek".
- "How to keep Your Job".<sup>1</sup>

Because of the rapid technological changes both in the industrialized and the developing countries, the rehabilitees should be prepared for the necessary transition following on the labour market. Because of their physical or mental limitations, the disabled may be considered part of the most vulnerable elements of the work force. In order to overcome this they will have to be more on the alert concerning the technological changes taking place in their field of occupation and be prepared to make greater efforts to keep abreast. In order to be considered equal with the able-bodied they will have to range above the average and must never allow themselves to adopt the attitude of asking for more than fair treatment because of their disability.<sup>2</sup>

The object of training the disabled is therefore to help them to cope up with their disability and to equip them with skills necessary for effective participation in the socio-economic life of the community. If his life is to be maintained not on charity but on self-sufficiency basis, education must provide skill and workmanship and lead to placement and occupation, which are the most important pre-requisites of an independent existence.<sup>3</sup>

## **Vocational Assessment**

Experience has shown that in some developing countries the view is taken that disabled persons cannot be placed in employment unless they have undertaken long-term training for the occupation considered to be most suitable for the individual in a centre specially designed for this purpose. This is not necessarily true. Some disabled persons, because of the severity of their disabilities, may be unemployable and must be left to the care of the welfare and social services. Others, owing to limited intelligence, lack of education or poor physical condition, will not have the mental or physical capacity to absorb training for highly skilled occupations. Their avenue of resettlement will be unskilled or semi-skilled work which does not call for long-term vocational training but only a short period of on the job instruction.

There are, of course, several factors which must be considered in determining a disabled person's suitability for vocational training. These may be listed as follows:

- he must have the necessary level of intelligence, educational background, work experience or potential aptitude to be able to derive benefit from the particular course;
- he must have the capacity to match up to the physical requirements of the actual trade;
- he must have the interest, determination and necessary adaptability to absorb training and make good in a new occupation;
- he must have reasonable prospects of placement in the trade on completion of training.<sup>4</sup>

Since last World War, a number of countries have set up centres specially designed for vocational assessment or have combined

the activities with existing medical rehabilitation services. Centres of this kind are known by a variety of names such as industrial rehabilitation centres, observation centres, rehabilitation, re-settlement, work evaluation or preparation centres.

Although the scope of such centres may differ from one country to another, their main objective is to provide short courses (of some six to eight weeks' duration) designed to assess and prepare the disabled for entry or re-entry into suitable vocational training or directly into employment.

The philosophy behind this development is that, if the disabled are to take full advantage of their inalienable right to an equal share of employment opportunities with the non-disabled, then every effort must be made to ensure that the employment they are offered is within their physical and mental capacity. This involves a process of total evaluation of the disabled person – not only of his vocational training and or employment potential but also of the related medical, social, psychological and educational factors which have a bearing on his working capacity and capabilities.

As comprehensive or team assessment has developed, the need for the assessment process to include an evaluation of vocational skills in a realistic work setting has been recognised. Moreover, it has been found that in those cases where disabled persons are new entrants to the labour market or have lost touch with the day-to-day requirements of remunerative employment (i.e., the tempo of work, normal working hours, industrial discipline etc.) because of prolonged sickness or inactivity, a short period of employment orientation is essential to bring the disabled person upto the standard an employer expects of him. This method of total assessment, embracing a period of vocational preparation, not only ensures that the disabled person is guided into suitable vocational training and or employment but, equally important, ascertains that he is physically and mentally equipped to retain it and thus compete on equal terms with those workers having no disability.

The principal purpose of vocational assessment and work preparation services is to assist a disabled person to:

- change his job with his old employer or find a new employer;
- recover lost skill in handling tools when he has not worked for a long period because of injury or illness;

- recover the ability to work at a reasonable speed for a full day without undue fatigue;
- cope with a new disability, e.g., to try out a damaged limb on realistic work exercises before tackling the demands of normal employment;
- regain confidence in his ability to do a full-time job;
- become accustomed to working a full day in industrial conditions if he has not previously worked.<sup>5</sup>

The philosophy behind vocational assessment is that every individual must be considered as a unique combination of potentialities and limitations both physically and mentally and each factor should, as far as possible be qualified for the total assessment representing positive or negative elements of the individual's "rehabilitation potential".<sup>6</sup> The basic factors influencing the rehabilitation potential would be:

- willingness and ability to adjust to a new and unfamiliar situation and condition, indicating the client's motivation and stamina for rehabilitation and total resettlement;
- residual functional capacity as resulting from maximum available treatment and the provision of and training in the use of technical aids (prosthetic and orthotic aids and appliances, special tools and equipment, means of transportation, etc.);
- the socio-economic background including educational and cultural.

The medical diagnosis should never be regarded in a general sense, but must be considered in relation to the factors mentioned above, i.e., related to the actual person and his total prognosis, both short and long-term. As it was formulated more than fifty years ago: "It is much more important to know what sort of a patient has a disease than what sort of a disease a patient has". This does not indicate that the disability is unimportant, but stresses that the decisive factor is the way and extent to which the individual person is able to develop and utilize his remaining abilities and adjust himself to live with his condition, reduce the effect of his disability and, as far as possible, prevent it from turning into a general handicap.

From the earliest stage of assessment it must be stressed that the end result of any rehabilitation measures depends largely upon the degree to which the rehabilitee has made the rehabilitation plan

his own, with a total involvement on his part. When, through guidance and assessment, the disabled person can be assisted to increase his self-knowledge, understanding not only his limitations, of which the client is most painfully aware, but also his own potentialities, he will be helped to decide on a better and more realistic plan than would otherwise be possible and create the incentive necessary to take reasonable steps to attain his goal. If, on the other hand, the client feels that he had little to do with the plan in the first place, he is less inclined to make the personal adjustments as required by new and sometimes very trying conditions than when he has been an active participant in mapping out his own rehabilitation course.

Because of difficulties in test interpretation, the main assessment of clients will have to be based on observation of their performance on job samples in a workshop or in actual work situations at the same time giving the client the much needed first-hand knowledge of the particular job of his choice. Vocational evaluation has been defined as observing the work personality, as demonstrated in work setting, in order to predict work behaviour, training capacity, and response to treatment.<sup>7</sup>

### **Vocational Assessment and Work Preparation Centres**

In many developed countries vocational assessment and work preparation centres have been developed in isolation from vocational training centres although sometimes they are in the same compound or in close proximity to each other, with a centre manager having over-all responsibility, aided by a rehabilitation officer in charge of vocational assessment and a workshop manager in charge of vocational training. In developing countries, which frequently have insufficient finance or qualified staff to organize arrangements of this kind, it has generally been found preferable to commence operations in a centre which combines both operations on a relatively small scale. Such a centre serves as a "pilot scheme" which could be expanded as circumstances permit.

In considering the procedure to be adopted in setting up and running a vocational assessment and work preparation centre, it should be borne in mind that the objectives are to:

- help disabled persons gain or recover working habits;
- give help and guidance on social problems which may be impeding resettlement;

- provide physical reconditioning where necessary;
- provide medical, psychological and vocational assessment of capacity to work in particular types of jobs;
- build up or restore morale and self-confidence;
- find suitable employment for the individual;
- arrange for vocational training of the rehabilitee, if necessary, before obtaining suitable employment.

In order to establish and develop successfully a centre of this kind it would be necessary to maintain the closest co-operation with and to make the fullest use of existing related services in the country, such as medical and para-medical services, vocational guidance, vocational training and placement services. In developing countries where services of this kind are minimal or even non-existent, community support for vocational rehabilitation services would have to be obtained. Support, particularly financial assistance, would be necessary either from the government or from any voluntary organization.

The decision on the type of centre to build would depend on the rehabilitation services already in existence in the country. For example, if medical and para-medical services are reasonably well established in a hospital it would be advisable, provided land is available, to permit building a separate block, to operate it in conjunction with the hospital. This would have the advantages that:

- the best possible use could be made of the services of a hospital doctor (on a part-time basis), the social worker and the remedial gymnast who might otherwise be difficult to find;
- the centre's proximity to the hospital would enable patients to spend some time each day in the centre as they progress until they are able to attend the workshops full time, thus maintaining the continuity of the rehabilitation programme and avoiding the passing of the disabled person from one service to another.

The facilities of the centre would also be open to disabled persons with congenital or long-standing disabilities not responding to medical or surgical treatment. It might be desirable in some cases to provide prosthetic or orthotic appliances, but the extent to which this could be done would depend on the availability of such appliances.

Where other rehabilitation services are not adequately developed or space is not available, the centre would have to be built as a separate unit, but as near as possible to any existing services.

Disabilities which handicap people in their choice of occupation are many and varied; for example, blindness, deafness, loss of limbs or parts of them, other orthopaedic disabilities, heart weakness, tuberculosis, leprosy, mental retardation, psychiatric condition etc.

A decision would have to be taken at an early stage on whether the centre should cater for persons with all forms of disability or only for those with specific types of disability, and if the latter, what types.

Where the centre is to be run by a voluntary organization it would be likely to deal only with particular types of disability according to the objectives of the particular organization.

Where the centre would be under the control of a government ministry or department it would be well to admit rehabilitees suffering from as many different kinds of disabilities as possible. The admission of very seriously disabled persons, whose prospects for employment are limited, should be restricted, but might be increased at a later stage when experience is gained in handling a few of them.

If it is proposed to include the blind, whose rehabilitation calls for special techniques, they should be given an orientation course before admission (e.g., mobility training for the newly blinded) so that they might be integrated easily with the other rehabilitees.

### *Location*

The location of the centre would depend on several factors, the primary one being the existence of a number of disabled persons in the area who needs its services. If it is a pilot scheme, it is probable that it should be sited in the capital or some other large town which is, in varying degree, industrialized. If the country is still mainly agricultural with rural craft and cottage industries, it should be sited in close proximity to existing medical rehabilitation facilities so that there would be easy transfer from medical and para-medical activities to vocational activities and to subsequent placement possibilities.

### *Implementation*

Once the location of the centre is decided, the next step to be considered is the implementation of the programme. It is suggested

that the maximum capacity should not exceed 100 places with a daily occupancy rate of about 85 to 90 so that undue strain on the staff would be avoided and some margin would be left to cover staff absences. In some countries the maximum might be limited to 40 to 60 places, the decision being based on local circumstances.

Although financial and staffing considerations might limit the initial operations, it would probably be preferable to plan the centre on the basis of the desirable maximum capacity and see how far funds could be obtained for this purpose.

In planning the centre, consideration should be given to the following:-

- (1) the maximum number of rehabilitees at any one course;
- (2) whether or not it would be residential;
- (3) if residential, what hostel or other accommodation would be necessary;
- (4) canteen facilities required in a non-residential centre;
- (5) what medical examination and nursing facilities (if necessary) are to be provided;
- (6) the types of work testing to be introduced;
- (7) what equipment would be required;
- (8) the availability of the necessary professional staff (e.g., social worker, psychologist, etc.);
- (9) how many clerical and ancillary staff would be necessary.

### *Physical setting*

The building at the centre must be so designed or adapted to cope with special needs of the disabled. They must be accessible to those who are in the wheel chair. Buildings should preferably be single storey with wide doors, avoiding stairs or steps. Toilet arrangements should be modified to allow for their use by wheel chair cases; ventilation, heating, fans or air-conditioning should be provided according to climatic needs; workshops should be built away from the administrative section and the workshop should be covered. Workshops should be sufficiently large to house the equipment and to facilitate

training and supervision; where the use of noisy machinery such as that used for wood working, weaving, or machine operating is involved, some sound-proofing should be attempted, particularly where concrete is used as the building materials; a medical examination room, equipped to give first-aid in case of accident or illness, should be available; a large room for use as a gymnasium should be provided; it might also be used as a recreation room or a canteen if equipped with kitchen facilities; alternatively where climatic conditions permit, an open-air space might be used for the gymnasium aspects; adequate office and storage accommodation should also be provided.

If the centre is residential, care must be taken to see that in addition to the bedrooms or dormitories and toilet facilities necessary for the trainees, similar accommodation must be provided for resident staff. Kitchen, dining and indoor and outdoor recreational facilities and rest rooms would also be necessary.

In the case of a vocational assessment and work preparation centre, residential accommodation should be built within the centre compound, if space permits. This would have the advantages that:

- (1) rehabilitees would be under control during the whole period of attendance;
- (2) they could also carry on with work preparation activities outside normal working hours if they wished;
- (3) there would be economy in staff as the centre manager, by delegating some of his duties, could supervise the whole complex and it would not be necessary to appoint an officer in charge of the residential accommodation.<sup>8</sup>

If the centre is to serve a rural area in which agriculture and horticulture, cottage industry and or handicraft work predominate, the basic equipment would be relatively simple, consisting mainly of agricultural implements, machines such as weaving or knitting machines operated by hand and hand tools appropriate to the various handicrafts. On the other hand, if the centre serve an industrial area and proposes to assess capacity in wood working, light or heavy engineering work and similar type of work, the emphasis would be on more elaborate and expensive machine-operated tools.

It must be borne in mind that the centre is designed to ascertain the capacity of individual disabled persons to perform different kinds of work and not to train them fully to do the work. If required, this

would be done elsewhere. Whilst the work done should be productive in order to maintain the rehabilitee's interest, it would not generally be necessary to provide a lot of sophisticated equipment to do this. Much of the modern machinery used, for example, in wood working and metal working, is expensive, and smaller types might be obtained which would be suitable for vocational assessment purposes.

In some cases, particularly in less sophisticated centres, it might not be necessary to spend much money on equipment. In some countries employers have co-operated with centres by giving them sub-contract work under arrangement through which they provide the materials, tools and equipments; the centre makes the articles and the employer collects them periodically and pays for the service given by the centre. Inquiries with employers in the area of a particular centre might find some who are willing to help and materially reduce equipment costs.

### *Staff Requirements*

Under ideal conditions a vocational assessment and work preparation centre, to be developed in isolation from medical rehabilitation and vocational training services, with a maximum capacity of one hundred rehabilitees, would normally require the following staff:

#### **Specialists and Technical Staff**

- Centre manager
- Centre doctor (part time)
- Workshop manager
- Psychologist
- Social worker
- Selective placement officer
- Workshop instructors (for each section of activity)
- Remedial gymnast
- Nurse

#### **Ancillary Staff**

- Administrative and record officer
- Clerk/book keeper

Clerk/storeman

Typist/telephone operator

Driver (if motor or other vehicles used)

Cook, kitchen-hand and waitress(es)

Labourers/messengers (three)

Cleaners

Common characteristics of good rehabilitation staff may be summed up as follows:-

- (1) problem-solving attitude—not problem cases themselves;
- (2) co-operative—with a team spirit beyond professional limits;
- (3) constructive—inventive—alert;
- (4) inspiring, creating motivation and confidence in fellow staff members as well as in clients;
- (5) Persistent, with a capacity to tolerate failures, as they may not always be avoided, willingness and ability to benefit from mistakes.

During the selection procedure for any staff member a rating scale covering the following personal qualifications can be applied

- (a) motivation for actual assignment;
- (b) emotional stability and effective intelligence;
- (c) energy and initiative;
- (d) Social relations and ability to co-operate within a team;
- (e) Observation and effective communication;
- (f) ability to convince (public relations skills);
- (g) integrity combined with willingness to be tolerant towards people whose opinions or way differ from their own.

The relative value of the different qualities mentioned above would depend on the actual function to be covered and the combination producing the best performance in terms of rehabilitation results.<sup>9</sup>

In most developing countries it would not be practicable to obtain all the staff mentioned above at the start either because they are not available or because of budgetary limitations. A good deal of

improvisation would be necessary and the centre might only start with a limited number of staff and rehabilitees.

### *Team Work*

No centre of this kind can be successful unless the specialist and technical staff work together as a team to assess the abilities of the individual disabled person and prepare him for work. Whilst they maintain daily contact with one another and with individual rehabilitees, their main contact is in the periodic case conferences which enable the many aspects of individual cases to be studied collectively by the specialists.

Creating and maintaining a proper team spirit is not always easy. The centre manager has to maintain a balance within the team, arbitrate on differences in opinions and methods and generally become a harmonizing factor on technical differences. He has, however, to make the final decisions after listening to his colleagues' opinions.

It would be desirable, therefore, to examine the individual candidate's temperament, sense of vocation for the work and tried or potential ability to work as a team member, when posts are being filled. Whatever other qualifications a candidate might have, if he is not interested in working with, and for, disabled persons and is unlikely to make a satisfactory team worker, he should not be appointed to any of the posts for which other qualifications are required. It might not be possible to find any one ideally qualified. The best possible alternative should be selected and trained in aspects in which he is deficient.<sup>10</sup>

### *Workshop Organisation*

Most of the vocational assessment and work preparation of the rehabilitees is done in the workshops. Answers to the following questions are consequently of considerable importance.<sup>11</sup>

- (1) What kind of work ought to be provided?
- (2) How should the work be obtained?
- (3) How should it be organized?
- (4) What relationship should there be between the instructor and the rehabilitee?
- (5) What principles should govern the transfer of the rehabilitees from one job to another?

The workshop manager is responsible to the centre manager for the running of the workshops and he has a vital part to play in relation to all these questions. It is a basic principle of a centre of this kind that the working conditions in its workshops resemble, as realistically as possible, normal industrial conditions, producing commercial products at a reasonable speed, so that the work can be distinguished clearly from merely diversionary handicrafts. The workshop manager is responsible for creating this kind of atmosphere.

The intake rate would be affected by a variety of factors—capacity of the centre, availability of applicants, premature terminations, etc., but the aim should be to keep the daily occupancy as close as possible to the capacity of the centre in order to maintain the rehabilitative effect of the atmosphere of busy workshops.

It is generally considered that a 6 to 8 weeks' course would be adequate for the majority of rehabilitees but no rigid rules as to the duration of courses should be laid down and the length of any rehabilitee's stay in the centre should be determined by his individual needs and circumstances.

In some cases, for example, where the rehabilitee recovering from illness or accident only needs physical reconditioning and a little time to re-acustom himself to his tools and machines and regain the normal tempo of work before resuming his former job, a short course of three to four weeks might be all that is necessary. As soon as it becomes clear that he could resume work, he should be relieved from the centre so that he could rejoin duty with his employer. Similar considerations would apply where a rehabilitee has found work for himself and it is agreed that the job is suitable for him.

At the other extreme would be the severely disabled rehabilitee who has never been previously employed or has been out of touch with working conditions for many years. In such cases, twelve weeks or more might be necessary to bring him up to a normal working standard.

Emphasis has been placed on the need to provide real work and not diversionary activity. The main reason for this is a psychological one in that the value of production work lies in the attitude it engenders. Where the rehabilitee is merely making an article for the sake of something to do or as a remedial exercise, the tendency would be to draw his attention to himself and he would feel he is doing something just to pass his time until he can return to work. On the other hand,

when he is engaged in production work the tendency would be for him to be absorbed in the work, a much better attitude for him to overcome his handicap and make his way in the working world. This would be particularly so where production orders have to be completed at an early date.

In deciding on the type of work to be sought, the following factors should be taken into account:

- whether the centre is in an industrial or rural area the work obtained must bear a direct relation to the occupations carried on in that area;
- rehabilitation should not be subordinated to production work- the work should be selected for the rehabilitee not the rehabilitee for the work.

Since training for skilled jobs is not normally a function of a vocational assessment and work preparation centre, the work to be provided should be unskilled or semi-skilled or of a type which could be broken down into such kinds of jobs. For example, the centre might make small parts of a bigger article which would subsequently be finished by the manufacturer or a vocational training centre.

One of the objectives of allocating a rehabilitee to a particular job is to test his capabilities, possibly to confirm the results of such paper tests as it had been possible to conduct, or to check his suitability for vocational training in a particular trade. Special exercises or tests of speed might be used for this purpose but they should generally be made on actual production work. If the work is local sub-contract it might be possible to test the rehabilitee on work of the same sort as that in which he might ultimately be placed.

The widest possible assortment of production work should be sought. If the centre is able to purchase small machines such as bench drills, metal and wood turning lathes, etc., these operations could be introduced where employment opportunities are likely to be available. Inspection of the products would also provide a means of checking the capacity of sedentary or semi-sedentary rehabilitees whose main hopes of resettlement lie in simple viewing jobs.

### *Finding Production Work*

Production work would normally be obtained from one or more of the following sources:-

- sub-contract work for outside firms, hospitals and similar institutions;
- work for government departments;
- items for use within the centre and the attached vocational training centre, if there is one;
- producing articles ordered by individual customers;
- articles made for exercises may be sold where they have a sales value.

It would be better wherever possible, to base the production work of the centre on sub-contract work because this would provide real work for which delivery dates would usually be fixed, although there might not be the hard-and-fast limits required in a factory.

### *Organising the Work*

The division of the workshop into sections would depend on the type of work available and the stage of development the centre has reached.

#### **(a) Fully Developed Centre**

In a fully developed centre with a maximum capacity of 100 rehabilitees the following seven sections would generally be required, provided that employment opportunities in that type of work are available:

- allocation;
- wood work;
- bench engineering (hand tools);
- machine operating;
- light assembly and miscellaneous work;
- clerical;
- gardening.

This arrangement would require seven instructors and if possible it would be advisable to have a "floating" instructor to cover leave, sickness and other absences. Failing this, it would be an advantage if some of them were capable of taking over a section other than their own during such periods.

An instructor can only give adequate individual attention and guidance to limited number of rehabilitees and it is suggested that each section should be large enough to provide for 10 to 15 at the most. The numbers in each section would fluctuate from time to time according to the availability and needs of the rehabilitees. As the allocation work is very important it is examined in detail below:

*(i) Allocation Section*

All incoming rehabilitees would join this section, sometimes called the intake or initial induction section. Since rehabilitees would be leaving every week, the intake would normally be about 12 per week and the new intake would remain in the section for the first week of the course.

The reason for the adoption of this method of introduction is to facilitate the first stage of rehabilitation—finding out what liabilities were retarding resettlement and what assets he had which could hasten it. The centre team must get to know the individual before it can ascertain his needs and adopt tactics which would suit his case. This would be more easily achieved by keeping the new-comers together than by scattering them throughout the sections.

The centre manager or the social worker would give an initial welcoming and explanatory talk on the objectives of the centre, its methods and rules. Following this, the facts recorded on the rehabilitee's personal papers would be checked during the course of a series of interviews with the centre team members. The doctor would give an initial medical examination during the course of which he would check that any prosthetic appliances were suitable and in good order, and would ask the instructor to check that the individual knew how to use them. The other members of the team would deal with their own particular aspects in order to form preliminary impressions of the new entrant and his needs before the first case conference. This process might take up to a day-and-a half following which the new entrant would spend the rest of the first week in the allocation workshop.

To avoid conveying an impression that the section was a waiting room pending commencement of work, in the second week it should contain a sufficient variety of work to enable the instructor to form a preliminary assessment of the practical abilities of each new entrant by testing him on various jobs. In general, the types of work selected should bear some relation to the jobs carried on in the other sections

and might include such tasks as using a bench drill and hand drill, sawing and performing simple wood work operations with hand tools, assembling small parts, using a sewing machine, some elementary clerical work etc.

The Instructor in this section carries a good deal of responsibility and it is clear that he must be versatile and have a reasonable general knowledge of the various jobs provided.

He would be the new entrant's first real contact with the working life of the centre and his actions might well determine, in these critical first few days in the centre, whether the new entrant would stay on in the course. He should remember that the new entrant would be forming his own impression of the centre at this stage. It is, therefore, important that he should be able to get on with all sorts and conditions of men and women, give them encouragement and sympathy. He should leave them in no doubt that they could talk to him freely and discuss any difficulties with him.

He could have received some information about their working history from the workshop manager and some details from other members of the team. He should talk to them as a group when they come into his section, telling them how long they would stay there, and what work was done in the section and how they would be reallocated. He would explain that if they did not get the work they hoped to get immediately, this was because the centre would take a little time to get to know them, to see how they tackled one or two jobs and discuss future employment possibilities with them. Following this he should get them to work as quickly as possible.

At the end of the week the instructor would report the results of the individual's activities to the workshop manager, give his views about the most suitable section for the individual and his reactions to workshop routine and discipline. The centre manager, after discussion with the whole team, would decide to which section he should be allocated. ●

### *(ii) Allocation to Workshops*

The general principles which should be applied to all allocations or re-allocations are that the rehabilitee's preferences should be followed in the section or job allocation provided there were no good reasons for not doing this. The rehabilitee should be told about changes

in allocation and the reasons for them. There would be occasion when a rehabilitee's preferences would be unrealistic and impracticable because employment prospects are poor or non-existent. They may also be undesirable on medical grounds or because the particular section was already full and his wishes could not be met immediately. If so, it would be better to tell him the reason for not meeting his wishes and get his co-operation in the decision.

Rehabilitees should not be allocated to sections according to disability without considering individual needs and preferences. The centre should provide light sedentary work in more than one section, although the most seriously handicapped might normally have to go to the light assembly section.

After the first case conference the rehabilitee should be doing work within his physical and mental capacity to which he is reasonably suited and might well stay in the same section throughout the courses. Some of them, however, might not be able to return to their former occupations and their suitability for a range of other jobs might need investigation. The psychologist would have formed some ideas about occupations within the bounds of possibility but the results of any test he had conducted would have to be confirmed by actual trial, particularly where vocational training might be recommended.

The number of inter-section transfers would be reduced if there was some variety of work within each workshop. This would be an advantage both to the rehabilitee who might not like the change and to the instructor who was already familiar with him, to see the improvements in him and provide continuity in reporting. The relationship between the instructor and the rehabilitee is most important. The longer this relationship between the two can be continued, the better. The rehabilitee should, therefore, be moved to a fresh section, when there is a definite reason for so doing.

### *(iii) Working Programmes*

The section of the centre cannot be run successfully without some kind of working programme, but it would not be necessary to draw up a detailed syllabus of the kind required in a vocational training centre.

The instructor in each section should devise a programme covering the maximum period of the course which might include the

time to be spent on the various tools and other operations of his section. It would probably be impossible to adhere to it rigidly because of variations between individual rehabilitees but it would form a working basis.

The proposed programme would be submitted to the workshop manager for agreement and, by him, to the centre manager for approval.

#### *(iv) Section Reports on Rehabilitees*

The capacity of the individual rehabilitee to undertake successfully the operations on which he has been tested is an important factor in the determination of his final resettlement plan by the centre team in case conference.

The section instructor should prepare progress reports on the individual rehabilitee's progress before each case conference and at any other prescribed intervals and submit them to the workshop manager. The workshop manager would discuss any relevant points, particularly those which arise from his own observations of the rehabilitees with the instructor and present the report at the case conference.

Individual instructors would have different methods of assessing the individual's temperament, capabilities and progress which might render comparison difficult. A standardized report form should be devised which would avoid these difficulties.

#### *(v) Time keeping*

Proper record of attendance must be maintained, in which rehabilitees would record their arrival and departure times. The record would provide a means of checking the frequency of absences and the reasons for them and also give information on which payment of allowance (if any) would be based.

#### *(vi) Safety in the Workshops*

Primary importance must be given to safety in the workshops. The responsibility for safety should be placed on either the workshop manager or a specific section instructor who should see that the rehabilitees are informed both orally and by wall notices about the safety regulations, that they are observed, and take disciplinary action

for failure to comply with them. The safety measures adopted would include:

- provision of adequate safety devices for machinery and insistence on their proper use at all times;
- well marked, strictly maintained free aisle space;
- clean floors free of obstacles which might constitute hazards to staff and rehabilitees;
- orderly arrangement of all materials and objects in the workshops and stores;
- careful stacking of materials to eliminate the possibility of falling objects;
- regular safety instruction on the proper methods of lifting, carrying and bending; and
- adequate first-aid service given by the nurse or, if there is no nurse, by a designated member of the staff with first-aid knowledge who would be immediately available. Copies of the general working rules of the centre should also be posted in each section.

### **(b) Centres in Rural Areas**

While the principles enunciated above apply in general to centres in rural areas, the types of work provided and the organization of the sections should be different.

Many developing countries are pastoral and/or agricultural with a limited industrial growth of recent origin. In such cases disabled persons must be resettled in their home environment and many would have access either to their own land or of a relative or land obtained free or rented from the chief. Emphasis should therefore be placed on a rural programme designed to make them self-supporting at the village level.

This might well be achieved by providing facilities for learning small animal farming (poultry, goats, pigs, sheep, etc.) rural house building, home tailoring, shoe and sandal making and rural crafts such as carving, weaving, leather work, bags, basketry, dress ornaments, table lamps etc.

Contrary to the general practice it would not be uncommon to find that assessment and vocational training are combined in one centre, the objective being to produce a village handy man who would, subject to his performances and residual capacity, learn three or four trades.

The sectional organization of the workshops would depend on the particular circumstances of each cases.

### *Case Conference*

The need for team work is greatest in the case conferences which decide the rehabilitation plan for each individual and which secure his agreement to it.<sup>12</sup>

#### **1. First Case Conference**

Each new entrant, while he is in the allocation section during the first few days of his course, should be examined by the centre doctor, interviewed by the social worker and the placement officer, tested and interviewed by the psychologist and observed at work by the workshop manager.

The team members may exchange information about each case informally. The first objective of the case conference is to bring their individual impressions and information together so that the rehabilitation problem can be seen as a whole. In doing this the team would have to:

- decide whether the new entrant is likely to benefit from the course (if not, the course should be terminated; for example, if it is found that, contrary to the impression formed at the selection interview, he is not yet fit enough medically);
- try to determine what exactly had so far prevented his resettlement;
- form some idea of what the ultimate recommendation might be to enable the placement officer to explore placing prospects tentatively with the local placement officer, other organizations or employers;
- Plan the cause accordingly.

Each member of the team would present a report on his findings and the case conference discussions would go far beyond questions

of fact about workshop performance. They must include other factors such as medical considerations, home background, placement prospects or lack of them, doubts about mental capacity to learn a semi-skilled or skilled trade or even to work at all.

If the centre manager is to be an efficient chairman, he must, while relying on the other members of the team to give details of each case from their own viewpoints, have sufficient personal knowledge of the individuals discussed to enable him to reconcile differences of opinion, if necessary, and guide the discussion to a practical conclusion. He should therefore take every opportunity of getting to know something about each of the new entrants through informal talks with them in the workshop, or, if he considers it necessary, by interviewing them privately.

In practice it is not usually necessary for the workshop instructor, the nurse and the remedial gymnast to attend the conference as they will have briefed the workshop manager and the doctor about any special information the case conference should know. It would be advisable to let them sit in from time to time so that they could become familiar with the procedure and it might be necessary for them to attend while a particularly difficult case is being discussed.

The duration of the case conference is necessarily limited and experience would determine how many cases could be dealt with in a session of, say, two hours. It is the Chairman's duty to see that each case is thoroughly discussed. He should try to prevent team members from repeating information already known to all of them and see that straight-forward cases are disposed of quickly so as to leave adequate time for discussion of the more difficult ones.

The best way of dealing quickly but thoroughly with the case list would be to have a recognised order of speaking so that the facts are considered in as logical an order as possible and repetition avoided.

Usually, the doctor should be the first to give the team an account in layman's language of the expected course of the illness or injury and its restrictive effects on employment. The social worker could then draw attention to any circumstances in the social background affecting resettlement. The placement officer could provide a brief assessment of the employment record (if any) together with his impressions of the rehabilitee as a placing proposition. Looking at the case from the standpoint of a possible future employer, the workshop

manager would report on performance in the workshop, for example, on his ability to use tools, rate of output achieved, attitude and behaviour at work, and mention any absence and instances of bad timekeeping. The psychologist (or, if one had not been appointed, preferably the placement officer) could give the results of his interviews and such tests as he had been able to carry out and, on the basis of these, a provisional view of what the rehabilitee's vocational future might be.

After the presentation of the reports the rehabilitee's case would be discussed in detail. The provisional workshop allocation and rehabilitation programme would be agreed upon by the team after considering any objections any member of the team might have from his own standpoint to the proposed course of action.

The rehabilitee, who would not usually have attended the case conference unless some specific point had arisen which required his attendance, should be told about the result of the case conference by the psychologist or the workshop manager. The latter would also inform the rehabilitee's instructor about the details of the proposed working programme.

## **2. Interim Case Conference**

The final task of the first case conference would be to decide whether it would be necessary to consider the individual rehabilitee's case again before the final case conference held towards the end of his stay at the centre. No hard and fast rules can be laid down as to whether an interim case conference should be held about any particular case.

In straight-forward cases an interim case conference would not be necessary. Where the rehabilitation programme appears to be beset with difficulties, and with the available information, the team is not clear about its ultimate course, or where, on the other hand, it is doubtful whether resettlement in employment would be possible, it would be desirable to review the case again.

Social, vocational and placement problems might exist which would take some time to solve. The doctor might not be satisfied with the ability of the rehabilitee to undertake full-time work. The rehabilitee's attitude to work might be discouraging.

Prompt action should be taken by the appropriate officers to clear the difficulties arising in the course of the programme. The social worker might have to clear points about home background either by a house visit or by securing help from a social welfare agency. The placement officer would have to ascertain what placement prospects exist in the proposed occupation. The workshop manager and the psychologist (if any) would brief the individual and the workshop instructor where a change of allocation is considered necessary. The doctor might wish to obtain a specialist's opinion. The enquiries should be thorough and aimed at completing the full picture of the rehabilitee's position and special difficulties.

The staff would learn much more about the rehabilitee during the second and third weeks of his course than in his first week in the allocation section, particularly about his response to rehabilitation techniques.

The first case conference should fix the review date, in the light of the circumstances of each particular case and not in accordance with a customary pattern or a fixed period in the centre. In general, it should be held about two weeks after the first case conference, but the date fixed should be regarded as provisional only and there should be no hesitation about changing it where circumstances so dictate.

The aim of the interim review is to determine the final shape of the rehabilitation programme and it might also decide the length of the rehabilitee's stay in the centre.

The comments above would be applicable generally to the larger, well staffed centres. In small centres with a limited maximum capacity and a limited staff it would probably be preferable to deal with interim case conference on a more informal basis, covering the points which had arisen on an "ad hoc" basis between the staff concerned and the centre manager.

### **3. Final Case Conference**

Before any rehabilitee leaves the centre, his case should be reviewed in a final case conference. This should preferably be held about two weeks before it is anticipated that his rehabilitation would be completed. This arrangement would give the placement officer a reasonable time to follow up his earlier inquiries and to secure the

rehabilitée's placement in a suitable job, or to arrange this with a local placement officer (where there is one) in a more distant area.

It is a principle of rehabilitation work that each rehabilitée should be resettled as quickly as possible. This is not only because most of the benefits of the course might be lost if there was a long gap between completion of the course and subsequent employment but also because his place at the centre could be filled by another disabled person who would be in need of these services and had to wait for them.

The date of the final case conference should, therefore, be fixed on a flexible basis bearing in mind the needs of each individual case—at an early stage in straight-forward cases requiring a short period of physical reconditioning prior to returning to a former job; at a later stage in cases where a rehabilitée recovering from illness or injury could not return to his former occupation. Where a rehabilitée is making slow progress, further time is required before it could be decided, whether he could ever be able to work in the suggested occupation or even be employed at all.

The most important feature of the final case conference is the final report on, and the recommendations about, the future employment of such rehabilitée who is due to leave. This report should be drafted in advance and agreed at the case conference. Where a psychologist is in post he would normally prepare the draft taking into account the final reports of the other members of the team. Since it is unlikely that such an officer would be in post in many developing countries – even one working on a part time basis of a few hours per week would probably not have time to complete the form – the report could be prepared by the placement officer. Before the case conference the officer responsible for drafting the report would normally wish to interview the rehabilitée again, if only to ascertain that the provisional or possible recommendations would be acceptable to him.

The importance of the contents of the final report cannot be overstressed because it is the basis on which the placement officer must seek employment for the rehabilitée. If the recommendation was not clear, much of the vocational assessment and other work of the centre might be lost. The report would normally contain information about:

- impression formed and physical condition, including details of any working environments to be avoided;

- social background and responsibilities;
- educational and occupational attainments;
- intelligence, abilities and workshop performances;
- adjustment to disability and disposition;
- attitude towards work and aspirations.

The report would conclude with detailed recommendations about the type of employment considered to be suitable and examples of likely jobs; the type of subsequent vocational training (with alternatives) to be taken if the rehabilitee could be considered suitable for training as a semi-skilled or skilled worker and any other information likely to assist a placement officer.

The report would be passed to the appropriate placement officer for immediate action. Where vocational training is recommended the placement officer would arrange for the rehabilitee's transfer to the appropriate vocational training section if training is conducted in a centre linked to the vocational assessment centre. If not, the placement officer would have to seek a place for him either with an employer or with some other vocational training institution.

Finally, the case conference would decide the terminal date of the course. Before the rehabilitee leaves, the centre manager would have a final meeting with them either as a group or in an individual interview where he feels it would be desirable, for example, in a case where finding suitable employment was proving difficult and the rehabilitee was leaving before he had been placed.

This final talk should be designed to encourage the rehabilitees to face their first employment interviews and subsequent employment with confidence, describe the efforts which would continue to be made for those who had not yet obtained employment and assure the rehabilitees of the continued interest of the centre staff in their future progress. It should also give the rehabilitees an opportunity to make criticisms of or suggestions about the methods used in the centre.

### *Follow up Procedure and Case Conference*

Since the centre has a continuing interest in the rehabilitees after they have left, a follow-up system should be devised to ascertain the result of the centre's resettlement activities. The reasons for and the methods of the system should be explained to rehabilitees by the

placement officer, workshop manager or an instructor before they leave, if this has not already been done by the manager in his final talk.

The first follow-up inquiry should be made three months after the rehabilitee's termination at the centre, followed by a second after six months, should the results of the first follow-up indicate that this was necessary, for example, if the rehabilitee had not yet found employment or was in process of changing his job.

The follow-up method usually adopted in highly developed countries is to send a letter of inquiry to the rehabilitee asking him to say what his job is, whether he is settled in it or not and if not, why not. In developed countries the following methods would probably prove to be more practicable:

Where there is an existing employment service or some other employment agency, the centre placement officer would write to the appropriate local officer and ask him to interview the rehabilitee and report the position;

Where there are no such facilities and placements are effected by the centre directly, the centre placement officer could obtain the required information through informal talks with the employer and the rehabilitee during the course of his normal contacts with employers.

While the follow-up system is valuable in ensuring that resettlement has been effected, the information obtained enables the centre to judge the effectiveness of the centre in the light of the results obtained. It would, therefore, be good policy to hold periodic case conference to discuss the latest batch of follow-up reports received and examine the results obtained in relation to the recommendations made at the final case conference.

An attempt should be made to decide in each case whether resettlement could be regarded as satisfactory or not, whether any useful lessons could be learned about deciding whether to accept or reject particular types of cases and whether any changes in the centre's procedures, workshop methods of framing recommendations etc., appeared to be necessary. The centre manager should also bring the most interesting cases, particularly the unsuccessful ones, to the notice of instructors at special group meetings.

This case conference and the related group meetings of supervisors could also discuss the periodical statistical information about the centre's activities and the reasons for any variations. Copies of statistical information should be circulated to all staff.

It might often be useful to prepare a simple weekly or fortnightly list of placements effected which would keep the centre staff abreast of the results and, to some extent, of the employment situation in the area. The lists might also be displayed in the centre to encourage those rehabilitees who had not yet reached the placement stage.

Each major employment area shall have a centre where the disabled would be trained in good work habits, being assessed over a period of time in a realistic work situation and then being placed in the category of employment or occupation most suited to their individual needs and abilities. It is most essential for this type of running assessment that the work situation is truly representative of and realistic to average normal conditions of employment. They would therefore operate as proper factories or work places with all the normal discipline expected in such work-places. They should undertake very simple contract work involving a minimum of machinery, but a maximum of dexterity in the simple tasks performed. Workers would be in receipt of a disability grant and would be able through their own efforts, to earn the maximum additional income.

At the conclusion of the training and assessment period, which requires at least six months for those very considerably handicapped people, they would proceed either to the open labour market or to specialized training either at educational institutions or "on the job".

It must be emphasized that this type of training is not vocational training which should be done by a properly organised normal training institution, but is training in good work habits, something quite outside the experience of many handicapped people coming into the work situation for the first time or after a long period of medical rehabilitation. Thus in such an institution, it is particularly necessary to ensure:

- (i) Good time keeping and attendance and a tolerance of the normal discipline necessary to a working environment.
- (ii) the production of useful work, preferably sub contracts, where a proper standard of good work has to be achieved, slowness to work being the noticeable difference due to the handicap.

- (iii) the ability to get to work—It is essential for workers to find their own way to work and ability to achieve this must be regarded as part of the training. It is useless to fetch handicapped people to an institution, if at the end when they might go out to employment, they are still unable to get themselves there.<sup>13</sup>

The most decisive factor in the process of adjustment is the motivation for integration into normal society and the determination to achieve normal position among the able-bodied, in spite of the individual handicap. Many of the rehabilitees have no previous work experience and most of them will have to adjust to new and completely strange conditions when introduced to a competitive work situation. Preparation for work, therefore, will include both the acquisition of the skills and knowledge necessary to carry out that particular job and the training in social skills required to face new and unfamiliar situations in a reasonable manner.<sup>14</sup>

Some jobs may call for particular personality features. Some of the general qualities regarded highly by employers, personnel managers, and foremen alike are:

- (1) good time-keeping
- (2) self-discipline
- (3) perseverance
- (4) concentration
- (5) reliability

## **Vocational Training**

Specific and comprehensive vocational training may be imparted either in an existing workshop or industry or in a special vocational training centre.

### *On the job training*

Unless employers are prepared to employ some suitable disabled persons, even though plenty of able-bodied persons are available, little progress will be made in the development of vocational rehabilitation services, the ultimate object of which is to ensure that those who suffer from some form of physical or mental handicap become working members of the community. In circumstances of this

kind they would be more likely to be willing to employ disabled persons who could undertake semi-skilled and skilled work rather than those who had only limited capacity and could only perform more mental work.

Employers themselves have a role to play in the vocational training of the disabled. Many jobs of a semi-skilled nature require a relatively short period of training before the workers become proficient. For example, worker employed in a modern factory using a conveyor belt system could, in the course of a few weeks, become proficient at sewing collars on a shirt, inspecting beer or soft drink bottles for cleanliness and purity of contents, performing one operation in the assembly of a radio set or the making of electric batteries.

Training for this kind of occupation is given on-the-job by the employer; all he needs to know from the placement service is that the vocational assessment process has indicated that the disabled person he is being asked to employ could use a sewing machine, or concentrate his attention on a specific object, or was sufficiently nimble-fingered to be able to position small parts of a larger assembly such as a radio set.

On-the-job training could be given equally well in less modern workshops and factories, particularly where proficiency in the occupation could be attained in a comparatively short period (e.g., six month or less). Employers should be encouraged to give the training themselves wherever it is possible and so avoid the expense of establishing centres to cope with short-term training of this kind.

In some countries it has been found helpful to offer the employer some inducement to take in and train disabled persons. For example, where trainees in a vocational assessment of training centre are given cash allowance to maintain them whilst undergoing training, an allowance on similar lines might be paid over an agreed training period to the employer who was training the disabled person himself. This might be done in several ways, for example:

- the employer might pay the worker the normal starting wage for the job and receive a subsidy equivalent to the training allowance which would have been paid to the worker if he had been undergoing training in a centre, provided that the subsidy did not exceed the starting wage;
- in place of the fixed subsidy, the employer might receive a subsidy on a diminishing scale as proficiency improved,

e.g., 90 per cent of starting wage for first month; 80 per cent for second month; 60 per cent for third month and so on;

- the employer might pay no wages while the trainee received his training allowance throughout the agreed training period.

Arrangement of this kind appeal to employers, but the extent to which these would be practical would depend entirely on what funds are available to meet the cost of the subsidies or allowances.<sup>15</sup>

Certain trades can best be learnt in a practical way through training and work experience on the job itself. The trainee can readily acquire manual skills, knowledge, experience and the understanding of a trade by working in actual factory conditions and surroundings. The newly disabled person goes through a short period of training in an adjustment centre after which he is sent for further training on the job in an industrial establishment. This on-the-job training is for a relatively short period and less costly, and usually results in permanent employment for the disabled person at the industrial undertaking where such training is given. The person has also additional advantage of earning while learning.<sup>16</sup>

It will always be desirable to discuss proposals for the vocational training and employment of disabled persons with the appropriate trade unions and with the national federation of unions if there is one. Such action would not only keep them fully informed but should also ensure that no obstacles would arise in securing the admission of disabled persons as full members of the appropriate union.

Some trade unions have agreements with employers that in the event of redundancy "the last to come is the first to go". An effort should be made to persuade both sides of industry that this kind of rule should not be applied to disabled persons. This is particularly important in a country in which legislation require employers to employ a fixed percentage (quota) of disabled persons because application of the rule could lead to employers failing to satisfy the obligation placed on them by the law.

It should also be remembered that the advice and assistance of trade unions in drawing up training course syllabi and in selecting trainees for entry into specific trades, are invaluable.<sup>17</sup>

## Vocational Training Centres

### *(a) Training Standards and Periods of Training*

When it had been decided that building a special training centre was inevitable, the situation should be discussed with the appropriate employer's associations and trade unions. The main points to be settled would be:<sup>18</sup>

- (1) in what trades were there shortages of skilled labour ?
- (2) how many trained disabled persons could be absorbed annually ?
- (3) to what standard should they be trained; and
- (4) how long should the training period be ?

Information on the first two points should be readily obtainable from these discussions, although it should be remembered that it may become necessary to abandon one trade and substitute another for it owing to changing economic conditions. Making decisions on the other points would present more difficulty.

Of those trades in which there is a steady demand for labour, carpenters, cabinet makers, welders, machine setters and sheet metal workers would normally acquire their skills and become highly-productive workers through a period of apprenticeship or other form of training lasting three years or longer. Dress makers and machine operators would become proficient in a shorter period.

It would be impractical to attempt to train disabled persons in a special centre for as long a period as three years because once the particular courses are filled to capacity the only further intake for three years would be the small numbers required to replace drop-outs.

The aim of the centre should be to conduct training sufficient to give the trainee a sound grounding in the basic elements of the chosen trade on which his employer could build until the trainee becomes a fully skilled worker.

The standard which an employer would require before he would be willing to engage the disabled person is clearly a question for his decision and agreement should be reached on this point with employers of workers in the occupation selected, and the associated trade unions, before training is begun.

It is quite obvious that for a training centre, it is neither possible nor appropriate to impart training in specific jobs. If this were done, training centres would themselves become industrial establishments. What is needed is to impart general training which would develop basic skills of the client to be adopted to specific situations when the need arises. Wherever it is not possible to set up such separate training centres, advantages be taken of industrial training institutions for organising such courses periodically for the handicapped.

Such training should also familiarise the client with the purpose, nature and methods of operating the equipment which he would have eventually to operate or the knowledge of which would enable him to understand similar other equipments.<sup>19</sup> It is not envisaged that the client should be thoroughly acquainted with all the machines from the point of view of their technicality, but should have the basic concept of machines which he might be required to operate or handle.

It is an admitted fact that disabilities like, blindness, deafness etc., constitute a total barrier to entry into many a profession. Training centres could develop only general skills by giving basic training in some of the useful vocations.

It is, however, essential to diversify training programmes as much as possible rather than duplicating institutions on exactly the same pattern everywhere. Such a diversification would ensure entry of the blind in many and diversified vocations in competitive employment.

### *(b) Location*

When it has been decided that there is a need to establish a separate vocational training centre for disabled persons, the first question which arises is where it should be sited. The decision depends on whether it would be built in isolation or in conjunction with other rehabilitation facilities and, if the latter, what vacant land was available.<sup>20</sup> For example:

if it is to function in conjunction with a hospital which has vocational assessment and work preparation facilities attached to it, it should be sited alongside those facilities if vacant land is available;

if land is not available, a site as close as possible to the other facilities should be sought;

Similar considerations apply if it was to be associated with a vocational assessment and work preparation centre not associated with a hospital;

if it would be built in isolation because vocational assessment facilities were not available, a site should be chosen as near as possible to an industrial area or within easy reach of available employment in agricultural or rural areas.

### *(c) Construction and Equipment*

Reference has already been made in this chapter about the establishment of a vocational assessment and work preparation centre. In general, the remarks apply equally to a vocational training centre, but there are some special features which should be taken into account, for example:<sup>21</sup>

- the machinery for use in this type of centre would be larger and heavier than that required for vocational assessment purposes, particularly if woodworking and metal trades were to be taught;
- the lay out should be carefully planned to allow adequate room for free movement round the machines;
- floors should be designed to prevent the possibility of trainees slipping on them;
- if electric power is to be used, the cables connecting the supply to the machines should be placed under the floor to avoid hazards to the trainees;
- it would not generally be necessary to have a medical examination rooms but a rest room with first-aid facilities should be provided;
- the office accommodation required would depend on whether or not the centre was being run in association with a vocational assessment and work preparation centre;
- storage accommodation might need to be bigger because spare parts and more expendable timber and metal would be required;
- unless training in agricultural and horticultural work, animal husbandry (e.g., pigs) or poultry-keeping is undertaken, a plot of ground for this purpose would not be necessary.

#### *(d) Residential Vocational Training Centres*

If it is necessary to provide residential accommodation, it is suggested that in the case of a vocational training centre, this should take the form of obtaining lodgings or other accommodation outside the centre rather than building a hostel or similar living facilities within the centre. This is because the trainees would be trained to work in specific jobs alongside their fellow able-bodied workers and the sooner they became accustomed to the life they would have to lead when they start work on leaving the centre, the better. In this way, too, the cost of building, supplying and maintaining hostel accommodation could be avoided.

#### *(e) Staffing the Centre*

The staff required for a vocational centre would differ to some extent from that required for the vocational assessment and preparation centre.

It would not normally be necessary to employ a psychologist, a social worker or a remedial gymnast. Arrangements should be made with a doctor to attend in case of need and a nurse should be available to give first aid in case of accident or illness. If any social problems arose assistance might be obtained by referring the trainee to a social welfare department or organisation which should be able to solve them.

Where, however, the vocational training and vocational assessment and preparation aspects are linked in one centre, the doctor, the nurse, the psychologist and the social worker would be able to cover any cases arising in any of sections. It would also not be necessary to have two placement officers.

The basic qualifications and duties of the necessary staff would be similar to those required for the vocational assessment and work preparation centre except in the case of the workshop instructors.

The instructors would be giving basic training in a specific trade and must, therefore, have had a proper training in the trade, which should include apprenticeship on sound modern lines, some years' subsequent work experience, and the necessary skill to instruct according to an accepted syllabus.<sup>22</sup>

### *(f) Working Hours and Holidays*

The principles about working hours set out for the vocational assessment work preparation centre apply equally to a vocational training centre. The situation in relation to holidays is different.

Basic vocational training is usually given over a fixed period. There are, therefore, fixed intake and departure dates and it would be possible to close the workshops at the end of a course not only to allow the staff to take leave but also to enable any major overhauls and maintenance to be carried out.

### *(g) Training Syllabi*

It would be necessary to draw up proper training syllabus for each occupation. It would be advisable to draw them up in consultation with appropriate employers, trade unions and the national training authorities. This would ensure agreement on the methods and extent of the training which is to be given.

The training programme must be sufficiently flexible to meet the exacting and varying demands of the disabled trainees regardless of the period during which they can absorb instruction. Since no two trainees will progress at the same speed, each trainee should be permitted to advance only as rapidly as his abilities permit. A trainee should progress gradually from comparatively simple to somewhat complicated operation which vary in nature sufficiently to stimulate his imagination and interest. When a trainee has acquired a reasonable amount of basic skills in any operation his training should be switched over to production conditions where he should be expected to progress at the same efficiency rate as sighted workers and meet the same standards both in achievement and behaviour and thus be fully prepared to face the future.<sup>23</sup>

### *(h) Recruitment of Trainees*

Where a vocational assessment centre is in operation the primary source of trainees would be those who, as a result of the assessment process, had been found suitable for training in one of the trades.

Where no such facilities exist possible candidates for consideration might be:

- those registered as disabled persons with an employment service;
- those referred by hospitals and departments dealing with industrial injury and sickness benefits as persons who would need retraining for a different occupation;
- disabled school leavers referred by ministries of education or private schools;
- those known to organisations working for specific types of disabled persons;
- persons making applications on their own account as a result of publicity about the centre.

Such candidates could not, of course, be accepted at face value. A good deal of information about them and their handicaps, personal preferences, etc., would probably be available in the documents, but they would have to be interviewed.

This would be a special type of interview because it would be necessary to examine in detail the individual's interests, hobbies, previous working history (if any), work preference and educational level. Ideally, specific tests for each should be drawn up in consultation with employers' organisations and trade unions; otherwise some simple kind of written test should be given to confirm the impressions which had been formed, e.g., arithmetical and simple mathematical tests, ability to read and write where the occupation which appeared to be most suitable would call for the use of these. The tests would need in any case to take account of practice with respect to the selection of vocational trainees used in vocational training centres for the able-bodied and for any particular procedures on the subject of trainee selection prescribed by the national training authorities.

Following this it would be good policy to have the applicant interviewed by an employer and a trade union official connected with the industry in which the prospective training occupation is to be carried on. They would be able to judge much better whether he would be likely to make a satisfactory worker after training. If they felt he would not, they might be able to suggest a suitable alternative for consideration by the management of the Centre and appropriate action in due course.<sup>24</sup>

### *(i) Workshop Organisation*

The workshops would be organized on lines similar to those of the vocational assessment and preparation centre except that:

- an initial allocation section would not be necessary since its functions would have been dealt with before the trainee was accepted; and
- the machinery would have to be adequate to give proper training in the trade and should, as far as possible, be of the same type as that used in industry in the country.

The centre manager or the works manager would welcome the trainees, explain the function, methods, rules, etc., of the centre and subsequently introduce them to their own particular supervisors.

### *(j) Case Conferences*

Instructor's reports and personal observation would form the basis for discussions on the progress of individual trainees and, where progress not considered satisfactory, the centre manager would have to decide whether a change of trade should be suggested or training terminated in cases where it had become apparent that the trainee would be unable to absorb any available training, or for disciplinary reasons.

### *(k) Placement*

The centre placement officer has a good deal of responsibility because it is his function to complete the whole rehabilitation process by ensuring that employment is found for the trainee at the end of his course. His precise duties depend on whether or not a government employment service exists.

Among the various types of agencies for training the disabled, a normal vocational school is the best place for the basic training in skills and technical knowledge so necessary for a disabled person to hold a competitive job in open industry and to develop the physical and mental endurance so essential to do a full day's work.<sup>25</sup> Such training along with normal persons prepares a disabled person better for normal employment in a normal environment and a disabled person so trained is more readily acceptable to employers. The instruction

given in such a school is usually thorough and consists of an organised course of study leading on to a definite job objective. Also the presence of a disabled person in a normal class, to a certain extent, stimulates competition and improves the attitude of other trainees. It should, however, be emphasised that there is a definite place for residential training centres also in any scheme for the training of the disabled as they cater to certain categories of disabled persons who are either far away from normal vocational schools or for other reasons, are not in a position to attend such normal training centres.

The training of disabled persons must be geared to the job position in the market. This is not to say that training for jobs in new avenues of employment should not be undertaken. Research and Surveys for locating new jobs should be undertaken constantly and training programmes revised accordingly. Wherever possible, a disabled person placed in a factory or undertaking should be trained to do more than one job available in that particular factory so that his services are not terminated in the event of a reduction of work in a particular section.<sup>26</sup> On-the-job training should also be encouraged whenever possible.

The most essential part of the whole process of rehabilitation is the resettlement of the disabled person, that is, his entry or re-entry into normal social life, participation in remunerative work suited to his capacity and offering the best possible use of his available skills and potentialities. Failure to achieve resettlement is not only wasteful financially, but also has the much more serious consequences of disillusioning the disabled person whose hopes have been raised through the treatment and attention given to him, and it may eventually lead to a deterioration both in his mental and physical condition.<sup>27</sup>

Adjustment training makes the client accept his disability and the limitations imposed by it. By developing his basic skills—his mobility, his techniques of daily living, his communication skills, his residual senses – by developing his vocational abilities and preparing him for job opportunities, the client's shattered confidence in himself is restored, his motivation set to work and his total personality developed to the extent permitted by his disability. The client and his family members have to be guided and encouraged to give up their negative attitudes and approaches, accept the limitations imposed by the disability and re-learn to live with them to their best advantage. The client has to realise that just as he has certain basic rights, he has also certain

responsibilities. Only if his behaviour pattern, attitudes, and approaches are correct, would he be able to work as a member of a team when he is in open employment. His social graces have to be cultivated so as to ensure him his rightful place in normal society.<sup>28</sup>

Adjustment training must be started as soon as the client is registered. It is adjustment to his own family, to his friends, to his social environment and also to his co-workers when he goes back to his job. A continuous effort must be made by the team who is working with him to try and give him an objective and a direction to keep his mind away from depression and self pity.<sup>29</sup> They should also encourage him to meet other disabled people in nearly the same situation who have already been completely rehabilitated. A cheerful and happy person whether he is disabled or not is always a source of joy. It is this type of attitude that must be encouraged amongst the disabled as he often has to work with many other people.

Initial adjustment and orientation training, followed by intensive vocational training, would lead to congenial and remunerative employment of the disabled. It is to be ensured that only fully trained disabled clients are made available to open industry. There should be no effort whatsoever in placing the disabled in open competitive employment out of sympathy or charity. Only such disabled as can give full commercial output and efficiency on simple selected jobs should be placed in open industry. Unless this is done, entry of other trained disabled in the industry would be barred for ever. The disabled handicapped clients have to ensure that their production and finish are as good as those of able workers doing similar jobs. They should give their employers the utmost satisfaction so as to retain their jobs on long term basis.<sup>30</sup>

“The noblest charity is to prevent a man from accepting charity” and the best way in which it can be done is to so train him as to help him dispense with charity.<sup>31</sup> It is towards this objective that the training of the disabled should be directed.

### Footnotes

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21. Ibid. p. 62.
22. Ibid. pp. 63-64.
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26. Suresh C. Ahuja, "A Critical Review of Existing Arrangements for Training and Employment of the Blind" *National Seminar on Vocational Rehabilitation*

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## CHAPTER XVII

### EMPLOYMENT

The right to work is basic to life. Full achievement of this right can alone confer on the disabled the boon of equality and fraternity in the community, a goal they so dearly cherish.<sup>1</sup> The ultimate aim of rehabilitation is to provide gainful employment to the handicapped keeping in view his disability, educational qualification, age and experience, if any.

Any welfare services for the disabled should enable them to become self-supporting and contributing members of society. Facilities for their education and training are of little value unless they can lead to congenial and remunerative employment.

Employment of the physically handicapped is a great social problem. Social justice demands the fulfilment of the economic objectives of the handicapped. Hall H. Popham, once President of the international Society for Rehabilitation of the Disabled has rightly stressed the need for a job for the disabled. According to him, "a job is essential not only to enable the individual to be economically self-supporting, but also to assure him his rightful place in his home and community." Thus, a handicapped person must have an opportunity to work, to achieve economic independence, to realize self-confidence and to enjoy social status. The handicapped person if not properly employed will be a greater burden in the sense that he himself is unproductive and on the top of it, consumes the resources of the society which ultimately turns him to be a serious economic liability. Society must take up this problem considering the handicapped as one of its weaker sections. Employment of the handicapped in selective

jobs is, therefore, the burden of both government institutions and voluntary organizations. <sup>2</sup>

## Significance of Work

Late Dr. Vaughan Jones, Regional Medical Advisor to the British Ministry of Labour briefly defined the task of Vocational Rehabilitation, in 1956, as restoration of the workers to industry, the citizen to society and the man to himself.<sup>3</sup> The handicapped person looks to the world of vocational rehabilitation for survival, and the only tool we can offer him is work. Work is a distinguishing mark which makes man different from animals. Work is not merely for the common good or for the service of the state, but it frees a person from dependence on others, enables him to attain fulfilment in life.<sup>4</sup>

It is a basic concept in the field of vocational rehabilitation that disabled persons should be offered an equal opportunity with the non-disabled to perform work for which they are qualified. In developed countries it has been possible to give effective meaning to this concept; rapid economic growth and industrialisation have created unlimited training and employment opportunities for the disabled which they have seized to such good purpose that they are no longer regarded as a "marginal group in the labour market, but as a valuable component in the economic development programme of their country." <sup>5</sup>

The success which attended the efforts of the voluntary organizations had an impact on government agencies, which in their turn began to take active interest in the problems of the disabled on a national basis. This interest was stimulated by;

- the need to do something for the many thousands of the disabled during the First World War;
- the need to make use of every one who could do some kind of work in the combating countries in the Second World War;
- the difficulty of meeting the demand for labour in those highly industrialised countries which enjoyed virtually full employment in the post-war period; and
- the fact that disabled persons who can become useful members of the community cease to be a burden on it.

As a result of these factors there have been two important developments. In the first place, governments have become more

willing to make budgetary provisions for the extension of measures for the rehabilitation, training and placement of the disabled in employment and for supporting the activities of voluntary organisations working in this field; secondly, employers in the highly industrialized countries have found that disabled persons employed in the right job are dependable workers, who are just as productive as able-bodied workers and, in general, less liable to change jobs, less prone to absenteeism and no more prone to accidents. <sup>6</sup>

## **Disability and Occupational Handicap**

Various types of illnesses and accidents produce disability. In many cases, however the sufferer can recover fully after appropriate treatment and return to his or her normal occupation. The disablement has been purely temporary, has had no effect on the person's employability and there is no need for any process of vocational rehabilitation.

In other cases - for example, where a person has lost a limb or part of a limb, or has been blinded or left with an impaired heart - a permanent disability remains which will affect his future working life. Those concerned with rehabilitation and future employment for such persons have to consider not the disability itself but its effect on the person's occupational capacity. Experience has shown the importance of this distinction. For example, a middle-aged wages clerk lost his right arm below the elbow as the result of a motor accident. His doctors, his employer and those concerned with his vocational rehabilitation assumed that he could no longer work as a clerk, and the man himself readily accepted alternative work as a messenger. Some months later, however, it was noted that he was left-handed and, with the artificial right arm with which he had been fitted, he was able to cope perfectly well with his normal job. He had an obvious disability but suffered no occupational handicap from it.

Thus a person may be said to be occupationally handicapped if;

- he cannot manage his former or some other occupation efficiently; or
- he would be a hazard to himself in that occupation; or
- he would jeopardise the safety of others; or
- the occupation aggravates his disability.

In order to determine whether any disabled person is occupationally handicapped it is necessary to examine very carefully the limitations his disability imposes on him and the demands of his normal job or of any other job for which he may be thought to be suitable. <sup>7</sup>

During the first Symposium on Rehabilitation in Africa held at Kampala in March, 1964, Henry Kessler of the Kessler Institute, New Jersey, U. S. A. said: "No Nation can afford the luxury of wasted manpower of the disabled. There is not only the cost of treatment, hospitalisation, drugs and surgical supplies, braces and artificial limbs, but there is also the hidden cost in the loss of productivity of the disabled. It is important to restore those individuals to working capacity and to economic independence." <sup>8</sup>

The U. N. declaration of Universal Human Rights 1948 stated that "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and material care and necessary social services and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control." <sup>9</sup>

The rehabilitation of the disabled in remunerative occupations is of paramount importance. A disabled person who is trained but remaining unemployed feels frustrated because he feels himself isolated in the society where he does not take any active part in its productive activity. This state of affairs should be removed for the handicapped. The gainful employment of a disabled person enables him to earn a decent and respectable living for himself and to maintain his family. It will also help him achieve a socio-economic independence like his more fortunate brethren in society.<sup>10</sup>

## **Selective Placement**

The goal of rehabilitation is regular and appropriate employment of the client, in industry, government, agriculture, or self-employment, at a job consistent with his residual abilities and a remuneration that is equal to what is paid to other workers in similar occupations. <sup>11</sup>

In the field of employment the term 'physically handicapped' has to be considered in relation to a specific job. While it was common in the past to evaluate the workers in terms of their general physical

fitness, it is to-day recognised that physical fitness as such must not be identified with ability to perform a particular task. It is well known that practically every worker – even an able bodied worker – may be suitable for one job and unsuitable for another. On the other hand, very few jobs require all the abilities that a person possesses. If the skills and individual capacities of the handicapped worker can be utilized to meet the demands of a certain job, his physical disability is not a handicap in respect of that job. A clear distinction has thus to be made between physical and vocational handicap. The former is an impairment of an anatomical nature, whereas vocational handicap is the lack of ability to meet the requirements of the job. A physical disability may imply limitations of capacity for some types of work, but it does not necessarily constitute a total disability to perform any kind of activity. The ability of the physically handicapped persons to be as efficient as normal workers springs from the adaptability of the human body to the demands of the situation. It is possible that the physical defect may even act as a stimulus for developing better techniques to combat the rigours of the situation. Matching of the residual abilities of the handicapped worker with the specific demands of the job is therefore of great importance. This method is referred to as “selective placement” indicating that each person is dealt with individually to find the job for which he is physically and vocationally fit. This is the term adopted by the ILO to describe the function of placing disabled in employment after training.<sup>12</sup> It also broadly covers the assessment of suitability for a particular type of employment and the preparation of the disabled, both physically and mentally, for the selected employment. It follows, therefore, that selective placement needs proper assessment of the individual to be placed and detailed analysis of the requirements of the job available. Jobs will have to be selected in accordance with the residual ability of each individual. The selective process must aim at securing employment at the highest level of skills of which the individual is capable.

Careful study of work requirements is an equally important factor in the successful placement of the handicapped in jobs, with or without job adaptation. It is, therefore, necessary to develop a comprehensive and reliable system of appraising both the capacities of handicapped persons and the demands of individual jobs.<sup>13</sup>

A selective placement service for the disabled involves using all normal services and provisions and adjusting them as necessary to the known and carefully assessed needs of each disabled person.

Selective placement follows assessment, vocational guidance and vocational training and includes three distinct processes:

- A. Knowing the worker
- B. Knowing the job
- C. Matching the worker with the job

### *A. Knowing the Worker*

Although it is generally accepted that special techniques are necessary in dealing with the disabled, this should not be taken to imply that the disabled are a race apart. From a placement point of view, the existence of a disability in one form or another is the only significant difference between the disabled and the able-bodied.

A placement officer can be seriously hampered by false ideas. Examples would be:

- i. that all disabled persons are compensated by being of cheerful disposition, or conversely, that they are all bitter and resentful;
- ii. that certain characteristics are found in persons with certain disabilities;
- iii. that persons with certain disabilities automatically have certain compensatory functions.

These false ideas about the disabled will not be allowed to creep into placement work if from the outset each person is regarded as an individual human being whose disability is only one factor in the total personality.

The following information is required for selective placement:

- i. educational background and work experience – similar information to that required in respect of the able-bodied;
- ii. personality, outlook and general attitude;
- iii. any social problems which may impede placement;
- iv. results of any special assessments, eg, vocational guidance, results of a course at a vocational assessment and work preparation centre;
- v. results of any vocational training.

The existence of a disability is a question of fact, but its effect upon working capacity will vary between individuals according to the degree of disability and the normal or potential employment of the person concerned. In general, this comes under the heading of medical assessment. Medical advice should never be overlooked without first consulting the doctor concerned, even if the disabled person feels that he is able to do more than the doctor has advised.

## *B. Knowing the Job*

The methods to be adopted will vary according to the information already available, for example, in the normal employment department where knowing the requirements of various occupations is also an important aspect of placement work. Whatever be the methods adopted in dealing with the disabled, information concerning the nature of the occupation in terms of physical effort, and the environmental conditions should necessarily be taken into account.<sup>14</sup>

The necessity of evaluating the physical and vocational capacities of the handicapped worker in terms of specific jobs has led to the development of the job analysis techniques. By breaking down the job into its component elements, the specific processes involved in it can be recorded to determine the skills and physical abilities required of the worker to perform the job efficiently and safely. An evaluation of the physical and mental capacities of the handicapped worker is needed to provide a counterpart to the job analysis. By correlating the results of these two, the worker is placed in a job for which he is vocationally and physically suited. A detailed job analysis or occupational classification, if already available, can, of course, be useful, but the work of the placement officer need not be hampered even if such a ready reference does not exist. The necessary information can be obtained by other means for example by keeping in touch with local employers, and by visits to employers for the specific purpose of the job appraisal.<sup>15</sup>

To facilitate the placement of handicapped workers in industry, a simple method of preparing lists of jobs in which people with certain disabilities can be successfully placed, is often advocated. For instance, the work of a lathe operator is studied with a view to finding out what categories of handicapped workers could be placed in this job. Such lists are of value to show employers the numerous jobs in which the handicapped can be successfully placed despite their disabilities.

A simple card index record of the various occupations appraised in this way can be an effective aide memoire, and would save the trouble of covering the same ground again by a new placement officer.<sup>16</sup> However, such a documentation system has certain disadvantages too. It often tends to lay emphasis on the disability rather than the abilities of the handicapped worker and ignore variations in demands of similar jobs in different industries. It also tends to limit the chances of employment for the handicapped to a few known categories of jobs while their potential for other jobs gets overlooked.

### *C. Matching the worker with the Job*

Successful placement work lies in the recognition that each disabled person is an individual human being with individual likes and dislikes, individual qualifications, experiences and aptitudes; that most disabled persons have more abilities than disabilities and that very few jobs require more than a few physical functions. The skill lies in matching what a person has with the requirements of the job so that both the worker and the employer are satisfied. This is the correct approach to vocational rehabilitation work; it emphasises the abilities of the disabled and helps the employer and the worker to overlook their disabilities.

Here are some basic principles in placing the disabled:

- i. the worker must be able to meet the physical requirements of the job with any modifications which may be necessary and practicable;
- ii. the aim should be to place the disabled in a work appropriate to his intelligence, educational attainments, qualifications, skills, etc.;
- iii. the worker must not be a hazard to himself;
- iv. a worker must not jeopardise the safety of others;
- v. the placement officer should avoid thinking in terms of specific jobs for specific disability groups;
- vi. the situation of the job, working conditions and environment are as important as the job itself;
- vii. segregation of the disabled in their work should be avoided if at all possible;
- viii. placing in employment should be on the grounds of suitability for the job, not sympathy;

- ix. medical practice usually requires that medical information should be regarded as confidential; the employer need be told only in lay terms of any limitations on employment capacity of the disabled or of any risks involved.<sup>17</sup>

The placement of the handicapped workers calls for the highest human considerations. Many of them have psychological difficulties, others are victims of prejudice, and still others need the friendly encouragement and guidance in choosing the right job. Emphasis on the objective side of selective placement has therefore to be accompanied by an equally great stress on the human side of placement services rendered to the physically handicapped persons. A person whose work does not give him an opportunity of using his capabilities to the full, may develop a sense of frustration which may have an adverse effect on his work. On the other hand, it is equally important that he has all the physical and mental requirements of the job to be performed, as constant striving to reach a standard which is beyond him would also lead to psychological difficulties. It is also important that a physically handicapped employee should not be led to develop any complex prompted by a feeling that he is an object of charity and obligation.

The aim of placement should be to provide an opportunity for handicapped persons who are willing and qualified to work at productive jobs. To attain this aim, a number of problems must be considered and solved. Consideration must be given to the type of employment possible for the handicapped persons, whether they can only expect home bound employment or can work in a sheltered workshop or can seek employment. Once this basic decision is made his problems for the specific situation can be taken up. The differences between the handicapped persons are in the type and degree of disability and in their abilities as individuals. In a democratic society we are born equal, not in abilities but in the right to equal opportunities, to use the abilities we have and to develop them to the full.<sup>18</sup> It may be that success or failure in this area of vocational rehabilitation of the disabled may always depend to an unusually large degree upon the initiative, imagination and ingenuity of the individuals concerned in each particular case. What might contribute to success in one instance may have little or no bearing upon success or failure in other instances.<sup>19</sup>

The extent to which a wide range of employment opportunities for the disabled is practicable will vary in different countries, but it is

probably true to say that many countries have some or all of the following obstacles still to overcome:

- i. attitude of the community;
- ii. economic situation in the country;
- iii. resistance of employers;
- iv. attitude of trade unions;
- v. attitude of the disabled themselves and their families.<sup>20</sup>

## **Role of Placement Officer**

Placement of the handicapped necessitates intimate familiarity with specific jobs, occupational opportunities and trends, techniques of placement, the problems of accident prevention, compensation laws and methods of overcoming employer prejudice against employment of the disabled. Following placement, contact must be maintained to make certain that the client has acquired the skills necessary to continue his employment that he is adequately adjusted to his employment and working conditions, and that he is safeguarded against the exploitation of discrimination.

Overcoming employer prejudice is one of the major problems in placing disabled labour. Placement of the disabled becomes a highly individualized process. For this reason, specialized personnel for placement purposes are employed. The major functions of these placement personnel are to create in the management an attitude of acceptance of disabled workers, make surveys of industrial plants to select jobs which can be performed by the disabled, demonstrate to the employer the jobs which can be satisfactorily performed by the disabled, and place the disabled persons on the jobs selected as a result of these activities.<sup>21</sup>

The role of a placement officer can be described quite briefly as placing the disabled people in employment. This, however, involves a number of factors;

- i. where there is an employment service for the able-bodied and the selective placement service is a separate service, keeping in touch with that service, in order to have access to notified vacancies which might be suitable for specific disabled persons on the unemployed register;

- ii. keeping in touch with the local employment market;
- iii. locating employment opportunities for the disabled through some or all of the following sources:
  - (a) where there is an employment service, from among vacancies for able-bodied workers notified to that service;
  - (b) newspaper advertisements;
  - (c) trade papers;
  - (d) voluntary agencies for the disabled;
  - (e) employer and trade union association;
  - (f) chambers of trade, commerce, etc.;
  - (g) approach to individual employers on behalf of individual disabled persons or to try to find jobs in general.
- iv. submission to employment, applying the careful matching process already outlined. Random submission even to notified vacancies, can lead to unsatisfactory placing. The employer should be given a frank assessment of the worker, and the worker a correct assessment of the job. Some disabled persons may have to be accompanied to the interview or have some other form of special introduction by the placement officer.<sup>22</sup>

The task of finding out suitable vacancies in industries and other avenues of open employment is that of the placement officer. In certain countries two officers are employed to perform this task. One of them concerns himself only with the finding and locating of jobs and passing on the information to his colleague whose duty is to effect the actual placement. However, in several countries, more due to economic reasons, both finding the jobs and placing the clients are done by the employment and placement officer.

The placement officer, in a way, performs the same task as a salesman. He approaches the prospective hirer (employer), puts before him convincingly, of course, the benefits accruing out of employing a trained well-groomed disabled hand. The task of the placement officer is both arduous and onerous. He has to fight against the traditional misconceptions that the disabled cannot perform any worthwhile tasks. He faces a barrage of questions from the bewildered employer – if employed, how will my disabled employee come from his home to the factory? will he not accidentally injure himself while handling the

machines? will he be able to give the same production and quality of work as the able bodied? These and hundred other questions have to be satisfactorily answered before a disabled person ever gets employed in competitive avenues of employment.

The placement officer must thoroughly acquaint the client with the type of job he is to do. It involves collection of data such as physical demands of the job, working conditions, skill required, physical activities, occupational hazards, survey of sequence of steps, equipment, its set up and its maintenance, time required for normal efficiency, inter-relation with preceding and succeeding jobs and co-operation with fellow workers. This is a very important aspect of the work; a slight laxity in briefing the client on these important details may make all the difference between a successful placement and an inefficient placement.

Once the client is placed in the employment, he is to be counselled on job readiness and in plant behaviour. The client is apprised of the type of job he is going to handle, what he is expected to do and what he can expect from his fellow workers, etc. He is to be counselled against cashing in on his handicap and demanding concessions.

With labour organisations acquiring domineering role, it becomes incumbent for the employment agency for the handicapped to maintain good relationship with labour unions. The handicapped clients must be apprised of the type of union which controls the industry and principles of unionism.

The placement officer would be well advised to maintain relationships with labour leaders so as to promote goodwill and co-operation on their part in the employment of the disabled.

Any placement scheme for physically handicapped persons requires follow-up work to check the effectiveness of the placings, from the point of view of both the applicant and the employer. It will be necessary to keep close attention on working conditions, job adjustments, transportation needs and attitude of those with whom the handicapped persons will be working. There is, therefore, a great need for follow-up work in respect of the disabled candidates placed in employment till they are properly adjusted to their surroundings, and their fellow-workers develop necessary tolerance, understanding and patience with regard to such workers.<sup>23</sup>

The final stage in the employment of the disabled in open industry is that of effective follow-up. Experience shows that several difficulties crop up after a successful placement. Their nature and significance may vary according to the personal equation between the employee and the employment set up. The placement officer should maintain a regular follow-up system whereby he may be able to obviate these difficulties. Regular follow-up very often prevents situation getting out of hands and consequent retrenchment or discharge of the client.<sup>24</sup>

I. L. O. Recommendation 99 states that follow-up measures should be taken:

- (a) "to ascertain whether placement in a job or recourse to vocational training or retraining services have proved to be satisfactory and to evaluate employment counselling policy and methods; and
- (b) to remove as far as possible obstacles which would prevent a disabled person from being satisfactorily settled in work."

Such measures ensure:

- i. that the disabled persons realise that the placement officer's interest in him does not cease as soon as placement has been achieved;
- ii. that opportunity is given to remedy any minor matters which may be impeding satisfactory settlement;
- iii. that if the placing is not likely to lead to satisfactory settlement consideration can be given to an alternative placing;
- iv. that information is collected whereby the vocational rehabilitation service can be evaluated.

Follow-up can be by written inquiry, interview at the local office, by telephone, or by any other convenient means. For follow-up to be effective and unbiased, it is desirable to ascertain both the worker's and the employees assessment of the situation. Follow-up should start after a reasonable time has been allowed for settling down, and should cease as soon as it seems that the worker has settled down. At that stage the worker can be told to get in touch with the placement officer, should any future problems arise.

A placement officer should study his follow-up results, and so evaluate his own placing techniques.<sup>25</sup>

## **Type of Employment Opportunities**

It has already been pointed out that preparation of lists of jobs suitable for the disabled in general or specific disability groups is a restrictive and an out-dated method.

It follows, therefore, that the range of works for the disabled should follow the same range as for the able-bodied, which can be divided into the following groups:

1. Open Employment, that is, employment under normal competitive conditions – in factories, offices, shops, on the land, in the professions, in government services, etc.
2. Sheltered Employment.
3. Self-Employment.
4. Rural Employment.

The principles underlying the choice of any of these opportunities are:

1. The disabled should have the same opportunity as the able-bodied to perform the work for which they are qualified.
2. Disabled persons should have the same opportunity as the able-bodied for accepting suitable work with employers of their own choice.
3. Emphasis should be placed on the abilities and work capacities of disabled persons and not on their disabilities.<sup>26</sup>

### ***1. Open Employment***

Open employment means placement of the disabled in ordinary industry, commerce or public services on an equal footing with their counter-parts.<sup>27</sup> The placement of a disabled person in open employment must be based on the concept that when the handicapped person is properly selected and matched to the requirements of the job he is to do, he is no longer a handicapped employee.<sup>28</sup>

A much too commonly held notion that it is the charitable instinct of the society that has largely to accommodate its physically disabled members either in some odd or unimportant jobs or entirely in charitable institutions is being gradually replaced by the realisation that given an opportunity to develop and use their residual abilities,

physically handicapped persons are capable of leading full and independent life along with the able-bodied and contribute to the progress and happiness of the nation.

Opportunities for employment should be as wide as possible covering so far as practicable the whole range of occupations in the country. In widening employment opportunities for the disabled, environment is an important factor. If possible, a disabled person should be placed in the environment with which he is familiar. The following sources of employment for the disabled should be borne in mind.

In towns, handicrafts, work with small firms as well as large firms, and work in the public sector.

In rural areas, rural or village handicrafts, agriculture and co-operatives.

### **Limiting factors**

Certain limitations that come in the way of rapid progress in open employment are:

1. Inadequate number of educational and training institutions.
2. Lack of co-ordination of the existing training facilities with the availability of jobs.
3. Prevalent misconceptions and prejudices of the employers toward the handicapped.
4. Lack of systematic and planned efforts by the institutions to create public awareness towards the problem of the handicapped.
5. Lack of mobility of disabled persons.
6. Over protection of the handicapped by their parents/ guardians.
7. Reluctance of the handicapped to accept jobs in small factories/establishments.
8. Love for the white collar and ministerial jobs amongst the educated handicapped.
9. Reluctance of the handicapped from the rural areas to settle down back in the rural areas.
10. Exploitation of handicapping conditions of the individuals.

11. Absence of suitable legislation fixing certain quota of jobs for the handicapped.<sup>29</sup>

One of the major obstacles in the employment of the disabled is employer's resistance. This is because of the old fashioned recruitment methods, ignorance of selective placement techniques and prejudices against the disabled on the part of the employers. Many employers impose rigid standards of physical fitness as a condition for engagement. Very often this is based on rigid physical requirements and not on specific job requirements. Many disabled are rejected because they do not satisfy this standard although they are otherwise well suited for the particular job. In judging the fitness of the handicapped, the main consideration should be whether or not a person will be able to do a particular type of job with his disability.

Secondly, many employers expect versatility on the part of the employees to do multiple jobs. When a specific type of work slackens, the worker may have to be transferred temporarily to another job. Such employers, therefore, are reluctant to employ those handicapped who cannot be fitted in substitute jobs.

Thirdly, there is still discrimination against disabled persons on the grounds of their disability. Employers are generally not aware of the work performance, accident rate, low sickness rate, lower absentee rate and stability of disabled persons.<sup>30</sup>

Therefore, while examining the question of open employment for the disabled we have to focus attention on the employer's attitude in some detail.

### **Attitude of Employers**

We have to appreciate that employers are ordinary individuals susceptible to all cultural influences. They share to a greater or lesser degree the attitudes which have traditionally rejected and devalued the disabled. It has been argued that exposure to the disabled is likely to make the average employer develop more positive attitudes. Unfortunately, however, research findings on this issue continue to be ambiguous. Some of the studies have suggested that even continued exposure over a prolonged period of time has not led to the emergence of more positive dispositions towards the disabled, emphasising the imperative need for more structured approaches.

The results of a research study circulated by Rehabilitation International listed the various types of reactions of individuals on meeting a disabled person.<sup>31</sup> These reactions varied according to the sense of security felt by the individual himself and also according to the type of disability he encountered. But the general finding seemed to be that most people felt a sense of discomfort when they first met a disabled person. A reaction strain is often seen in the initial contacts of disabled and non-disabled persons. Some psychologists seem to go further and suggest that in some instances there is an unconscious revulsion born of an apprehension of disability. As ordinary individuals, employers are faced with some of these psychological problems in their initial encounters with disabled persons. It is for this reason that they show a variety of avoidance reactions manifesting in overt or covert concerns.

They may find justification in a wide range of circumstances which militate against the employment of the disabled. They may remain unconvinced about the ability of a disabled person to be economically viable, to be free from accidents, to get along with co-workers and supervisor, be a poor insurance risk, manage daily activities independently or travel to work and back, without a great deal of assistance. These and many concerns are expressed publicly or privately by employers despite the fact that a number of services have demonstrated the ability of many disabled persons to make valuable economic contributions, be less prone to accidents and display considerable independence in social living. The continued feeling of concern on the part of employers in these and many other areas is probably caused by the following:

1. Lack of exposure to the disabled
2. A negative self-image
3. Lack of information about the occupational implications of many disabilities.

Economic factors also often give rise to considerable reluctance on the part of employers to offer positions to the disabled. They are not sure to what extent modifications to plant, equipment and even work schedules would be necessary. This is a genuine concern for anyone engaged in a commercial endeavour and the employers must be assured that no disproportionate expenditure is usually involved. These modifications, where needed, are usually minor and do not upset the regular work schedule of the establishment.

It is not unknown for employers even in those countries where they are obliged by law to offer certain positions to the disabled, to take up the attitude that in appointing disabled persons, they are moved by a sense of charity – a situation which gives the greatest offence to the disabled. They ask for a chance to work and not for charity. The insistence on charity is a further manifestation of the inferior position we have socially and emotionally given to the disabled. Charity implies a relationship between the superior and the inferior. It is only when the principle of equality of opportunity for all is intellectually and emotionally accepted that the concept of charity in the employment of the disabled could be expected to disappear. In fact modern rehabilitation services for the disabled are the product of the egalitarian philosophy which was vociferously expressed during the French Revolution – the period which saw the emergence of the first institution for the handicapped in the world which have laid the foundation for present day services. The concept of charity must give way to the concept of equality of opportunity consistent with residual physical functioning.

A further instance of the inferior position to which the disabled are usually relegated is the difficulty educated and professionally trained disabled persons have in securing positions of responsibility. It looks as if our value system has not yet become comprehensive enough to include the concept of a disabled person discharging considerable social and economic responsibility.

This also prevents many disabled persons from going up the ladder in the normal manner, resulting in a great deal of frustration. Behavioural research has shown the prevalence of a slightly greater degree of social maladjustment among the disabled. In the work setting the disabled person frequently gets blamed for maladaptive reactions which are, in fact, the product of the distorted perceptions of employers and co-workers.

Another psychogenic distortion of reality in this area is the fact that the disabled person is either considered incapable of producing much or is believed to be endowed with almost supernatural powers. He is expected to be an ideal worker, producing more than the others, regular in attendance, not engaging in unhealthy trade unionism and other undesirable activities. It is almost forgotten that the disability has not altered a person's basic pattern of desires, aspirations and social responsibilities. This distortion takes place because we seem to

assign to the disabled a variant social role. Unfortunately since the disabled are part of the same culture, they accept the prevailing rejecting attitudes and as a reaction they display hypercompensatory behaviour. They may try to produce more or adopt the role of the ideal worker, a role which is difficult to maintain for a prolonged period of time which eventually results in all-round disillusionment.

Another problem which frequently bewilders the employers and the co-workers is the rapid growth of friendly relationships between the disabled and the non-disabled workers and an equally rapid deterioration of these relationships.

This could be explained by the feelings of dependency of the disabled worker and his heightened need for affiliation. Unfortunately, however, a relationship based on the satisfaction of dependency needs is isolating and seldom lasting. The total effect of the disabled worker, trying to act as the ideal worker and developing excellent relationships which he cannot maintain for an adequate length of time, is to alienate the employer and thus jeopardize the chances of other disabled persons being offered positions in the same establishment.

Like others, employers share the group reactions which regard the disabled as being socially and emotionally different. These reactions influence the employment potential of physically impaired persons. It is not legislative compulsion but an understanding of the reactions of the disabled and their employers to each other that is likely to bring about the transformation of irrational attitudes into those based on real insights into the whole field of somatopsychology.

Reference can also be made to the contrasting feelings of many employers. On the one hand, they feel called upon by patriotic, philanthropic and other considerations as at the present time, to offer employment to the disabled and on the other they find it difficult to resolve their own personal conflicts. They are in a state which psychologists call cognitive dissonance. The outward manifestation of this state may be one of total indifference to the problem, sitting on the fence, or in extreme cases, over-indulgence without regard to the principles of selective placement of the disabled on the right jobs, or they may take shelter behind a facade of sympathetic over-indulgence and stall disabled employment seekers by saying, "I have no suitable vacancy."

The placement of handicapped persons in open employment, if it is to be successful, must be based on a realistic approach to the task. Efforts motivated only by sympathy for the disabled will, in the long run, work to the disadvantage of both employers and the disabled employment seekers. Any employer is justified in considering the efficiency of performance as the main criterion in selecting workers. The employer likes to know whether the efficiency of a disabled worker is comparable to that of an able-bodied worker in an identical job under the same working conditions. It will not be proper to ask the employer to hire a handicapped worker until it has been proved that the latter is able to meet the normal efficiency standard set for other workers in the same job.

### **Overcoming employer's prejudice**

The golden gate of unbarred employment will not open unless the barrier of doubt that exists among the employers about the working potential of the disabled workers, are demolished. This may be done in two ways: (1) employment exchanges or authorities of training centres would invite employers to give scope to young disabled to appear in pre-employment tests with their normal counterparts on equal terms; (2) the other way is to persuade employers to take disabled trade apprentices in different industrial centres, factories and workshops on condition that if the disabled succeed in tests after apprenticeship period they are to be absorbed in employment. Both devices will help to break the barrier of doubt about the working potential of disabled workers. And once it is done, the employers will be the best patrons.<sup>32</sup>

### **Facilities for accelerating placement**

As for the facilities which may have to be provided for accelerating their placement in open employment, the following measures can be suggested:-

(1) There is need for adequate facilities for medical and physical restoration of handicapped persons before they are placed in jobs. Experience shows that with adequate medical and physical restoration and provision of artificial aids together with proper training in their use, a handicapped individual could be made more presentable, employable and efficient. For instance, a person with amputated leg or impaired hearing will become more acceptable to the employer, if he is provided with an artificial leg or a hearing aid.

(2) There is need for adjustment centres or rehabilitation centres for rehabilitating handicapped persons both physically and psychologically. Adjustment to disability is particularly found to be essential in respect of those persons who suffer from the disability in later life, which sometime necessitates change of job, or further training for securing gainful employment.

(3) There is need for providing more facilities for training of the handicapped persons in normal technical training institutions and for re-organising training programmes in the special institutions for the physically handicapped so as to bring them in tune with the requirements of industry.

(4) Although the main purpose of selective placement is to find a job for the handicapped individual matching his abilities and interests with the requirements of the job, there is need for preparing a dictionary of occupations to know the numerous jobs which different categories of handicapped persons can perform despite their physical disabilities.

(5) It will be necessary to have special employment offices or special sections in the normal employment exchanges at several more places for giving more adequate assistance to physically handicapped registrants in finding suitable jobs.

(6) A problem that still awaits solution has been the difficulties experienced by handicapped persons coming from rural areas in securing employment in the cities. Such persons have practically no scope for any economic activity in the rural areas where they reside and naturally, they, like able-bodied employment seekers, come to the city for succour. Their greatest difficulty is in obtaining accommodation at places from where they can attend their jobs with convenience and safety. In view of this difficulty, it will be necessary to set up hostels for working handicapped persons in cities with industrial potential.

(7) As regards reservation or setting apart of certain quota for the employment of the handicapped persons, legislation may be necessary in most countries. In anticipation of such provisions, it is important that appropriate machinery for employment assistance to the physically handicapped be sufficiently developed to enable them utilise fully the employment opportunities that will thus be made available and to ensure their placement in the jobs reserved for them in a scientific and systematic manner. It may be pointed out in this

context that in the employment of physically handicapped workers, the satisfaction of the employer as well as of the employee has to be taken into consideration, and almost invariably, the employer may need expert advice as to the selection of the person most suitable for the job which he may have to offer. Only a specialized machinery will be capable of rendering such advice.

(8) Relaxation of physical fitness standards and maximum age limit in favour of physically handicapped candidates for entry into government services has been granted by the central government and most of the state governments in India; while such relaxation is necessary so that handicapped persons may not be deprived of work which they can do with their residual capacities, it must be emphasised that the selection of the handicapped persons must essentially be made on a competitive basis so far as work performance is concerned, so that the absorption of each handicapped individual in suitable employment is not just an act of charity but an act prompted by a scientific outlook which becomes a part of a planned socio-economic programme.

(9) The terms under which disabled persons are employed in regular industry should be incorporated in an agreement between the placing agency and the top management of the employing concern. If the employing concern recognizes a union as bargaining agent for its employees, this union should be requested to become a party to the agreement as far as practicable. The agreement should be concluded, wherever possible, before steps are taken to implement it. The agreement will generally be verbal, and every possible precaution should be exercised to ensure that it is correctly understood by everyone concerned.

(10) The placement of disabled persons in full competitive industrial employment should be based on information about each job in the employing concern obtained by an on-the spot survey by a qualified representative of the placing agency in conjunction with a responsible administrator of the employing concern. The determination of the suitability of the jobs selected for the disabled should be the responsibility of the representative of the placing agency.

(11) The employment of the disabled in regular industry should be based on the guarantee that each disabled worker will meet the standard requirements of the job on which he is employed and will be paid for his work at the standard rate.

(12) Each employing concern should guarantee the placing agency with which it is co-operating that, to the extent that it has work available which can be performed satisfactorily by the disabled, it will offer permanent employment to its quota of disabled persons. This, in effect, will give competent disabled persons engaged in fully competitive industrial employment a super-seniority status which will serve to compensate in some measure for the severe limitations placed upon their employment mobility by the lack of public knowledge about the abilities of properly selected and properly trained disabled persons. It will further help to provide rehabilitation programmes for the disabled with tangible objectives for the benefit of the persons they serve.

(13) Placing agencies should maintain permanent follow-up schedules to make certain that the disabled persons employed under their programmes meet the requirements of their jobs and that all interested personnel in the concerns in which they work, understand and accept the terms under which the disabled persons are employed.

(14) No disabled person should ever be placed with a concern in which a strike is in progress; nor should any disabled person ever be encouraged to conduct himself, with respect to any labour controversy, in a manner that might incur the resentment of either his employer or his co-workers.<sup>33</sup>

We are referring to the enormous accent on the placement of the disabled in the competitive market. While the integration of the disabled into the community is a most desirable objective, it is to be realised that every disabled person may not either be acceptable in the competitive market or may, because of his own cognitions and expectations, be incapable of functioning at an optimum level in an unstructured and a non-supportive setting. A radical re-orientation of the philosophical approaches to the employment of the disabled on the part of professional workers would also seem to be the need of the hour.<sup>34</sup>

## *2. Sheltered Employment*

Sheltered employment was perhaps the first form of employment provided to the disabled. It refers to employment in a protective environment. This could be done in the following two ways:

- (i) by providing special amenities like special adaptation to machines and other equipment necessary to enable a physically handicapped person to practise a given operation;
- (ii) by providing visible or invisible subsidy.<sup>35</sup>

Initiative in this field was taken by voluntary organisations who realising the need to improve the morale of the disabled and of accelerating their rehabilitation process developed special or "sheltered" workshops in which such persons could engage in some suitable kind of employment.<sup>36</sup>

In every society there are disabled persons who are too severely disabled to undertake a normal day's work, but can make a substantial contribution towards their independence. There are also others who could work well enough, but live in inaccessible areas or have travel problems. Given the facilities and the will, many of these people could become self-supporting.

Sheltered employment should be provided for those disabled persons who because of the nature and severity of their disability, cannot be made fit for ordinary employment.

This is a somewhat relative matter dependent on factors which must vary from country to country, such as—

- (i) local attitude towards the disabled;
- (ii) level of unemployment and underemployment;
- (iii) level of development of vocational rehabilitation services and general man power services;
- (iv) level of industrialisation;
- (v) economic and social situation;
- (vi) density of population – whether predominantly rural or urban;
- (vii) geography, communication etc.<sup>37</sup>

Sheltered employment is to be understood as productive, remunerative employment of any type supplied under conditions specially designed to meet the temporary or permanent employment needs of handicapped people. Sheltered employment being one of the aspects of vocational rehabilitation, should have always as a primary objective, the provision of work. However, according to

circumstances it may be desirable and expedient to combine the provision of sheltered employment with other services essential to the vocational rehabilitation of the individual.

When placing handicapped persons in sheltered employment, due regard should be paid to the personal and vocational qualifications of the individual and local circumstances so as to help him to improve and maintain work capacity and likelihood of placement and to achieve a good work atmosphere and efficient production.<sup>38</sup>

To the extent to which statutory regulation of wages and conditions of employment applying to workers generally is in operation, it should also apply to disabled persons employed under sheltered conditions.

### **Philosophy and Principles**

The team concept in vocational rehabilitation involves an interdisciplinary process wherein the co-operation of many and varied professions and disciplines like medicine, psychology, education, social work, vocational counselling and guidance, placement services etc., comes into play. This makes it possible to train disabled clients in such a manner that they become as productive, as contributive and as normal as able bodied workers on selected jobs.

The goal of all modern workshops should be to equip fully a disabled person to take his rightful place in open competitive employment. Training has to assist clients in regaining psychological security, acquiring basic skills despite the handicap, re-learning techniques of daily living, acquiring expertise in self-care and developing skills of communication. All these would lead to the social and economic security of the rehabilitee and to the total development of his personality.

Since the objective of vocational rehabilitation is to restore the client to the fullest normalcy and ability, emphasis should be shifted from the disability of the client to his residual abilities, helping him to accept fully the limitations imposed by the disability, and to regain the shattered confidence. Correct attitudes towards disability do not develop automatically. The client, his parents, his family and society - all have to be continuously encouraged to develop positive attitudes and approaches. The client has to be motivated, his internal strength built up afresh and his determination to succeed

encouraged by practical help.<sup>39</sup> In this process, the sheltered workshops play an important role.

### **Types of Sheltered Employment**

Sheltered employment of the disabled can take several forms. They are:-

- (a) sheltered workshops planned to provide more or less permanent employment for persons unable or unlikely to take up or return to open employment;
- (b) home worker's schemes – either industrial or craftwork – for those who, for physical, psychological or geographical reasons cannot travel regularly to or from a sheltered workshop or for whom a sheltered workshop is not available<sup>40</sup>
- (c) organised vending stands and sales *KIOSKS* – run by the disabled – at public places;
- (d) agricultural and rural pursuits – to be particularly encouraged for the disabled living in rural areas. These include work in agriculture, horticulture, animal husbandry and dairy, poultry farming and rural crafts and trades.<sup>41</sup>

Sheltered employment may be provided by public authorities or voluntary organizations. Factories, workshops and other undertakings may also be created by co-operatives of the handicapped themselves or may be part of a firm in open industry.<sup>42</sup>

### **Objectives**

Workshops for the disabled have some of the following objectives; <sup>43</sup>

- (i) Providing welfare services, sometimes exclusively for the severally disabled or multiply handicapped, who, for obvious reasons, are not quite suitable for work in open competitive employment.
- (ii) Providing training and or work experience with a view to assisting clients to prepare for placement opportunities in open employment;
- (iii) Training-cum-production units, which, in addition to imparting intensive training, undertake contract work with a view to meeting a part of the running expenditure;

- (iv) Fulledged production units with all fully trained clients, which endeavour to work on commercial or business lines.

## **Organisational Structure**

It is obvious that the organisational structures of the four types listed in the preceding paragraph would differ.

In the first type, emphasis is on providing shelter or welfare services for the multiply or severely disabled, who, despite their best efforts cannot be fully self-sufficient.

Disabilities vary from individual to individual, from slight to severe, from partial to total. The disabled clients who for physical, psychological, geographical or for any other reason – such as lack of mobility – are not suitable for placement in open competitive employment are ideal clients for sheltered workshops. As a matter of fact, sheltered workshops which are of terminal benefits should be encouraged only for the multiply or severely handicapped persons with limited or no mobility.

The second type provides for training and work-experience and prepares clients for placement opportunities in open competitive employment.<sup>44</sup> The last two types provide sheltered placement in varying degrees.

Production in sheltered workshops may be carried out either as work on own account or as contract work. Although the advantages of contract work generally outweigh the disadvantages, it is preferable to undertake a mixture of both types of work. This avoids over-dependence on one or more firms and the risk of loss of contracts in the event of a trade recession or technological change. It also results in a variety of work at different levels of skill.

Products of sheltered workshops should be able to compete as to quality and prices with the products of normal industry. Undercutting of prices should be avoided, as should raising of prices on charitable grounds.

Sheltered workshop products should be advertised and sold only on the strength of their quality and price. It is not thought desirable to label goods as having been made by the disabled. However, for products of high quality there is value in having a recognized trademark.

The State may assist by authorising and encouraging sheltered employment organisations to bid for Government contracts and may award a reasonable proportion of such contracts to sheltered workshops.

A central organization may be useful for the purpose of buying and marketing the goods produced by the sheltered workshop. Such an organization could help to co-ordinate the activities of workshops and could also play useful technical, consultative and research roles.

Although sheltered employment has to fulfil humanitarian requirements, it should be carried out on a commercial basis. Workshop management is technically little different from the management of a normal undertaking. It, therefore, calls primarily for properly qualified managers and supervisors. Appropriate technical skill, experiences and qualifications are more important than previous experience with the handicapped. The number of supervisors, while varying according to the kind of work being done and the type of handicapped persons employed, should be sufficient to ensure effective supervision.

Appropriate medical, psychological, social and placement services should also be available, either in the sheltered employment programme or in the community. If these services are provided in the programme they should not be charged to production.

A physician should carry out examinations periodically or whenever necessary, and should give medical advice to the management on matters concerning the employment of the workers including the type of occupation, hygiene and first aid. He should have a sound knowledge of employment problems generally and the special needs of the handicapped.

Those in charge of sheltered employment should have a sound knowledge of production, business practice, personnel management and, in particular, be adaptable and skillfull in fully utilising the resources of specialist teams and advisers. Where possible, they should receive the benefits of training in their responsibilities.

In the selection of handicapped persons for sheltered employment, use should be made of a team, composed of persons who are experts in various fields, and having a special understanding of the vocational needs of handicapped persons, such as a physician,

a psychologist, a social worker, and a placement officer. In addition, the management of the sheltered establishment should always be represented. Before a decision is taken, the handicapped applicant should be given full opportunity to explain his views as to his placement in sheltered employment, either to the team as a whole or to the members individually<sup>45</sup>

In selecting clients, those who have been through adjustment and orientation training and have acquired basic skills in using their residual abilities should be preferred. Adjustment and orientation must precede sheltered employment. It is essential that the clients are psychologically adjusted, have learnt to accept their disabilities and are motivated to making better efforts and success of their careers despite the disabilities. The team should also take into consideration the length of time the client should be employed in the sheltered workshop. It must be recognized that there are groups of physically and mentally handicapped persons so disabled that sheltered employment on a permanent basis would be necessary for them.

In the selection procedure, repetition of examinations and interviews should be avoided as much as possible by means of close co-operation among the agencies and specialists concerned, in particular regarding the exchange of all relevant information.

Job evaluation is necessary, and should be carried out by a work study expert, the workshop manager, and other experts working together as a team.

Part-time sheltered employment should only be considered on specific medical, psychological and social reasons provided that efficient production can be maintained.

### **Condition of Work**

Wage systems, including piece rating and merit-rating, should be based as far as possible on national wage structures for normal employment, due regard being paid to the special requirements of sheltered employment. Where indicated these should be supplemented by other means so as to secure an adequate standard of living.

Incentives should be used to stimulate better work performance without impairing the health of the workers.

The workers' health and safety should be protected by applying the standards prevalent in normal industry.

If the special workshops for the disabled are to fulfil their primary functions adequately, they must maintain the finest equipment available and must adhere to the best principles of work methods. Lighting, ventilation and other environmental conditions must be of a type conducive to the highest efficiency and morale.

Premises housing sheltered employment should be built or modified and equipped to make them useful and readily accessible to the handicapped.<sup>46</sup>

The workshops for the disabled should, normally, cater to the age group of 18 to 40.

Working schedules and shop discipline must be thoughtfully planned and rigidly maintained. Efforts to arrive at the best way of performing each job must never be relaxed. None of the old custodial atmosphere of the special workshop must be tolerated. The blind trainees and workers must be treated with the respect due to them as essentially normal human beings striving against odds to attain, or maintain normal existences; and the remuneration for their work must be sufficient to dignify their efforts and make them worthwhile.<sup>47</sup>

It is imperative to make it clear to the clients at the admission stage itself that the institution is not a terminal benefit, that on completion of training, efforts would be made to place them in open competitive employment, but if such efforts do not succeed, they would have to leave the institution so as to make room for training of other deserving disabled persons.

In workshops which are in the nature of terminal benefits, only the multiple handicapped or severely disabled persons should be admitted. Preference should be given to those who are home-bound and who, for psychological, emotional or physical reasons are not capable of moving out and taking their rightful place in normal employment.

### **Wage Policies & Subsidies**

Sheltered workshops would have to ensure efficient administrative structures which follow normal business practices and procedure. Man, Money, Materials, Machines and Methods – the five 'M's in Management Techniques – should be properly planned, deployed and efficiently managed.

Technical side - particularly training and production - should be on lines of normal polytechnics and production units. With properly planned and well laid-out workshop set-up, machines and professionally qualified and competent technical staff, production should be at commercial level. Modern advances, current costing methods, production techniques, marketing and sales practices, financial planning, personnel administration, public relations and general overall control and management on business lines shall ensure success of workshops for the disabled working as production units.

The mistake often made is to make wages and amenities in sheltered workshops more attractive or on a par with those obtaining in open competitive employment coupled with the security of institutional sheltered life; this works out to the disadvantage of the disabled in that they are content to stay where they are and do not wish to move out to the more challenging open competitive world. Wages and/or amenities should not, therefore, be so pitched as to make open employment unattractive.

It is also essential that payment is linked to production or output so as to leave scope for the individual's abilities and give him an incentive for better efforts. Where wages are fixed, there should be incentive schemes, which would lead to more production.<sup>48</sup>

The rapid transition from small and frequently substandard industrial establishments employing disabled labour to well organized and highly developed rehabilitation centres which special workshops for the disabled are experiencing today has left a number of curious anachronisms in the thinking of many otherwise progressive workers with the disabled concerning the operation of special workshops for the disabled. One of the most spectacular of these anachronisms is the belief that special workshops for the disabled can and, therefore, should be operated at a profit. This belief loses sight of the two most important functions of present day special workshops for the disabled, namely, to serve as a vestibule through which those disabled persons who have the capacity may be inducted into fully competitive industry or business, and to provide employment for those disabled persons who are clearly unable to work successfully under fully competitive conditions.

It is conceivable that special workshops for the disabled could operate at a profit under conditions which would defeat their primary

purposes. They could offer employment to those disabled persons only who enjoy high productive capacities and who, therefore, from a business efficiency standpoint, are entirely economically feasible employees. These disabled persons, however, are capable of working successfully in regular business or industry and should not be confined to the segregated, limited employment of special workshop, for the handicapped persons. They will find far more latitude for the employment of their talents to their own best interest in business or industry which is not limited in scope to the capacities of predominantly handicapped personnel. Special workshops for the disabled might operate at a profit, also by offering working conditions and rates of pay sufficiently below standard to compensate for the high operating cost resulting from the fact that their workers are handicapped. This, obviously, would not serve the best interest of the disabled, as it would provide poor incentive to work for those persons who, because of their highly limited capacities, would have to look to such workshops for permanent employment, and they would offer poor preparation for those disabled persons who might be capable of enjoying fully competitive employment if given proper opportunities to do so.<sup>49</sup>

Whereas workshops for the disabled all over the world have been endeavouring to be commercially self-sufficient and be able to make both ends meet or leave a small margin of profit, in actual practice this objective is seldom achieved. It would, therefore, be necessary to obtain government subsidies as rehabilitation of the disabled is legitimately the responsibility of the State.<sup>50</sup> Such a subsidy should be so pitched as to give a reasonable living wage to the disabled client.

## **Modernisation**

Modern sheltered workshop should not be an exercise in window dressing or having a modern and beautiful building with the same old traditional trades. While modernising sheltered workshops, we have to modernise our ideas, policies, philosophies and thinking in terms of the rapid advances of science and technology which have completely changed the mode of manufacturing goods from hand operation to automatic machines, from simple hand assembly jobs to automatic assembly plants.

In planning modern sheltered shops or modernising the old ones, some basic facts are to be borne in mind. These are:—

- (a) Survey of plants and commercial firms in the community with a view to equipping sheltered shops with modern machinery and equipment. Selection of suitable items for sub-contracts.
- (b) Selection of technical staff of the right type.
- (c) Cost analysis, marketing of products, maintenance of production register etc.
- (d) Improved earnings of clients under modern conditions.
- (e) Public relations.
- (f) Management techniques.
- (g) Placement of the client in open industry.<sup>51</sup>

(a) *Survey of Plants and Factories*

First of all, a detailed survey of the plants and factories in the vicinity of the workshop to identify the type of sub-contracts the sheltered shops can undertake, is necessary. The type of machinery and equipment used should also be ascertained. Some of the sub-contracting firms loan their machines too.

It will otherwise be prohibitive to buy new machines for every new contract.

(b) *Selection of Staff and Staffing Policies*

No sheltered shop can operate effectively without an adequate, well trained administrative professional, supervisory and clerical staff. The type and amount of staff necessary are dependent upon the programme carried out at the sheltered workshop.

Unfortunately, for want of funds, inadequate remuneration attached to the posts, lack of promotion opportunities etc., great difficulties are experienced in getting the right type of personnel to man the posts. Even if we succeed in recruiting the staff at low salaries, they are always on the look out for better jobs. For the ultimate success of modern sheltered shops, it is advisable to recruit the right type of staff on a fairly decent salary and good future prospects. The staffing policies should be on the same pattern as obtaining in progressive business and industrial concerns.

(c) *Cost Analysis, Marketing of Products and Maintenance of Production Registers*

No modern workshop can afford the luxury of running such costly projects without arriving at a correct cost analysis of the articles and maintaining the requisite registers on business lines. Cost analysis will reveal where we are spending more and how to make the product pay commercially.

When the project is supported jointly by the community and the government, we are duty bound to ensure that no disproportionate expenditure is incurred in the total process of manufacturing till the goods find their way in the open market. In order to assess the position for every contract executed, there should be a system of accounting for profit and loss.

Since we are striving towards the goal of improving the individual clients, skill and efficiency in the given task for facilitating this ultimate placement in open industry, there should be a system of maintaining production records of every individual workshop operator, to check his work and explore ways to increase his production which should be as much as if not more than that of the sighted worker for a like job in open industry.

(d) *Improved Earnings of Clients*

The clients should be paid on a piece rate basis for the work turned out at the shop. This will encourage healthy competition among the clients provided, of course, there is continuous work. Piece rate payment will also provide maximum incentive to better work.

The workshop should determine the wage rate which should be more or less on par with what the disabled would be earning if placed in open industry in similar jobs. This is, of course, allowing for whatever other amenities that are provided under sheltered conditions.

The practice of subsidising earnings of clients, bringing their total earnings to a living wage, is a blessing but we have to ensure that it is not misused. The state must help with liberal subsidies.

(e) *Public Relations*

Even today, the community does not know what is being done for the disabled and what they can achieve with given

opportunities in life. This is because of lack of adequate Public Relations Work.

It is the prime duty of the Workshop authorities to publicise activities of the shop if the community is to be approached for sub-contracts, job or funds. A workshop well organised in public relations should easily achieve its objectives.

Only by working out a careful plan of service to handicapped individuals according to their particular needs can the confidence of the clients and the community be gained.

Public relations can be furthered by arranging for talks and discussions at various service clubs like Rotary, Lions, Red Cross Centres, Women's Organisations, Defence Service Clubs, Chambers of Commerce, Manufacturer's Associations etc. Last but not the least, much publicity can be given on the national radio and television systems.

Activities of the workshop can be publicised through cinema slides, movie films etc. Periodical visits by the community to the Centre will go a long way to demonstrate the work skills and abilities of the disabled. In brief all recognized media of publicity may be used for this purpose.

#### *(f) Management Techniques*

If workshops for the disabled have to survive in this highly competitive modern world, they will have to take to modern management techniques with a view to making them full fledged commercial business undertakings. Sound business practices can no longer be ignored. There is not the least doubt that only the combination of modern technological advances, scientific practices and modern management methods would enable these workshops to work as production units on commercial lines. Expertise in a variety of fields is necessary. Quality control is a must in any normal factory. Workshops for the disabled are no exceptions. If workshops for the disabled have to survive, they can do so only as sound business undertakings and not on the basis of charity or altruism. Unless the commodity produced is comparable, is at competitive rates and conforms to the normal market finish and standards, it will not be easy to sell goods produced in such workshops.

Sheltered employment has, therefore, to be more sensitive to the changing production techniques and other market variations. In an era of great competition and technological advances, production units run by the disabled would succeed only if they are organised on sound business lines.<sup>52</sup>

The Invalides' Co-operatives in Poland, Opportunity Workshop of Lexington Inc. and the Goodwill Industries in U. S. A., United Abilities Company, Ethiopia, the Remploy Limited, U. K. and the Special Enterprises for the Blind and for the Deaf, Russia, are well known examples of modern sheltered workshops.

*(g) Sheltered Employment – not a Terminal Benefit.*

Since the very objective of rehabilitation is to develop the total personality of the client to enable him to lead as normal and as full a life as possible, it is obvious that he has to take his rightful place in normal society. Thus, the client has to be positively encouraged to go in for open competitive employment, if this is at all permitted by his disability, and to lead a normal life with his family and friends. Sheltered employment has, therefore, positively to be discouraged for those who are able to go into open competitive employment. From this point of view, it is absolutely clear that the workshops for the disabled are not terminal benefits.

The clients cannot remain in sheltered institutions all their lives; otherwise it would deny training facilities to other disabled persons knocking for admission at such institutions. Besides, the economics of a project would be vitiated if the same limited number of clients remain in institutions all their lives. The per capita cost would be prohibitive. Turnover of clients is most essential.<sup>53</sup>

The disadvantages of sheltered work are:

- (a) That the clients have to lead a dull, drab and segregated institutionalised life.
- (b) that the community hardly gets an idea about the work ability and skill of the clients for a particular job. <sup>54</sup>

Employment in open competitive industry should be continuously encouraged, because it fulfills the dual objectives of: (a) integration into normal society, and (b) makes available the limited places for training other disabled clients. It simultaneously helps spreading the

message of rehabilitation and educating the able-bodied community, particularly industry, in the potentialities of the disabled.

Workshops for the disabled are for the restricted object of:

- (a) Training the disabled;
- (b) For inspiring confidence and enlightening the industry on the capabilities of the disabled, demonstrated in these institutions; and
- (c) for providing congenial and remunerative work to the home-bound clients who are not able to avail of the normal community facilities.

Sheltered employment should therefore, be the exception and not the norm.<sup>55</sup>

### 3. *Self Employment or Home Work*

'Self-employment' is an unorganised economic sector holding out no promise of stability, yet this provides ample evidence of courage, that the handicapped are not asking for charity, that they just need the chance and economic security. But if the chance is not coming forth for various reasons, the only course left for this disadvantaged class is to push around and make way for themselves.<sup>56</sup>

In some economically advanced countries, severely handicapped persons are often assisted in working in their own homes.

A home-bound employment programme must be as efficiently organised as a workshop. It will be worthwhile, therefore, to consider here the type of organisation that would be needed for undertaking a programme of this nature.

The primary object of a home-bound employment programme is to assist very severely handicapped men or women to work in their own homes and thus to supplement their family earnings.

Although it is often suggested that different categories of physically handicapped persons should not be put in the same establishment, the same objection does not hold good in the case of a scheme of home workers, because in such a scheme different categories of physically handicapped persons are not in physical proximity. Consequently, for reasons of economy it would be worthwhile

to consider having such comprehensive schemes covering all major categories of handicapped persons.

It is important that since a home worker has to work on his own without continual supervision, it is necessary for him to be even more skilled than a person placed in a sheltered workshop or in open employment. The level of his earnings will be determined by the quality of his products.

It seems that the problem of training could be solved in two main ways:

- (i) by sending the home workers to residential training institutions where they could be trained in the craft of their choice and consistent with their aptitude and physical limitations.
- (ii) the organisation administering such a scheme could employ craft teachers and occupational therapists to visit severely handicapped home workers in their own homes and impart to them such training as could be given without a great deal of equipment and rearrangement.

It will be for the organisation to decide in the light of prevailing circumstances which of the two alternatives suggested above would be more appropriate.

An efficient organisation to work out the scheme is to be set up. Such an organisation will be required to undertake the following important tasks:-

- (i) provide raw materials to the workers at regular intervals;
- (ii) collect finished goods at intervals;
- (iii) pay the workers regularly;
- (iv) arrange for the sale of the finished products; and
- (v) offer technical advice to home workers from time to time on the quality of their goods, the type of goods they could make and so on.<sup>57</sup>

It is possible that some voluntary agencies or local bodies might be able to set up organisations of this kind. It will be worthwhile to make a beginning with such organisations in urban areas in the first instance where the lack of efficient communications and scattered handicapped population do not present insuperable problems.

The successful operation of a small business or employment on one's own account depends upon the following factors:-

- (i) business ability;
- (ii) knowledge of the particular form of business;
- (iii) sufficient money to make a start;
- (iv) willingness and ability to work hard;
- (v) knowledge of the demands for the goods being made;
- (vi) salesmanship;
- (vii) ability to learn from others and to profit by one's mistakes;
- (viii) liking for the particular kind of work and for taking responsibility. <sup>58</sup>

According to propensity and aptitude those who opted for handicrafts like clay, plaster, porcelain moulding, toy making etc., may employ themselves in home manufacture of sundry products and market their products according to demand. Many deaf persons are employed in similar ways. But better results may be obtained if co-operatives, like handloom co-operatives of the normal people in India could be formed under the initiative of the government as well as of the public which will supply raw materials like colours, clays, moulds etc. to their working members and market, the finished products. This means would allow them to concentrate on production as they need not have to run here and there either for procuring raw materials or searching for markets for their products.<sup>59</sup>

In the selling of goods, the agency concerned employs methods similar to those used by any selling organisation, e.g., advertising, wholesale selling, contract work, door to door sales and retail selling in a sales room. The most profitable of these methods, of course, is the contract sale to governmental organisations.

The operation of small retail business enterprises is a good avenue of employment for the disabled. In some of the developed countries like the United States many blind persons have undertaken such business pursuits. A large number of these include intelligent blind persons who lack the background essential for success in professional or specialized employment and who lack interest or ability to successfully engage in fully competitive industrial employment or

industrial employment in special workshops for the blind. The programmes of many rehabilitation agencies for the blind provide for the lending of money to qualified blind persons to start such enterprises and to receive whatever supervision or further assistance their success may require. Some agencies for the blind own or control what might best be described as chains of vending stands and similar small businesses which they operate under blind managers on a basis which turns over the bulk of the income to the blind managers and other blind personnel concerned with the operation of the stands. In such instances, a nominal graduated percentage of the income from the stands is retained by the owning or controlling agencies and used as a revolving fund for expanding business opportunities for the blind and for helping to defray the cost of providing business supervisors whose experience and special training supplement the abilities of the blind managers in a way that makes it possible for intelligent, industrious blind persons to succeed whose backgrounds and special abilities may not particularly qualify them for this type of employment..<sup>60</sup>

Small business enterprises are equally suitable for the deaf and other disabled persons also. They may include, tailoring, carpentry, nursery, watch repairing, pen industry, plastic workshop, stationery shop etc.

#### *4. Rural Employment*

In the developing countries of Asia, Africa and Latin America where agriculture has tremendous impact on socio-economic reorganisation of the country and where larger sections of the handicapped population reside in rural areas, the possibilities of rural employment cannot be ignored. Hence rural employment has been given its due place in the scheme of rehabilitation of the disabled. Handicapped persons in rural areas may be employed in rural occupations such as cultivation, floriculture, horticulture, pisciculture, apiculture, animal husbandry, dairy and poultry keeping, piggery etc., so that they can live with their families and can also contribute something towards the material benefit of their families instead of wasting their material resources.

It is essential, however, to resettle the handicapped in careers of their choice preferably with their families and friends and in their familiar surroundings. However, only a very negligible percentage of this colossal number is trained and given resettlement facilities at

present. The need for placing the greatest number possible in rural employment becomes an absolute necessity.<sup>61</sup>

In the decades ahead what is of supreme importance is to give a new direction to the employment of the handicapped. In the past, the focus has been the urban setting. Both open and sheltered employment have been concentrated in larger cities. This trend needs to be reversed. In order to avoid the hardship and iniquities resulting from urbanisation, rural employment needs to be vigorously fostered.

The stereotype of a sheltered workshop is an urban establishment. There is no reason, however, why this should be so. Sheltered workshops could take up agro-based industries. Even such occupations as dairy farming, poultry keeping, rope or mat making, sheet metal products used in many rural homes and other products needed for rural homes and industries, could be made in workshops established in small villages. These need not be large workshops. They could be a modified version of the home workers scheme operated in the United Kingdom.

However, in order to keep costs within reasonable limits it may be an advantage to persuade groups of disabled persons to work in rural areas so that supervision, payment of wages on a regular basis, purchase of raw materials and marketing could be properly organised.<sup>62</sup> Indeed, the main difficulty in establishing co-operatives run largely by the handicapped has been that the purchase of raw materials, accounting and marketing have been the most formidable problems. These could be eliminated or their rigour alleviated by the mini rural workshops.

### **Advantages of Rural Resettlement**

The advantages of training and resettling the rural handicapped in their familiar surroundings are obvious. Emotional and psychological disturbances resulting from separation from family members and friends can be prevented to a great extent. Parental and family interests can be fostered by the disabled person working in co-operation with his own family groups.

Mass urbanisation, deserting the rural areas, is obviously an unwelcome policy for more than one reason. The cost of living in towns and cities is definitely much higher apart from the difficulty of securing suitable residential facilities at a reasonable rent for the

majority of handicapped persons. The problem of mobility creates added hardships for disabled persons who are untrained.

For rural resettlement, rural centres also should be established in rural surroundings. A handicapped person trained in an urban training centre is naturally attracted to urban employment. Training them in cities prepares them for urban jobs which are not always easy to find in a country like India where the problem of unemployment is already great.

The available handicapped man-power in rural areas should also be made use of by the community development programmes. Diversified agricultural methods in a scientific way can create endless employment opportunities for them in rural areas. A well organised community development scheme can absorb numerous trained handicapped persons. Since 80% of our handicapped live in rural areas, it is obvious that the need for mobilizing these resources is imperative. This will awaken among the villagers with their handicapped brethren a sense of responsibility and desire to get over their traditional ways of living through self-help and collective efforts.<sup>63</sup>

The employment creation projects have particular significance for disabled persons in urban areas of developing countries. But in rural areas work on or associated with the land is the major employment outlet and in many cases it is beyond the limited physical capacity of many disabled persons. However, there are many seriously disabled throughout the world who earn a good living from the land. They may require a little extra supervision or guidance which often their families or friends can provide. It should also be remembered that many rural committees in developing countries are self-supporting, with a wide diversity of rural crafts and trades contributing to the maintenance of homes and the well-being of their people.

Apart from crop raising, many are engaged in breeding poultry, goats, pigs, sheep and cattle. Rural house building, home tailoring, shoe and sandal making and cloth weaving are just a few of the tasks in which the rural family must become proficient if self-sufficiency is to be maintained. Therefore, in so far as the resettlement of a disabled person from a rural area is concerned, it is not, in the majority of cases, a question of training him for one specific trade – he needs to be a versatile “jack-of-all-trades”, otherwise he will continue to be a burden on his friends and family. With this in mind, the trend in rural

areas of developing countries is towards the establishment of rural rehabilitation centres where the emphasis is on "all-round" training. The aim of the courses is to provide the disabled with several skills to a sufficient degree to make them self-supporting at the village level. Experience has shown that in the majority of cases they return to their homes, better in mind and attitude and better equipped to maintain themselves and their families.<sup>64</sup>

The rural employment opportunities for the trained blind persons are numerous. The experiments conducted by the Royal Commonwealth Society for the Blind, the Uganda Foundation for the Blind in Africa and the Tata Agricultural and Rural Training Centre for the Blind, India, and many other countries indicate that the blind can successfully perform a variety of operations in farming and other rural pursuits.

Many of these numerous rural occupations for the blind depend on local conditions, easy availability of rural materials, a ready market for the products, organizational ability and the interest of voluntary agencies or co-operative societies.

The major problem will be to get over the initial resistance of the blind themselves. The idea of hard work on the farm might not be welcomed as they have been used to the usual crafts and workshop employment; so they should be persuaded.

The traditional belief of the sighted villagers that the blind cannot work successfully on numerous farm operations should be got over by means of effective demonstrations by successfully resettled blind persons.

Very often the trained blind would have no land or livestock or any other rural assets. So these facilities should be provided to them.<sup>65</sup>

All these and numerous difficulties would have to be faced and overcome. Thus constant guidance and encouragement and initial financial assistance will go a long way for the successful resettlement of the handicapped in their rural surroundings.

## **Adaptation of Jobs**

Very often, the tendency of those engaged in the task of resettlement of the disabled is to concentrate mainly on finding jobs

which, on the basis of their knowledge of job requirements and of the residual physical and mental capacity of the particular disabled person, appear most suitable for him, and on training him, where necessary, equip him for such work. This process of "fitting the worker to the job" has disadvantages in that it tends to restrict the range of jobs which a disabled person can perform. Consequently, many disabled persons with skill, knowledge or experience may be condemned to performing over-simple, unproductive work with the inevitable loss to the community of the training effort invested in them.

Some undertakings have found ways of re-employing disabled workers as a result of some easily effected modification of the work position or machine controls. In addition, the relatively recent development of the science of ergonomics has opened up another avenue of approach to finding jobs for the disabled. It seeks to apply information about human performance to problems of work design so as to reduce the demands made by jobs by removing from them the elements which all human beings find difficult or potentially stressful and, in so doing, to improve productivity.

It is not difficult for the ergonomist to apply his technique to the specialized field of the employment of the disabled - a technique which involves "fitting the job to the worker" through the scientific analysis of work postures, movement, efforts and stresses and through recommendations for modifications in design that reduce wear and tear on the human organism. This ergonomic approach offers many new possibilities for employment of the disabled, since a wide variety of jobs can be modified in such a way that they are no longer beyond the capacity of these persons. Moreover, it enables the resettlement officer to investigate a much wider range of employment opportunities from which the disabled were formerly excluded. The ergonomic approach can also be particularly valuable in the case of the experienced worker who becomes handicapped by accident or illness during his working life. If his original job can be adjusted to meet his changed condition - and this can frequently be done by relatively minor adaptations made at little expense - the employer retains the worker's accumulated skill and experience and the worker does not suffer the demoralization that would arise from his relegation to some "light job" in another part of the establishment. Another great advantage is that jobs can be made available to severely disabled persons who would normally be regarded as incapable of performing any kind of work at all. In countries experiencing acute labour shortages such persons can become a valuable addition to the labour force.

Although the advantages of the application of the ergonomic approach to problems of resettlement of the disabled have already been demonstrated, it is perhaps as well to note that some arguments have been raised against the adaptation of jobs for these persons. The principal ones are that

- the difference between the able-bodied and the disabled is emphasised and employees may be reminded of latent prejudices against disabled workers;
- it is unnecessary because it is not difficult to assimilate disabled workers into employment by operating vocational guidance and training schemes and suitable sheltered workshops;
- the adaptations of a specific job for a particular disabled person limits his freedom of movement to another job or another employer; and
- the disabled worker should be placed in work as similar as possible to that found under conditions of normal employment.

These are not really valid objections because:

- employers usually accept a business-like solution to a technical problem affecting the labour force;
- while disabled workers can be assimilated into employment by the methods mentioned, adaptation of jobs widens the range of employment available to them and makes it possible to use their skills and capacities to the greatest advantage;
- disabled workers employed in jobs adapted to their needs, which make the best possible use of their capacities and skills and provide a satisfying remunerative activity for them, are not usually so anxious to change their jobs; and
- "normal" jobs are constantly being adapted for all workers (for example the electric typewriter and the fork-lift truck are only modified forms of the standard typewriter and the conveying truck respectively, designed to enable the workers concerned to perform their tasks more efficiently and easily). The application of the same principle to jobs for disabled workers cannot be said to remove the latter from the field of "normal" employment in the way in which

this would occur if they were employed in sheltered workshops designed to protect them from "normal" employment conditions.<sup>66</sup>

## 1. The Need for Medical Guidance

Vocational rehabilitation workers, employers, design engineers and others without medical training cannot know the precise physical limitations caused by a particular disability in a particular person. It can be ascertained only by obtaining authoritative medical advice. The importance of this point in job adaptation cannot be over-emphasised.

The medical report in each case should indicate clearly the limitations of physical and mental functions affecting the disabled person. From this starting point it will be possible to establish what kinds of jobs appear basically to be still within the capacity of each handicapped person. As the possibility of adapting a job to suit his capacity should always be borne in mind, the doctor should be asked to suggest, in relation to any job which the disabled person could do if adaptations were made, what features should be removed from the job so that he could:

- perform it efficiently;
- be of no danger to himself;
- be of no danger to others; and
- not aggravate his disability.

The best results are likely to be obtained if the employment officer and the doctor work as a team, concentrating their main attention on the functional requirements of jobs in relation to the disabled person's residual capacity.

For purposes, of job adaptation it is essential to find out in exactly what ways the disabled person's working capacity is limited, in order to compare these limitations with the demands of various jobs.

What is needed, then, is a method of recording information about both the handicapped and the job which will make it possible to compare directly what a particular person can or cannot do with what any particular job would require him to do. Such a comparison will immediately show which job demands are likely to cause him

difficulty and will make it easier to see how the job might be adapted so as to avoid these demands or at least reduce them to a tolerable level.

There are many ways of recording this sort of information but whatever method is adopted it should meet the following basic requirements:

- the record should describe functional factors affecting working capacity and should do so in a way that is easily understood. Those dealing with a disabled person will want to know, for example, that he cannot use his wrist properly, not that he is suffering from "Tenosynovitis". A statement that a worker's blood pressure is 185/95 will be of little use to them unless they are told also what this means in terms of his ability to lift, carry, stoop, run, work at a height and so forth;
- If concepts and units of measurement are employed they should be capable of objective definition and unambiguous interpretation;
- the method used for appraising jobs should complement that used for appraising workers so that the two may be used in conjunction;
- the information required should be balanced so as to avoid over-emphasising a narrow range of physical attributes at the expense of other equally important ones.

## **2. Recording the Information obtained**

Bearing these points in mind, the necessary information is best provided through:

- a medical report on the individual's capacity and limitations;
- a job requirement analysis giving the physical and other demands of particular jobs.

If the information recorded on the two suggested documents is complementary, points of disparity become readily detectable. For example, if Mr. A's medical report indicates that he cannot use his left leg and the analysis of job B demands such activity, it is immediately clear that Mr. A will not be able to perform job B, unless it is possible to adapt it so as to remove the need for activity with his left leg.

It is obvious that the detection of disparities between capacity and job requirements becomes easier as the breakdown of the information into detailed components increases.

### 3. Job Analysis

A job may be defined as a group of related tasks requiring the full-time services of one individual. To obtain a complete analysis of a job the analyst must find out:

- what the worker does;
- how he does it;
- why he does it;
- what skill is involved in doing it.

Some of the special points related to the placement of the disabled and the adaptation of jobs for them are:

- (i) The analyst must study how the job is done much more closely than would be necessary if he were analysing a job for the purpose of writing a definition of it for use in an occupational classification or similar documents. For example, the definition of the job of a machine-tool operator may include; fastens metal in chuck, jig or other fixture on machine; starts machine and if the action is not completely automatic, manipulates hand wheels to feed tool to metal or metal to tool; observes progress of cutting, and stops machine and call machine setter in the event of a malfunction; stops machine when cutting is completed (if the machine is not fully automatic) and withdraws part; checks accuracy of work with measuring instruments; cleans and oils machine.

This definition describes accurately some of the tasks carried out by a machine-tool operator but, if it is proposed to place a disabled person in such a job, the selective placement officer needs to know the precise physical requirements involved for the worker in carrying out these operations, such as:

- must he stand up to fix the metal in the chuck?
- does he have to lift the metal; if so, how far, how high and how much does it weigh?
- does he start the machine by pulling a lever, operating a foot pedal or pressing a button?

- whichever method is used, can the machine be started only by using one particular limb (e.g. right hand, left foot)?
  - does he have to turn a tap or wheel to control the flow of cutting lubricant?
- (ii) Since a worker who is physically capable of sitting and operating a machine cannot do so unless he can get to it, the analyst must also study the demands made on the worker by the job's location.

For example, how far does he have to travel to work? Does he have to walk far to reach washrooms or exits? Must he climb stairs, to collect material or reach the canteen? Does he have to cross a danger area where good vision and hearing are essential to safety?

- (iii) Similarly, the analyst must also study the conditions under which the job is performed, recording whether they are, for example, excessively hot, cold, humid or dry, dusty, noisy etc.

In short, a very detailed analysis of job requirements is essential if there is to be satisfactory collaboration between the selective placement officer and the ergonomist.<sup>67</sup>

No two individuals suffering from similar handicap can necessarily have equal capacities and same aptitude for job performance. Adaptability will, of course, vary from individual to individual and depend on a number of factors which go to make up human personality. Sometimes it may be necessary to arrange for slight modifications to suit a handicapped individual, e.g., rearrangement of tools, providing some extra gadgets to overcome disability, or slight changes in work processes. Ideally, any such arrangement should be made before the handicapped starts working.

Once the results of the appraisals of the disabled worker and the job have been correlated, the job activities which the worker cannot perform can be clearly identified and the possibilities of job adaptation can be studied.

It is relatively easy to determine what adaptations are required. In many cases only simple adaptations are necessary and can be carried out inexpensively. Job adaptation does not involve for the disabled worker long periods of training and practical experience.

Once it is known what modifications are required, almost anyone from the senior production engineer to fellow workers – and even the disabled person himself – may suggest how the modification can be effected.

The basic principle governing all job adaptations is to remove completely, or reduce to a tolerable level, the job demands which the disabled worker cannot meet.

In elaborating this principle it is well to note that the demand of jobs can be divided roughly into four types:

- those calling for some kind of action by the worker;
- those in which the worker must recognise signals of some kind that indicate how, when and where to take action;
- those in which the worker has to decide which form of action to take; and
- those which are a consequence of the environment in which the job has to be done.

Consideration of these four type of job demands leads to the establishment of four general working principles.

- (i) if an action involves the use of a part of the body which a worker's handicap prevents him from using adequately, and if the action cannot be eliminated, the means by which the action is taken should be altered so that either:
  - the action is transferred to another part of the body which can cope with it; or
  - some less demanding means of taking the action with the affected part of the body is devised;
- (ii) if action has to be taken in response to signals received normally through a sense (e.g. vision or hearing ) which is defective, it may be possible to convey the signals in another way or to provide aids to compensate for weakness of sight, hearing etc;
- (iii) if the individual's impaired capacity prevents him from making the decisions required:
  - it may be possible to simplify the decisions to a tolerable degree; or

- if this is impracticable, it may be possible to reorganise work so that another worker takes the more important decisions;
- (iv) if the working environment involves stresses or hazards with which the handicapped person cannot cope, it may be possible to remove them at the source or to protect the worker from them.<sup>68</sup>

"The physical working environment" comprises all those things which impinge on a worker at his place of work. The tools and machines he may use are basic components of the job and not part of his environment, but the contents of the air he breathes, its temperature, humidity, etc., are all parts of it.

Measures which may be taken to remove or ameliorate features of the physical working environment which may bar certain types of handicapped persons from undertaking the work required are:

- (1) exceptionally high temperatures, (2) excessively low temperatures, (3) humidity, (4) noise, (5) polluted air and toxic materials, (6) working at heights or near dangerous machinery, (7) working hours.<sup>69</sup>

The practical application of these principles may be illustrated by an actual case.<sup>70</sup> A manual press operator sustained head and arm injuries in an automobile accident which left him permanently handicapped in the following ways:-

- while he could move his arms and hands so as to perform normal handwork, his ability to exert force with his arms was substantially reduced;
- his close vision was affected so that he could not easily and quickly locate openings in jigs into which his job required him to guide press tools;
- his ability to count was reduced; and
- loud noises caused headaches and considerably reduced his working speed.

His problems were dealt with as follows:

- the need for the use of strong force with his arms in manipulating the press was reduced by transferring the action to two foot pedals located in such a way that they could be operated from a sitting position; to avoid accident, these

controls could be operated only when his two hands were on platforms located near the tool but sufficiently far away to prevent the possibility of injury by the descending tool;

- a simple, inexpensive system of adjustable "master" locating pins and stops was constructed on the press table; when these were set at the beginning of a run of work he was able to locate the correct position of the jig by feeling instead of seeing;
- the need to count the number of components pressed into batches of 25 was eliminated by constructing inexpensive wooden frames, each containing 36 pigeon holes holding 25 components each (sufficient to cover about two hours' production) and placing one of them slightly to the left of the machine;
- he was provided with ear plugs to reduce the machine shop noise.

At a cost of less than US \$ 250 the firm was able to retain the services of a useful worker whose replacement in a period of full employment might have proved difficult. The induction and training of a replacement would, no doubt, have cost almost as much.

For the severely disabled, the aim of ergonomics, i.e., fitting the job to the man, will need to be reversed. The concern will be to find a job that the individual can do, and use ergonomic techniques to relate the tasks involved to the functional and intellectual capacities of the individual. Some factors that need consideration are as follows:-

- where can the individual work; home/hostel/elsewhere?
- is transportation necessary and /or possible?
- what is the type of society where the individual is to work, and what are the job opportunities in that area?
- what is necessary in terms of support equipment for him to do a particular task?
- can the location of his work area accommodate this equipment?
- If so, who provides and pays for it?
- who installs it and services it?
- how is the work delivered and collected if this is necessary?
- is the presence of an able-bodied person necessary?

- can the continuity of the work be assured?
- does the physical condition of the individual allow him to work for continuous periods or not?

Ideally, less severely handicapped members of society should be able to take their place in open industry. To make this possible to a greater extent than at present certain factors must be considered. These factors have been outlined at length by a working party set up by the International Ergonomics Association to provide a check list for an independent observer to evaluate work situations. A selection of the questions that need answering in order to fit the job to the man is as follows:

- does the task demand a heavy muscular load?
- can the displacement of the centre of gravity or rotation of the body be avoided?
- does the task require great accuracy of movement?
- are the characteristics of the hand controls compatible with the forces required to operate them (shape, size, surface) and are the forces acceptable?
- is the work space adequate?
- does the position of equipment, controls and work bench permit a satisfactory posture and correct control by hand and foot?
- is there provision for the worker to sit, and is the available chair satisfactory in its design?
- are foot rests and or supports for arms, hand, back, available if required?
- does the task impose high visual demands?
- is colour discrimination needed?

These are just a few of the questions that need answering, and have been selected more or less at random to show the range of the ergonomist's interests. The answers to these and all the other questions will determine firstly the type of people best suited to the job, and secondly, whether the job allows the person to work at maximum efficiency and without detriment to his health. The designer of a work station will need to know not only what questions to ask, but also how to answer them, and how to apply the information the answers give. <sup>71</sup>

In attempting to promote job adaptation schemes for the disabled, the rehabilitation team has to decide:-

- for whom work should be adapted?
- what parts of the job(s) need adapting?
- how the adaptation should be effected?

When action is being taken within a firm in connection with its own disabled workers, four specialists are likely to be very closely involved in the promotion and implementation of the scheme:

- the medical officer, whose role is to identify the handicaps and state them in terms related to job demands;
- the personnel or employment officer, whose role is to identify the workers for whom adaptation may be necessary, to match residual ability with job demands and to suggest jobs which, after adaptation, may be suitable for the workers concerned;
- the production or methods engineer, or similar officer, whose role is to consider how the job may be adapted and to organise the essential development work; and
- the works manager, whose role is to co-ordinate the efforts being made, to interpret them and the policy involved to the top management, and to secure the necessary financial support and the allocation of the necessary personnel.<sup>72</sup>

Besides these, the other staff members like, physiotherapist, industrial psychologist, social worker and placement officer also will have to play a useful role.

While all these specialists have vital roles to play, it is essential that one of them should be made responsible for initiating action when his attention is drawn to a case likely to benefit from job adaptation.

Though no rule can be laid down, it would seem to be generally desirable that the "responsible officer" should be the works manager because:

- in cases arising amongst employees of the firm, his authority would, no doubt, normally be sought;
- he is in the best position to "sell" the idea of job adaptation to supervisors and others in the firm and to induce them to make their own contribution to it; and

- in cases brought to notice by placement officers or other officers of government services or voluntary bodies he would most probably be the contact person in the firm with whom questions of the possibility of job adaptation would be discussed initially.

In highly industrialised countries ergonomic principles are being increasingly applied to all kinds of work so as to do away with the more laborious tasks, simplify jobs and increase production. It should not be difficult to achieve considerable success in securing work for disabled workers in jobs which have already been adapted for able-bodied workers and in obtaining agreement to the adaptation of others, particularly in countries enjoying full, or practically full, employment.

The situation is likely to be different in countries in the course of development, particularly those where there is a considerable degree of unemployment and under-employment. Where industrial development is limited and labour supply considerably exceeds demand, it will be difficult to persuade an employer to agree to the expense, limited though it may be, of adapting a job to suit the needs of a disabled worker - unless, of course, the worker is skilled and experienced - when he can readily meet his requirements by employing able-bodied workers and without incurring any such expense.

This fact does not excuse rehabilitation workers from making efforts to secure co-operation. They should explore every avenue and, in particular, they might devote considerable attention to the feasibility of adapting jobs in agricultural and similar work and in cottage and rural industries, which may well offer better employment opportunities for the disabled.

#### **4. Financial Aspects**

Experience has shown that the cost of adaptation in many successful cases has been surprisingly low.

Where a firm is able to retain an employee disabled in its service by adapting his job to suit his residual capacity, it is very likely that the cost of the adaptation will be less than that of recruiting a new worker and giving him the necessary initial induction training. In addition, the problem of recruiting a new qualified worker, which may be difficult in countries enjoying full employment, and even more so in developing countries, can thus be avoided.

Where a firm adapts job to provide employment for a disabled worker not previously in its employment, the cost of the adaptation must be added to that of the workers recruitment and induction training, and consequently some extra expense is necessarily incurred. Nevertheless, in assessing labour cost in such cases it should be borne in mind that the extra expense incurred in recruiting a disabled worker may well be offset by the fact that such a worker is generally keen to do his best, is less likely to change jobs and tends to be less prone to absenteeism.<sup>73</sup>

## **Jobs Suitable for the Disabled**

The orthopaedically handicapped persons can perform a variety of jobs commensurate with their residual abilities and other qualifications. However, the specific jobs for each individual may vary according to the nature and severity of his disability. The opportunities for the orthopaedically handicapped in the fields of agriculture, industry, commerce and professions are numerous. In general they can be employed in almost all the jobs performed by the non-disabled with adequate training and necessary adaptations in the working environment and machinery.

It has been generally accepted that blind persons can perform any occupation for which sight is not needed after receiving sufficient training. Several fields of employment are open to the blind. In addition to agricultural and rural employment – and this has the greatest possible scope in under-developed countries – the blind are employed in sheltered workshops, in open industry, in organised vending stands or sales kiosks, in running petty shops, under home workers' schemes, as teachers and supervisors in blind welfare institutions as professional men in fields such as salesmanship, insurance, teaching, publicity and propaganda, in commercial jobs, as telephone operators, stenographers or dictaphone typists, in semi-professional occupations such as masseurs, or in the learned professions such as school and university teachers, lawyers etc.<sup>74</sup>

Given a work for which hearing is not essential, provided there is understanding and co-operation from the part of fellow workers, the majority of deaf persons are capable of working in competition with those with normal hearing to the satisfaction of themselves and their employers. It is also experienced that in some types of jobs they can surpass the achievements of persons with normal hearing.

## **Legislation**

According to the International Labour Organisation the enactment of legislation is one means open to governments for ensuring that their disabled citizens are provided with employment opportunities. Measures of this nature have been taken by a number of countries over the past 50 years, in general, in one or more of the following forms:-

- (a) the imposition of an obligation on employers to employ a fixed number or a quota of disabled persons;
- (b) the reservation for disabled persons of certain type of work in specified industries or activities;
- (c) the reservation of posts for disabled persons, and /or allocating them special priorities or preferences.

The ILO publication 'Basic Principles of Vocational Rehabilitation of the Disabled' succinctly summarizes the arguments for and against legislative provisions for the employment of the handicapped.

### **Arguments in favour**

- (a) It provides evidence that the state supports in principle the idea of the employability of the disabled.
- (b) It provides the means of introducing employers to the idea of employing the disabled.
- (c) In general when employers are required by law to take certain measures, for example to employ the disabled, they have the satisfaction of knowing that all firms are being treated alike and that there is no unfair discrimination.
- (d) The reservation for the disabled of specified occupations provides opportunities for employment in simple routine tasks for those disabled persons who might otherwise remain unemployed because they lack the capacity to perform more skilled or more arduous work.

### **Arguments against**

- (a) That compulsion is wrong in principle.
- (b) That disabled workers placed in this way might be less efficient than other workers.

- (c) That disabled persons placed in this way may feel that undue attention is being focussed on them.
- (d) That in times of trade recession or redundancy from some other cause, legal obligations would be unlikely to restrain employers from discharging disabled persons.

Some of the necessary factors in the successful operation of legislative measures are as follows:

- (i) it is desirable that provisions should be such as will avoid the displacement of existing non-disabled workers;
- (ii) it is necessary to have a simple practicable definition of disabled persons and machinery for effective registration;
- (iii) there must be a specialized employment service to assist employers in meeting their obligations;
- (iv) there is need for some form of inspection or enforcement, without which any compulsory measures would not function or bring the desired results.

## Forms of Legislation

The various forms of legislation which have been adopted during the past few years include:

### *(i) A Quota*

The general principle adopted is the compulsion of every employer, or those having more than a fixed minimum number of employees to employ a fixed minimum number or percentage of disabled persons. In some cases there is also protection against loss of employment.

### *(ii) Designated Employment Schemes*

Measures of this nature imply acceptance of the principle that certain occupations are especially suitable for the disabled and should be reserved for them.

### *(iii) Reservation of Special Posts.*

This differs from designation of employment in that most of the measures concerned make provision for reservation of specified posts in specified industries, public services, etc.

#### *(iv) Allocation of Priorities and Preferences*

Most of these measures afford priority or preference to specified disability groups which present particular problems, eg., disabled ex-servicemen, the blind, workers who have been victims of industrial accidents etc.

As, any compulsion on employers whatever its form should have the aim of providing employment opportunities for the disabled, it follows that administration and enforcement must not alienate employers and so militate against the vocational rehabilitation service or the general employment service.

With this in mind, it could be argued that officers whose duty it is to enforce statutory obligations should be divorced from the placement service.

On the other hand, there is a strong weight of opinion, based on practical experience, that, provided they are carried out in a spirit of helpful co-operation, visits to employers for the purpose of enforcing quota obligations can lead to the identification of vacancies suitable for the disabled.

Whether or not compulsory schemes are necessary in a particular country will, of course, depend upon the circumstances in that country. Even where they are necessary, they are more likely to come under criticism than are voluntary arrangements for the employment of the disabled, not only on the grounds of compulsion but because it can be argued that they offend all the principles of selective placement. These objections are less likely to have force, if employers and the authority enforcing the obligations never lose sight of the fact that the main purpose of legislative provisions is to secure for the disabled a fair share of such employment opportunities as are available. Selective placement techniques should ensure that disabled persons are placed on their merit so that the large majority of them can deservedly be regarded by their employers, not as legislative liabilities, but as valued workers who can compete on equal terms with the able-bodied.<sup>77</sup>

“There’s no question that handicapped people are beginning to find prestige in their work, instead of merely making a living” says Miss Freda Singer, a case worker with New York State’s Division of Vocational Rehabilitation. “The key to this trend is that businessmen

are learning not to judge a capable employee by his physical deficiencies, but rather by his mind."<sup>78</sup>

Every individual is entitled to an opportunity equal to his abilities. Today, almost every job can be performed by a handicapped person, if special attention is given to its physical demands. It's what a person is left with that counts, not what he has lost.

As Theodore Roosevelt has so beautifully said "No man needs sympathy because he has to work..... For the best Prize life offers is the chance to work hard at work worth doing."<sup>79</sup>

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## CHAPTER XVIII

### SOCIAL INTEGRATION

Social integration denotes the process of adjustment of the disabled to his social environment as well as the acceptance of the disabled persons by the society.<sup>1</sup> The term "Integration" in this context means ending or minimising segregation and deep-rooted misunderstandings, suspicions and prejudice between the handicapped and the non-handicapped sections of population. It enables the disabled to attain their rightful place as equally important and contributing members of society by attempting to remove areas of conflict and promoting harmonious ties between them.<sup>2</sup>

A disabled person runs the risk of isolation in the community and segregation from other people. Psychological and sociological investigations show the impossibility of improving the individual resources of a person if he lacks stimulating contacts with other human beings.<sup>3</sup> One of the most important requirements for the disabled is to receive full support from their fellow-beings so that they can live as normal a life as possible in the community and in co-operation with others.

Rehabilitation is a process which should begin soon after the onset of handicap and end only when the handicapped person has attained a degree of adjustment and has been helped to become integrated in the community to which he belongs.<sup>4</sup>

As human beings the basic aims in the personal life of the handicapped and the non-handicapped are the same, but the difference is only in the degree and the manner in which they attain these goals.

They are:

- (1) maximum use of one's physical faculties.
- (2) emotional satisfaction to the fullest possible extent in one's personal and social relations.
- (3) economic self-reliance.
- (4) social acceptance as an active, useful and contributing member of society.<sup>5</sup>

The issue of segregation versus integration of the disabled in society presents a complicated dilemma. While segregation sounds inhuman, integration is not always the easiest thing to achieve. For a disabled to become integrated in the "normal" society, he must compete on an equal footing with the non-disabled and even prove that he could be better than the average non-disabled. Not only must the disabled be able to adapt to a world made for the non-disabled, but they must do so in terms of the standards expected by the non-disabled. Some of the disabled think that integration too has been interpreted from the point of view of the non-disabled and is therefore not totally advantageous to them. And some of the most verbal among them say that integration cannot be one-sided.<sup>6</sup> Not only must the disabled adopt and adapt to some of the values and norms of the non-disabled, but the non-disabled must also adopt and adapt some of the values and norms of the disabled. Each group must partially accommodate the other; there must be fairly equal mutual exchange. Otherwise it is not possible for the disabled ever to be really accepted on an equal basis in their own right and to contribute to the formation of societal values and norms. A truly modern society is a society that offers as many options as possible to all individuals, regardless of age, sex, health, status, social class and racial or ethnic background. It should be one in which this range of options is acceptable and desirable to all and where people can be truly free to take any of these options without having later to pay a social or psychological price. Ideally the disabled should be accepted as "different but equal".<sup>7</sup>

Constantina Safilios-Rothschild analyses the process of integration on micro-societal level and examines the interaction between one disabled and another disabled, as well as between a disabled and a non-disabled. Interaction with other disabled persons usually seems to present no problems to a disabled person but is, on the contrary, quite helpful in making it easier for him to accept his predicament. The "positive" influence of such interaction seems to occur either

through identification with another disabled afflicted with the same type and degree of disability or through a comparison of his disability with that of a more seriously incapacitated disabled which produces a feeling of being "much better off". In the latter case, however, we do not know the psychological mechanism operating within the disabled person which permits him to feel that his affliction is the lesser, and it would be important to assess whether or not he feels better because his morale has been boosted by considering the more severely disabled as inferior to himself. It has been found for example, that some of the visibly but not severely disabled who can hold a regular job, interact successfully with normals, and marry a normal, are sometimes making a distinction between themselves and the severely disabled for whom they think that segregated services, activities and a generally segregated place in society would be most appropriate.

Whatever the psychological mechanisms operating, it has been seen repeatedly that a disabled person who is quite threatened and "paralyzed" by his affliction or feeling quite devalued by it may finally find the strength to "accept" his disability after having met another disabled whom he can esteem and admire as a human and social being regardless of his disability. Through his social acceptance and approval of another disabled and through his identifying with this well-functioning and otherwise "normal" person, he may eventually accept himself and his disability and continue to live with the capacities that he has.

However, the most crucial social interaction usually is with the non-disabled. For an individual's reaction to his disability is dependent not only upon his pre-disability self-concept and social position, but upon the reaction towards his disability on the part of his significant others and the nature of the changes brought about in their usual mode of interaction. Changes in the mode of interaction with all other people in primary or formalized encounters will also influence the disabled's adjustment to his disability, that is, the extent and pervasiveness with which the change in body image will become incorporated into his self-concept. It is not usually enough for a disabled person to cope with the problem of his disability within himself. Throughout the process of trying to cope with it and after it has been provisionally settled internally, he continuously tests out his mode of reacting with others in order to validate it socially through their acceptance and approval. Only through such consistent and continuous

social approval does the disabled's mode of adjustment to his disability become crystallized and permanent.

The disabled try very hard to secure an easy and natural interaction pattern with the non-disabled beyond the often easily granted "fictional acceptance" and he is reported to be forced to develop an entire gamut of necessary behavioural manipulations in order to achieve this. The reason why the establishment of a "normal" interaction with the non-disabled is of crucial importance to many (but not all) disabled is the fact that such an interaction would reassure the involved disabled that he can be socially accepted despite his disability.

There is evidence that the disabled are poorer than the non-disabled in social perception and that they have poor resources for dealing with the non-disabled. They do not have the opportunity to develop interpersonal skills because they have few friendships and little social experience. Therefore, the non-disabled should also be educated to learn to cope with the fears and anxieties that the disabled arouse in them. They would then be able to act naturally towards the disabled, and interaction would accordingly be less strained and rigid.

Some writers have mentioned that exposure to disabled individuals and extensive contact with them would diminish the non-disabled's degree of prejudice and resulting discrimination and ease interpersonal relations between the disabled and the non-disabled. Not all types of contact, however, produce this effect. It seems that Allport's typology of contact holds true, since the result depends upon the frequency, duration, variety, and especially the type of contact that the non-disabled have with the disabled. Only contacts in which the minority group has equal status with the majority group and which are voluntary and "real" represent the best conditions for the breakdown of discrimination and the formation of close relationships. Thus, practitioner-client relationships are ineffective, whereas contacts through friendship represent the ideal. This conclusion unfortunately leads us to a vicious circle, since those who have been once able to have warm and meaningful contacts with the disabled can revert it again in the future.<sup>8</sup>

In a family where the parents are emotionally secure, the hardships in bringing up a disabled child are faced squarely and the child is well integrated in the family circle. Overt complete rejection is rare.<sup>9</sup>

In the case of an individual who is congenitally blind or loses his eyesight in the early years of his life, the efforts for his social rehabilitation will have to be made by his family members who, by their realistic attitude towards him, can give him a right start in his life. As a first step towards his social rehabilitation, they will have to overcome their natural frustration caused by his loss of sight. If they fully accept his handicap and treat him as a normal child as far as possible, they would greatly contribute to his social integration. For this purpose it is imperative that the family members – specially the parents – should avoid the two extremes of total rejection and over-protection of their blind child. It is only by this realistic psychological approach that they can save him from developing an inferiority complex of over-demanding attitude towards others. If a blind child loses his self-confidence owing to rejection on the part of his parents and other family members, or if he becomes too much demanding because of being over-protected by them, this would greatly hinder his social integration.<sup>10</sup> His family members can considerably help him in overcoming the limitations caused by his blindness if they adopt a constructive approach to him.

Those who are congenitally blind or lose their sight in early years adjust themselves gradually to their handicap without experiencing sudden shock. This, however, is not the case with those who lose their vision in adolescence or in later years of their lives. Such persons are greatly shocked and extremely frustrated when they are suddenly deprived of their sight upon which they had so far completely depended for most of their daily activities and also for earning their livelihood. In their frustration they begin to think that without vision they cannot do anything worthwhile in their lives; so they are often inclined to regard themselves as a burden on their family and the community.

Now, it is quite evident that such persons urgently need a complete rehabilitation covering all important aspects of their lives. First of all, by some examples of well-adjusted blind persons, they should be convinced that most of the limiting effects of blindness can be overcome to a great extent by a proper training of other senses. Once they are able to overcome their initial shock and frustration and regain their self-confidence, they should be trained in special rehabilitation centres for enabling them to perform their daily activities by the help of their remaining senses. A special rehabilitation course covering mobility and orientation, cooking, domestic work and all

important skills of communication must be introduced for this purpose. It is imperative that, if and in so far as possible, the later blind should be trained and encouraged to do the same jobs that they were doing before the loss of their vision. This would enable them to follow their normal routine of life to which they have so far been accustomed, and it would also greatly facilitate their social integration.<sup>11</sup>

Blindness demands adjustment of the blind individual with his own self, with society and with the reactions which others express overtly on seeing a blind as their reactions tend to upset the blind psychologically. Adjustment problems arising directly due to blindness and as repercussion of blindness are to be faced by the blind themselves. Society must realize its responsibility of helping the blind to help themselves.<sup>12</sup>

However, a handicapped person weeps not so much because of his disability, as because of the fact that despite his capacities, efficiencies and abilities, he is neglected everywhere in his family, institution and society.<sup>13</sup>

## **Attitudes and Integration**

Attitude is, as it were, the soul of integration. Enlightened attitude means scientific and complete integration. Attitude is the deciding and crucial factor, which decides whether jobs are given to the disabled or not. Attitude has four different facets.

These are:

1. attitude of the nation or the government towards physically handicapped persons.
2. attitude of the public or society towards the disabled.
3. attitude of the family of a physically handicapped person towards the disabled.
4. attitude of a physically handicapped person towards his disability, the family, society and the nation.<sup>14</sup>

For the achievement of complete and scientific rehabilitation and integration it is imperative that the four constituents – nation, society, family and the disabled – should assume an enlightened attitude towards this issue. Of these the attitude of the disabled, plays a central role. Even if a proper attitude is developed at the first three

levels, integration cannot be complete if the disabled person does not accept his disability. Acceptance means realism. If the disabled could find a deeper meaning in the following prayer of St. Francis of Assisi, their adjustment process would be more easily facilitated:

“O Lord, grant me the serenity  
To accept the things I cannot change.  
The courage to change the things I can  
And the wisdom to know the difference.”

Harold Russell, a double hand amputee, sums up the philosophy of acceptance thus: “People frequently marvel at the things I can do with my hooks. Well, perhaps it is marvellous. But the thing I can never cease to marvel at is that I was able to meet the challenge of utter disaster and master it. For me, that was and is the all important fact – that the human soul beaten down, overwhelmed, faced by complete failure and ruin, can still rise up against unbearable odds and triumph.” Mr. Henry Viscardi Jr, President of the Human Resources Centre, observes in the foreword to the book “The Measurement of Attitudes towards Disabled Persons”: “Today it is recognised in the field of rehabilitation that attitude and motivation are significant factors in the adjustment of the physically disabled. A disabled person who is highly motivated and has appropriate attitudes will behave very differently from one who is not motivated and has a negative attitude.”<sup>15</sup>

The disabled who wishes to have a real life must accept his mode of life, his abilities and disabilities and the people around him. It is very important that the disabled does not look upon his situation as a static one. He must give more emphasis to his abilities than to his disabilities.<sup>16</sup> He is a man with certain abilities which even some of the non-disabled may not have. The same should be recognized by the non-disabled.

Of importance to the disabled himself is his readiness to demonstrate that he has abilities. Many disabled people are anxious and look for a social system with complete security. They have very often been persuaded that such a security is necessary for them. Many of the disabled distrust their fellows as well as themselves. Many therefore ask for some type of institution which takes care of them and remain satisfied there. From sociological and psychological point of view such closed institutions or situations are detrimental to their good. Investigations show that it takes years of hard work to

rehabilitate and resocialize a person who has spent several yeras in such an institution. The disabled must be taught to take full responsibility for his actions and choices. All general nursing systems in which the disabled person is sequestered must be avoided. The right way is to train the disabled to take care of himself. Efforts must be made to help the disabled to find his own way by making it possible for him to live in integration with the non-disabled people. This process should start in pre-school stage and continue during further schooling. Integrated flats for disabled adults go a long way in creating a climate of integration in daily living. More difficult but of equal importance is to find a way of integration during working hours and in leisure time activities.

The interest and readiness shown by doctors, politicians and many others to spend money and other resources on giving the disabled a real chance for a meaningful social life, stand in glaring contrast, to the interest shown in giving resources to advanced medical measures. Most of the money spent on medical treatment and medical rehabilitation will be of little value if society fails in its duty to enable the disabled person to assure his due place in social life and give him the possibility to achieve it. Most people look upon integration as being a question of technical problems. They believe that integration will be initiated automatically if only we give the disabled technical aids, adapted flats and remove the obstacles confronting him when taking his place in society. All these measures are of considerable importance, but the results of several investigations compel us to emphasize that integration is a psychological process and that most disabled people require as much psychological help as technical aids.<sup>17</sup>

While organizing social activities for the disabled people we easily forget that integration is a time consuming process. While living in the sheltered environment of schools or rehabilitation clinics many disabled believe that their lives outside these institutions will automatically become easier and better than inside them. Very few have had a real chance of living independently and must therefore be trained gradually for such a way of life before they can take the final step out of institutions and into society.

In the systems of nursing and integration the disabled person has to play several different roles. In the customary institution he is a passive receiver of help and assistance. When living freely and independently, the disabled person, like all others, has to ask for

service. Investigations show that many disabled people starting their integrated lives find it difficult to exchange the passive role of a receiver for the active one of ordering service.<sup>19</sup> Nurses and service assistants have the same problem although the direction is here reversed. A well-educated and well-trained nurse who is familiar with her role of thinking and acting for the disabled will have considerable psychological trouble when she has to take her place as a service assistant to the disabled. If the disabled as well as the service staff are not trained for these new roles the possibility of a real integration will be impeded. This training is therefore, a very important part of the rehabilitation process.

Wilfrid B. Race of the Canadian Rehabilitation Council for the Disabled cautions that the disabled person must not seek to do things beyond his physical capacity because, by failing, he will bring chronic frustration upon himself, and will evoke scepticism from an onlooking public. By so doing, he performs a disservice to the disabled population at large.

Race further observes that there are certain universal human proclivities which impose certain kinds of problems upon the physically handicapped. Paramount among these are standards of normality and the consequent rejection or persecution of those who deviate from the norm. Physical beauty, stamina, strength, and powers have been standards of social acceptability and ascendancy set up by people everywhere and considered as essential to the maintenance of the life process itself. As a result, the occurrence of a physical defect or incapacity can have a tragic effect upon the life of an individual and his dependents. Certain social organizations have a built-in social security programme whereby the needs of the weak and the dependent are met by the general resources of the group, but generally, the lot of the disabled has been barren and isolated. Additionally, certain taboos have often surrounded the incidence of physical disability, and its occurrence has often been interpreted as a manifestation of the wrath of the gods. Even today, in the most sophisticated societies, one occasionally hears a distraught parent of a handicapped child lament: "What did we do to deserve this?"

It is incumbent upon all physically disabled persons to be aware of the fact that almost all those whom they encounter are also disabled – handicapped by their unfamiliarity with persons who are physically different from themselves, and unsure as to how to react. It is important

for the disabled person to accept the "incapacity" of the other, and to know how to deal with it, as it is for the non-disabled person to learn of the specific difficulties and sensitivities of the disabled. In far too many cases, the disabled person does not realize the profound emotional reaction which his presence can incite in the uninitiated, with the result that he frequently over-reacts to what he interprets as hostile, insulting, or condescending behaviour. Rather than endeavouring to see the situation from the other's view point, he sees only evidence of discrimination and bias - both of which can always be detected if sufficient effort is made.

The disabled person, therefore, must develop the skills necessary to put others at ease, and to be patient and calm in embarrassing situations. He must be diplomatic, tactful, and resourceful, always bearing in mind that the impression he creates may well serve as the model by which other disabled people are judged. From this standpoint, every disabled person serves as an ambassador to society at large - a responsibility that can become an exciting and rewarding challenge.

The second aspect of social behaviour is similar to the first, but involves the active participation of a larger constituency, and pertains to the whole problem of social integration. It is fine to talk about the merits of personal example, but if there are insurmountable barriers to the process of participation and achievement, there can be little substance to that ideal. Integration means much more than the mere adaptation of physical facilities to meet the mobility requirements of the disabled. It means the opening of channels to allow for the totalization of the human experience, according to the needs, aspirations, hopes and inclinations of each individual. It is the maximum freeing of the human spirit and intellect to seek their own rewards in communion with others of similar convictions. It is the provision of choice and variety to the fullest extent available within the community. It is the opportunity to grow culturally, morally, spiritually, intellectually, physically and socially.

What we have tended to lose sight of is that the disabled individual is as much an "individual" as the non-disabled individual. We are too prone to speak of the disabled as a collectivity of human beings, suffering from some kind of physical affliction which binds them together in some ill-defined common cause. In the paper prepared for the International Seminar on "Issues in Social Planning for the

Physically and Mentally Disabled," Wilfrid B. Race endeavoured to explode this myth. Suffice it to say here that the disabled people come in as many varieties as do all other people, and this fact should be the starting point of rehabilitation policy and programming.<sup>19</sup>

In the case of the physically handicapped, although the assistance of private and public agencies at the state and national levels is both valuable and desirable, the community's understanding of the basic needs and problems of the physically handicapped is most important. The government may sketch out the plans, suggest ways and means, assist with finances and even provide leadership and technical knowhow; but fundamentally the job could be effectively realised only by the community through its understanding and support of such programmes as planning for rehabilitation facilities, personnel services, recreational opportunities, job possibilities etc.

The success of any rehabilitation programme will depend much on the attitude of the younger generation towards the integration of the disabled in the community. Hence a small survey was undertaken at the All India Institute of Physical Medicines and Rehabilitation, Bombay (1973) to assess the attitudes of the disabled and the non-disabled towards one another.<sup>20</sup>

Taking 18 to 45 as generally the effective youth group, interviewees were chosen between these ages. Even the young, able-bodied, need help and guidance in planning their own life and it is more true of the disabled who need more help and guidance because of their complex problems regarding their future plans. They may be uncertain about their marital life; or frustrated because of the limited range of occupations open to them. They, therefore, need scientifically based counselling and guidance.

If we consider the age span between 18 to 45 as the most productive period of life, then they are expected during this period to take up some job, get married and support themselves. If they cannot get a job and cannot support the family, they may resort to un-social means for earning their livelihood. The cases in this survey have been classified as under:

*Group I.* Those who were successfully rehabilitated and were sent back into the community; and

*Group II.* Those who were undergoing the rehabilitation programme.

These two different categories of patients were taken in order to evaluate whether those who were rehabilitated had any problems of adjustment after their rehabilitation, and whether those who were currently undergoing rehabilitation were facing any special problems during the actual process of rehabilitation.

In the second part of the survey, persons belonging to various categories such as students, municipal councillors, businessmen, school teachers, professionals, departmental supervisors, pedestrians (men in the street), factory workers, doctors, nursing personnel, police personnel, voluntary social workers, and film stars, were interviewed.

In this group efforts were made to interview a cross-section of the community in the same age group as that of the disabled. Out of a total number of 55 cases, 30 were rehabilitated and 25 were in the process of rehabilitation. The analysis of these cases shows that the majority of the cases fall in the age group of 18 to 35, in both the categories.

These cases were studied from the point of view of their adjustment within the community and also their attitudes towards the community.

The study revealed that the majority of the cases had some basic education. However, in spite of their education they were unemployed and hardly had any income, with the result that they felt themselves a burden on society. It also showed that the rehabilitated patients had very few problems in adjusting to the community. However, out of 30 cases, 10 had problems regarding employment, while in the non-rehabilitated group, almost every patient showed concern about future employment and vocation.

This suggests that proper planning of a sound rehabilitation programme in every case is a must if rehabilitation is to be effective. Both categories of patients were in favour of the community undertaking counselling service so that they could go and discuss their problems in a realistic manner at the community level. They were also in favour of legislation for the employment and free education of the disabled.

While interviewing the patients it was found that they had various ideas regarding their own integration into the community. For example,

patients living in the slum areas remarked that even normal people living there had earning problems and hardly had any time for their families, let alone their having any time to think about the handicapped.

In contrast, those living in somewhat better environments felt that the community could do a lot for the disabled. They wanted that the community should take up all the problems of the disabled and involve the government in the various aspects of rehabilitation only at a later stage when they have already been initiated by the community.

Both the groups felt that there were hardly any recreational facilities available for the disabled at present, and, were very much in favour of establishing special recreational centres for the disabled. All the disabled patients felt that the government or local body should give them preference in the issue of licence for opening small stalls, kiosks etc.

A disabled in the city of Bombay said that after his rehabilitation he started selling pan and beedi on the pavements. Every week, he was harassed by the municipal authorities. When he applied for a regular licence, they told him that he was disabled, and hence not eligible.

This remark shows that the disabled do want to make an honest effort to earn their livelihood. But, due to various reasons they do not get an initial start and this becomes an additional source of frustration to them.

Almost all the non-disabled were of the opinion that rehabilitation programmes of the disabled were not necessarily a priority need of the country, because there were many other important programmes like employment, agricultural production, family planning etc., which needed immediate governmental attention. However, they felt that the department of social welfare should develop more programmes for the disabled than what they are doing at present.

The non-disabled group also felt that higher education should be free only for those disabled who showed any academic promise. They also felt that no priority should be given to the disabled for jobs, "just because they are disabled." If however, a disabled person could compete favourably well with the other non-disabled, consideration should be given for his disability.

In the non-disabled group different types of views were expressed:

Student:- "Oh! We have seen them on the streets. They are nothing but beggars and a burden on the society. The government should do something for them, because it is the responsibility of the government."

A policeman: "If a disabled person commits a crime, we do not spare him, but we are always very humane towards him."

A film star: "Disability is an excellent subject for acting. When we 'act' disability, we do so, without ever knowing their problems. We, film stars, should do something for them, but, we are too busy. Therefore, it is the community who should take up their problems and call upon us whenever they need us to help the worthy cause."

A businessman: "We are in favour of giving jobs to the disabled. But still we are not in favour of actual legislation, because we already have enough problems with the government, and legislation would create some more. But we always have shown a sympathetic attitude towards the disabled."

It is significant from the above remarks that the cross-section of the public is quite aware of the problems of the disabled but remain rather passive and unconcerned. They feel that the absorption of the disabled in the community is not only the community's responsibility, but also that of the government. In big cities, where the community consists of a heterogeneous group structure, integration of the disabled is a relatively difficult task.

The survey further revealed that the community is not yet ready to accept complete integration of the disabled within itself; but is somewhat reluctant to identify itself with their problems. However, the interest of the community could be systematically aroused through careful planning of the vocational rehabilitation programme of the young disabled, enabling them to merge with the main-stream of the community. This in turn will help the community to accept them.

A disabled individual is vitally influenced by the attitudes of the community towards his attempt at self-rehabilitation. In the final analysis, it is his employer, his friends, his neighbours and his family who will really determine the success or failure of the efforts at social integration.<sup>21</sup>

## Factors Retarding Integration

In subtle ways, societies teach that physically handicapped persons are inferior, not equal to the non-handicapped persons, and unable to compete successfully with them. The mere physical disability of not being able to see, for example, seems to make sighted people think of blind people as less than whole. Eventhough blind persons may try to compete using alternative techniques, they are still considered to be inferior and never accepted as equal.<sup>22</sup>

Unfortunately, age-old prejudices and misconceptions regarding the disabled still continue to be held by the general public; and this constitutes the greatest barrier in their social integration. All disabled persons are generally considered to be helpless, totally dependent and sheer objects of pity; they are, therefore, often regarded as incapable of functioning as normal and responsible members of the community. Individual differences among them in all walks of life are ignored, and all of them are expected to react exactly in the same manner to the same situation. But it must be emphatically pointed out here that this stereotyped approach of able-bodied people to the disabled is wholly erroneous and absolutely unrealistic.<sup>23</sup>

Besides general misconceptions about the handicapped, popular religious beliefs regarding disability and its causes also considerably hinder their social acceptance. Many religious persons subscribe to the theory of rebirth and the doctrine of Karma; so they believe that disability is the result of some bad deeds committed either by the disabled person's ancestors or by himself in his previous life. Consider, for instance, the following statement by a Buddhist philosopher cited by Mr. C. Humphrey in his book, "Karma and Rebirth": "Cripples, dwarfs and those born deaf or blind are the product of their own past actions, and one's pity should be used, not in bemoaning the injustice of their condition, but in assisting the new born brain to appreciate its own responsibility and to produce new causes whose result will be the undoing of the evil whose results are manifest".<sup>24</sup> Thus according to this religious view, the disabled person is wholly responsible for all the suffering caused to him by his disability which is the result of his own evil deeds.

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psychological and social insecurity, due to which they tend to devalue themselves and develop negative attitudes of suspicion, distrust and hostility towards the non-handicapped. On the other hand, the able-bodied persons regard the disabled persons as inferior or marginal beings from physical, occupational and social viewpoints, and try to isolate or segregate them, as far as possible, from the social and economic community. Thus, both the groups foster deep-rooted misunderstandings, suspicions and conflicting attitudes towards each other. This makes the task of integrating these two groups difficult.<sup>25</sup>

Having a cerebral palsied child puts a great stress on the family. Guilt feelings in the parents, economic insecurity and the time taken up by the child lead to irritability and friction in the family circle. In a joint household if all the members are sympathetic, the situation is ideal, but there are many cases where this is not so and relations are strained. All this acts as a deterrent to the child becoming an integrated member of the family. Ignorance on the part of the parents also prevents a child from becoming integrated. Overprotection by the parents preventing the child from learning to become independent creates an inhibition in the child while mixing with others. Apart from individual handicaps which make it difficult for the cerebral palsied child to mix with normal children, some of the problems which prevent them integrating with others are:-

1. the attitude of some parents who do not want their children to play with the cerebral palsied.
2. congested housing which makes it impossible to invite other children to the house to play.
3. architectural barrier which makes it difficult for children to be carried up and down the stairs.
4. transport difficulties which make it difficult to take children to places of entertainment.<sup>26</sup>

Mr. A. K. Mittal, the Director of the Regional Training Centre for the Teachers of the Blind, New Delhi, in his article "Approaches to Blindness" has dealt with several vital issues in the process of social integration of the handicapped especially the blind, based on the experience and writings of outstanding workers and authors in the field.

Regarding the situation of the blind in society, Hector Chevigny makes the following statement: "The tragic aspect of blindness is not

inherent in the condition itself. The world in which the blind man finds himself creates the tragedy for him and in him". In this the author gives vent to the feelings not only of his fellow blind men, but also of many wise and understanding sighted persons.

There are several types of attitudes which prevent the integration of the handicapped persons in society. Emil B. Fries explains how many people flatter the blind on their achievements in their presence and, at other times throw doubts and slighting reflections on the work they are doing. Many sighted people think that the blind are wonderful, but will not give them a chance in their factories, institutions and organisations and other establishments. Frustrations, maladjustments and emotional disturbances result from a social environment which cannot assimilate the presence of the handicapped. Thus they do to the blind what is done to all minority groups – they segregate them from society. This is the source of all the familiar stereotypes of the blind beggar, the blind man being led by a child and the blind musician standing in a street corner subsisting on peoples' charity. They also encounter the "you can't" attitude. The blind person is regarded as seriously handicapped, disabled and almost helpless. From very early in life, children are told in fairy tales of the poor, helpless blind man and of the blind beggar. Mrs. Brets, in her book: "I Begin Again" tells us something about this attitude as it appeared before her. When she made up her mind to live alone in her apartment, her friends were horrified. "You can't do it, it's impossible. There might be an accident, a fire". So it went on, she writes, "with the refrain YOU CAN'T."

There is also the "We must help the poor blind" attitude. This is an instinctive reaction of many seeing people when they encounter blind persons. The tragedy of it, however, is that it is motivated by feelings of pity and compassion which hurt. It makes a man with the fire and will of Hector Chevigny almost violent when he finds that the only way he can get help is by becoming a passive client of some charitable organisation. To assuage their conscience, many of the seeing give the blind something by way of help – money perhaps, or insist that the organisations they support give him money. At times, they may go a little further and give him what we call 'service' but again from a motive of pity. Or, perhaps, at times, the emotions roused by blindness are too much for them. Then, they pity the blind person from afar. And, at the other extreme, there are those who associate very closely with blind persons and lead them into some

kind of dependence. There are the sighted workers of the agencies for the blind, those who think of all blind persons as 'sweet and lovely'— the sighted owners of the blind. They discuss and report on 'our blind' and what they do and how they think. "Our blind are just the same as anybody else, I always say, — but just between ourselves, don't you think they're different?" There is yet another extreme example of the community's effort to help the blind in what Chevigny terms "the cheer leader type of advice." With all that people know about blindness and with all the facilities existing for them, it is strange, that the best many can do for a newly blinded person as he approaches the trying ordeal of a new life, is to slap him on the back and tell him "It's all up to you."

Some people experience feelings of fear and guilt in associating with blind persons. While pity and sorrow for the blind as socially approved reactions find frank expression in actions ranging from helplessness to over-protection, feelings of fear and guilt do not find such overt manifestations. Fear as a reaction to blindness is based on an identification of the seeing with the blind and expressed in such thoughts as: "How fearful it would be if I were blind!" It often makes people unwilling to associate with the blind and judge them fairly. Because of a fear induced by all the connotations and losses of blindness, they avoid approaching the problems of the blind. Some people even fear that they are not competent enough to deal with blind persons. Feelings of guilt are usually caused by such deliberations as: "why is he blind when I can see?" Such feelings can also result from a recognition of one's failure and also of society's failure to lend assistance to an individual blind person or to the blind as a group. Avoidance or over-solicitude are the manifestation of these feelings of guilt.

Religious influence and naive concepts of justice also play an important part in determining the nature of relationship between many sighted persons and the blind. These explain blindness as retribution for sins committed by parents or ancestors. Thus, many people regard blindness in a child as a punishment imposed upon the parents and blame them for the child's handicap. This attitude causes parents to be ashamed of their blind child and drives them into feelings of remorse. Many also feel that the blind person himself is somehow responsible for his own blindness. At the other end is the example quoted by Gabriel Farrel of a clergyman who told a group of blind people that they were blessed by God, because by being deprived of sight, they were assured of a larger measure of His mercy.

These attitudes discussed above, it may be stressed, do not form water-tight compartments, independent in themselves but are in many cases overlapping with one another. The difference lies in the degree to which a particular mode of feeling prevails over the other.

Of course, there are reasons for the prevalence of these attitudes to blindness among the seeing. Loss of sight has always been regarded as the greatest misfortune that can befall an individual next to loss of life itself. Naturally, the seeing conceive of those without sight as living a life of utter helplessness, dejection and yearning to view again the beauty of nature and mankind.

There is yet another psychological reason for these false notions about blindness among those who can see. The blind have to adjust to and adopt patterns of behaviours and modes of living which, of themselves, have no meaning for the sightless – what James Thurrel calls, “strategic considerations”. In their endeavours, the blind naturally, at times fall short of the standards set by people with sight. All this amounts almost to a socialised fixed idea of the blind with the seeing.

But whatever the reasons, and irrespective of whether the attitudes here discussed are conscious or unconscious, they exert their influence on blind. The manner in which the seeing friends, relatives and strangers approach the problems of the blind, induces one of two types of adjustments. The blind must either preserve their positive self-regarding attitudes by resisting emotionally subtle, and not always very subtle, suggestions of social and organic inferiority or accept the social and personal evaluation of the seeing, thereby sacrificing their self-esteem. The former retain their self-respect by becoming socially distasteful, the latter gain their social approval by selling their self-regarding attitudes and conforming with the attitudes and concepts of the seeing. So, they become precisely as defective and inadequate as society conceives them to be.

All this however, should not be taken to mean that the attitudes of the seeing alone are responsible for all the problems of the blind. Infact, it is remarkable when we discover the extent to which the blind themselves have adopted the attitudes and evaluations they so heartily condemn and which do such great disservice to their cause. Blindness poses a strong temptation for its victim either to surrender completely and luxuriate in dependence or to fight bitterly to escape.

These are expressed in various types of extreme attitudes or verbalizations which may be summed up as follows:

1. *Total surrender.* A few blind people feel that since society is solely responsible for all their ills and handicaps, they have a right to demand any and every privilege from it no matter whether they have worked for it or not. These are the people who never cease to be beneficiaries or benevolent individuals and organisations. Utter disappointment and extreme resentment are at the core of such an attitude which is perhaps the most unfortunate form of reaction to any handicap.

2. *The blind typhophile.* According to Milton Rosenblum, a blind typhophile is one of those blind persons who state that they want to be accepted as an individual, as a person with dignity, rights and occasionally, responsibilities. On the other hand, the blind typhophile demands all sorts of special privileges for blind people. He feels that society must recognize the fact that each blind person is different as an individual and yet, he speaks of 'we blind believe' or 'we blind want'. The blind typhophile implies that only a blind person can understand blindness and blind people and that the programme for the blind should be administered and or staffed by blind people and that, but for the blind, the sighted agency workers would go out of business. He is, in a sense saying that the interests and needs of blind people are so diverse from those of the community that blind people should be in their own separate organizations and agencies; that only a blind person can understand the blind; that agencies of sighted workers do not have the best interest of the sightless people at heart nor do they understand what is best for blind people - perhaps, they do not even care. Attitudes of this nature cause a lot of confusion and ill-will apart from giving force to the stereotype that all blind people are alike and unpredictable.

3. *Blindness is like dying.* According to this belief, when in full current of sighted life, blindness comes on a man, it is the end, the death, of that sighted life. It is naive to think of blindness as a blow to the eyes only, to sight alone. It is in fact a destructive blow to the self-image a man has carefully, though unconsciously, built of himself. This view of blindness if not modified by a clear analysis of the losses of blindness and of ways of overcoming them, can cause unending frustration and disintegration of the blind person's personality.

4. *Blindness only a characteristic.* This view advanced by Kenneth Jernigan, President of the National Federation of the Blind,

U.S.A., a very successful blind person, is diametrically opposed to those expressed so far. Jernigan thinks that blindness in itself is no handicap, but only a limitation just as innumerable other characteristics can be limitations. A restricting characteristic freezes a person into a mould. Blindness has no more importance than a hundred other such characteristics and a blind person can do an average job or task provided he is given proper training and opportunities.

According to Walter Stromar, a noted Professor of mathematics who is himself blind, we can view the whole question from a different stand point. He sets apart the limitations caused by blindness and then makes a comparison of the qualities, achievements and failings of an average blind and an average seeing person. He thus concludes that the blind man, because of his handicap, must depend upon the assistance and goodness of others to compensate for this loss. In other words, he does not treat the blind and the seeing on a par in their common pursuits. This view, of course, has its built-in drawbacks in that everyone, and not the blind alone, must depend, in some degree, on help from others, for no man in this world is completely self-sufficient and self-contained.

Of course, this does not mean that there is, today, a complete lack of recognition of the right attitude among the seeing and the blind towards blindness. The fact is that these healthy attitudes do not constitute the belief of the majority. As a first step towards a right attitude in this matter, it must be recognised that the blind have a place in the world and are capable of making a contribution to it just as the seeing people do. Secondly, it must be made unmistakably clear that the blind are not different, that they are not eternally dejected and sorrowful and that they are not suffering tormenting privations from the loss of sight. The blind are no more unhappy in their unfavourable visual environment than any other group of people would be, if confronted with an equally awkward situation. Rightly does Professor Villey emphasize that in consideration of the blind, the world should lay stress on what they possess rather than what they lack. Once the seeing world has really convinced itself of these facts, it will have very little difficulty in assimilating fellow members of the community who cannot see. All else will follow naturally.

Cutsforth, the noted blind psychologist, in his essay, "Blindness as an adequate expression of anxiety", notes that blind people show a surprisingly low frequency rate of functional disturbances which we

have since come to call psychosomatic disorders. A blind person has his blindness to fall back upon if he faces difficulties which he cannot manage while the seeing people must improvise an excuse for failures.

No doubt, in this endeavour, the blind also have a responsibility. All handicapped individuals, who belong in one way or another to minority groups, must make their adjustment to the attitudes of the public. And adjustments means 'knowing and accepting what one can and cannot do'. The basis for any such adjustment is self-knowledge and self-confidence rooted in feelings of security and a sense of belonging.

Moreover, the blind have a responsibility to make themselves socially and educationally acceptable to the seeing world. A blind person, to be successful must be prepared to do his job a little better than his seeing competitor. He must not be over-aggressive, but yet eager to prove his ability and to make the most of every opportunity offered.

It is only by such a mutual adjustment and reconciliation that the problem of the conflict of attitudes could be solved. If the public would judge the blind not by what they miss, but by what they have, the blind will have something to contribute which will entitle them to the acceptance which they seek from the seeing world.<sup>27</sup>

Allport presents a typology of reactions of discriminated individuals.<sup>28</sup> These ego defenses could be applied to the disabled in the following manner: (1) obsessive concern, as in the case of those who are hypersensitive about their condition and the reactions of others; (2) denial of membership, as in the case of those who reject disabled status and try to go on living as if they were non-disabled; (3) withdrawal and passivity, as in the case of those who give into their disability to an even greater degree than is necessary and even derive "secondary gains" from their disabled status; (4) identification with dominant group self-hate, as in the case of the disabled who accept the majority evaluative criteria and feel diminished and inferior; (5) aggression against own group, as in the case of the disabled who discriminate negatively and become aggressive against other disabled with the same type of disability or with a more stigmatized disability than their own or against those who derive sympathy, help, and love because of their disabled status; (6) prejudice against outgroups, that is, against other minority groups lower than themselves in the pecking

order; (7) sympathy toward other out-groups; (8) fighting back: militancy, as in the case of those who embrace liberal ideologies which could advance their group and demand social action; (9) strengthening in-groups, as in the case of those who develop an *esprit de corps*, a feeling that they all share a common lot, a group identification which is easier established when the disability is visible (if militancy and in-group identification were prevalent among the disabled, they could create a social movement); (10) enhanced striving, as in the case of a disabled individual who redoubles his efforts so that he has a chance to succeed in "normal" society by being much better than the non-disabled with whom he competes; (11) symbolic status striving, that is, compensation by substitution; (12) clowning (making a fool of oneself); (13) slyness and canning; (14) neuroticism (mental problems) and (15) self-fulfilling prophecy (false definition of a situation coming true).<sup>29</sup>

The disabled may react differently to their being labelled "deviant" and consequently discriminated against; they may move from one to another of the categories depending on the reaction of the non-disabled (especially their significant others) to their disability and their post disability stage such as grief phase, rehabilitation phase, and plateau reached in rehabilitation.

## Means of Promoting Integration

Social Integration of the handicapped is brought about by their fullest possible participation in the activities of the various social institutions and services such as education, vocational training, employment, recreation, marriage and family. It is the responsibility of the organisations and institutions for the handicapped to ensure and facilitate their participation.

### 1. Education

It is necessary and useful to bring together the handicapped and the non-handicapped children so that they develop positive attitudes towards one another right from childhood. Schools and to some extent playgrounds can provide them a good meeting ground. School is after all a miniature model of the community and therefore it can be a realistic step if it also admits some disabled educable children - the orthopaedically handicapped (not severely crippled), the arrested cases of leprosy and the untainted children of leprosy

patients along with the able-bodied. Social and emotional ill-health of the disabled children can be greatly prevented by arranging their schooling in a normal atmosphere.

Such a step, however, needs to be carefully planned and implemented; otherwise it can create several complications and jeopardize education of all. The school authorities need to be persuaded to accept the disabled children and teachers should be given necessary orientation in dealing with them and tackling different problems which may arise. The disabled children should be treated as normally as possible by their classmates and teachers. They must be made to feel equal. This will develop in them a feeling of security and emotional stability and enable them to overcome many of their difficulties. It is hoped that when the able-bodied and disabled children get such facilities early in their life, they will have more positive attitudes and better understanding of one another.<sup>30</sup>

Social rehabilitation of the blind is not possible without their total integration into society, and this integration depends upon their wide social contacts with sighted persons. To promote these social contacts the blind must be trained in mobility and orientation and also in such skills of communication as braille and typing. All these skills would enable the blind not only to become self-dependent in their daily lives, but would also enlarge their social circle which is very essential for their complete integration into the community.<sup>31</sup> If a blind person is not well versed in mobility and orientation and always depends on a human guide for going out of his home, he can never develop wide social contacts. Similarly, if he does not know braille and typing, it would greatly restrict his opportunities of establishing and developing social contacts with other persons at distant places. It is not rare to see that the blind person who is mainly confined to his home and whose social contacts are restricted to his family members or neighbours can hardly be said to have been socially rehabilitated in the real sense of the term. It is for this reason that providing an adequate training to the blind in all these skills is essential to their social rehabilitation.

How could we fill in the gap and give as many children as possible a chance to be educated, and to make their contribution to the society in which they live? There seems to be just one answer—that wherever possible blind children should study at regular schools along with their sighted brothers and sisters.<sup>32</sup>

The communication barrier that isolates the deaf from the hearing society must be bridged. It is only through education that this can be achieved. Education creates opportunities under which a deaf child's receptive and expressive language as well as his articulatory skill blossoms forth enabling him for social participation.

The growing realisation by the educators of the deaf that oral education is most valuable for hearing-impaired children, the introduction of various types of electronic equipment for utilisation of residual hearing, early admission in schools for the deaf and multi-sensory approach for linguistic development of the deaf child are now producing happy results. Along with speech reading, auditory training, articulation teaching, etc., reading, writing and different academic subjects are taught in various grades. At present increasing attention is being given to making the syllabus as per the normal school standard so that after completion of study in the school for the deaf, the student can pursue further education in a hearing school.

The challenge of integration becomes real and more apparent when a deaf student after completing his study in a school for the deaf gets admitted in some technical or normal academic school or serves as an apprentice or gets employment elsewhere.<sup>33</sup>

In recent times, integration of the deaf into the hearing society is becoming an outstanding feature of rehabilitation programmes. In many progressive countries integrated educational programmes are operating from the nursery to high school levels. Selected groups are sent to nearby hearing schools where they get regular special assistance from the teachers of the deaf. Such teachers also instruct and advise the whole staff of the school regarding the educational and social problems of the deaf and their solutions. This programme also includes the students and guardians who are enlightened with various aspects of deafness and their practical dealings. At present, deaf students after completing their school study are taking admission in hearing schools. They need special assistance from the teachers of the deaf, understanding and co-operation from the whole staff and students of the hearing school. To achieve this end, new orientation programmes are to be introduced in those hearing schools.<sup>34</sup>

## *2. Vocational Training*

The handicapped adolescents and adults should be given opportunities of receiving vocational training along with the able bodied.

If the handicapped are trained with the able bodied, the available resources can be put to more effective use and the disadvantages of a segregational approach can be avoided. By giving useful information about vocational training, guidance and counselling to the physically handicapped and the able-bodied in one common workshop, the problems arising out of the physically handicapped are tackled by the same personnel looking after the able-bodied. Thus with a minimum of expense and with some simple modifications, workshops used for training able-bodied persons can also train the physically handicapped. The personnel involved will also be able to do this after some brief orientation instead of having to undergo a detailed course in the management of the physically handicapped alone.<sup>35</sup>

### *3. Employment*

Employment of the disabled with the non-disabled in competitive jobs in industrial establishments is undoubtedly the best means of promoting social integration of the handicapped. Through the use of alternative techniques handicapped persons can compete successfully with able-bodied workers.

A common workshop provides a useful meeting ground to the disabled and the able-bodied. It would give them ample scope to reduce their differences and come closer for a common purpose.<sup>36</sup> It would create among the non-disabled a better understanding and appreciation of the capabilities of the disabled. The handicapped person will begin to feel that he is as much a worker as his other friends. Along with economic independence this will ensure a better social status for the handicapped worker and instil in him a sense of self esteem. Therefore all efforts should be made to employ along with the able-bodied different types of physically handicapped in various industries in public and private sectors. If sheltered workshops have to be started for the handicapped, then no discrimination should be made among different categories of the disabled, who should be trained and employed together. Disabled persons can be employed and rehabilitated in large scale industrial establishments by providing them numerous types of jobs – for instance “skilled,” “semi-skilled,” “unskilled” and “clerical” according to their education, abilities and disabilities.

### *4. Recreation*

As psychologists point out recreation is a potent environmental normaliser and has therapeutic value. It effectively reduces the threat

of isolation and social rejection. It affords a psychological escape from disruptive emotional experiences and results in heightened self-confidence, greater ease in socialisation and improved tolerance to frustrations, better muscle tone and cheerful appearance.

The main aim of recreation should be to provide stimuli, which would encourage the discoveries of experiences by children and develop visual, sensory and emotional responsiveness. During recreational activities, children learn good habits of personal care and hygiene, cleanliness, and use of leisure time. The handicapped child, because of his disability, needs to be offered stronger, more imaginative stimuli, so that he is encouraged to overcome the difficulties in seeking new experiences. There will be increase in motor movement and he will begin to feel less set apart from others.<sup>37</sup> Many studies have proved that when a handicapped child participates in a vigorous physical education and recreational programme, the rate of growth of his all-round development improves remarkably. Thus we know for sure that recreational services are very essential for the all-round development of the handicapped children.

Due to mental or physical disfunction, the handicapped child misses intellectual, emotional and physical experience, without which, the whole structure of his personality is threatened and his sense of identity is weakened.

Unless some help in the form of recreation is given, the child may lapse into apathy, with a deep feeling of futility, alternatively, he may turn destructively inwards, precipitating a personality break down. Either way, developmental processes are blocked. It is, therefore, a challenging and exacting task of all those concerned with the development of a handicapped child to provide him with as many of the human experiences as possible for the growth of his personality.

As extra-curricular activities are extremely beneficial for social integration, there is a growing tendency in schools for the handicapped to organise programmes like scouting and girl guides, theatres, concerts, hobbies, exhibitions of art and science, school magazines, visits, sight-seeing and travelling. The students by participating in such activities come closer to the normal world and learn to adjust themselves to the social surroundings they live in.<sup>38</sup> The disabled students get wonderful opportunities for expression and adaptation to the non-disabled society through sports and games, both indoor and outdoor. Therefore maximum opportunities should be given to the

disabled in those fields of recreation which are open to them; and some new avenues of recreation should also be discovered for them by the help of modern technology. This may go a long way to satisfying their need of recreation and thus may eventually contribute to their social rehabilitation.<sup>39</sup> One may even say that intelligently planned recreational activity can serve as a catalyst in the process of rehabilitating the whole personality.

Recreation means to create a thing new, to restore or refresh physically and mentally. Since rehabilitation also means to restore physically and mentally, recreation and rehabilitation have the same goals of restoring an individual to his maximum potential.

In fact, in recreation one becomes a participant and it allows for normal reciprocities between people and people. Thus recreation can be an effective tool in removing to some extent attitudinal and physical barriers by projecting a disabled person into the normal environment.

Active participation in a wide variety of recreational activities can help a handicapped individual overcome the feeling of self-consciousness and gain self-confidence. Recreation can be valuable in self-socialization and thus enable the disabled person to improve his self-image which is a key to success in life. Besides, vigorous activity enables a person to work off the pent up feelings of aggression and hostility.

If man is to live successfully, he must balance periods of stress with periods of relaxation. This rhythmic pattern gives each individual his opportunity to live to maximum capacity and so to live abundantly. Following this premise, it is apparent that the recreative experience is both essential for each person, and, a respectable part of living. It is not idleness or a frill, but an active, creative, constructive experience. Bertrand Russell said: "To be able to fill leisure intelligently is the last product of civilization." This pre-supposes the inclusion of all people in this need for recreative experiences, whether they are able-bodied or disabled.

## *5. Marriage and Family*

Marriage as a necessity in the social life of a human being is universally accepted in all civilizations. It contributes to the full development of the human personality in many ways. Therefore it is

as much essential for the disabled as for the normal persons. However for ensuring a successful marital life for the handicapped they should be adequately prepared by proper education, suitable vocational training and appropriate economic settlement. Unfortunately it is not easy for him, to have a life-partner because of social prejudices against the handicapped and on account of the prevalence of an arranged marriage system in our society.

Even if the disabled person is highly educated, gainfully employed and fully capable of supporting his family, he is often confronted with many great hurdles while seeking for his life-partner. He has very meagre chances to get an able-bodied person as his life-partner, due to the reluctance of the latter to espouse a disabled person. Most of the able-bodied still consider the handicapped to be dependent and helpless individuals incapable of functioning as normal and responsible spouses. Some people mistakenly believe that all disablements are hereditary and will be transmitted to the offspring. But, in spite of all these misconceptions, those young people, who are courageous and good enough to accept handicapped persons as their life-partners, are frequently discouraged by constant pressure from the part of their parents and relatives who sometimes unfortunately succeed in their sinister attempts to break up these marriages. All this deprives the handicapped of their right to satisfy their vital need for having a normal and happy family life. Eradication of social prejudices and misconceptions about the handicapped by a comprehensive programme of public education appears to be the only remedy for overcoming this formidable obstacle.<sup>40</sup>

Intermarriage between the disabled and the non-disabled is undoubtedly the best index of societal integration. However, up to now the chances for most disabled, especially those afflicted with visible disabilities, to marry a non-disabled have been very small (unless married prior to the onset of disability). So if such an individual desires to have heterosexual relations and to look for a mate, he must search for eligibles among other disabled, who are probably also visibly disabled. That this situation represents a strain for the visibly disabled person who is caught in a dilemma has been well formulated by Weinberg. "The wider a visibly disabled person's social space (that is, the interactive net-work with those other than 'his own kind') the narrower his sociable space (that is, his field of intimate primary relationships, eligible dates and mates)".<sup>41</sup>

Under the pressure of social and psychological isolation, the disabled have to create clubs or organizations that cater only to "their own kind" for social and recreational purposes. Weinberg's study of the Little People of America (LPA) organization showed that it served the rather secondary educative and practical purposes for its members (information about the special problems encountered by midgets and dwarfs in everyday life and employment assistance). His principal attraction was the opportunity to meet eligible dates and mates during the monthly and annual conventions.<sup>42</sup> Some of the mentally retarded studied by Edgerton also went to a social club for the handicapped although this was by no means their first choice.<sup>43</sup> Generally, it seems that the disabled who do not join such clubs or organizations are those who have not accepted their disabled status and consider satisfactory intimate relations, especially marriage, with a non-disabled as the only acceptable criterion of successful adjustment. They refuse to join such clubs and organizations and instead, go on trying to join the "normal" society.<sup>44</sup> These two extreme attitudes are equally undesirable and to be avoided.

The role of the family in the disability and rehabilitation odyssey has not always been studied in depth; many studies have gone only so far as to examine the disabled's marital status and the number of his dependents. But even these descriptive family variables have provided some interesting findings, especially when combined with the sex of the disabled person. For example, there is evidence that married women with young or adolescent children, even if seriously disabled, are taken back by their families at the end of treatment or rehabilitation. They are thus aided in getting reintegrated into their family so that they can best perform their dual roles as wife and mother. In contrast, men who have families in the same stage of the family cycle are not usually welcome back unless they can still perform the bread winner role (either by working or by having independent means to support the family in a style close to the pre-disability one). These findings tend to indicate that when the women's primary role is that of mother and housekeeper, the basic tasks involved in this role can be satisfactorily performed even in the presence of a serious physical or mental disability. On the contrary, the husbands bread winner role has tasks and requirements which are often profoundly disturbed by the onset of a physical or mental disability. It is possible that in the case of men, the sexual role tends to be more disturbed by disabilities than in the case of women and that dependence is less tolerated by their wives. Thus, the frequency of wives divorcing or

deserting their husbands in this case (probably in order to replace them with gainfully employed and sexually potent husbands) is high, while no incidence of husbands deserting their disabled wives has been reported in the literature.<sup>45</sup>

Among the unmarried young adult disabled, women again fare much better than men since they are usually taken back by their families while men are not. Among children the sex differential does not operate since they can all return to their families. Of course, the obvious questions which have been raised but not answered are<sup>46</sup>— (a) what happens to married women after their mothering role is over? Probably, at this point the degree of the husband's satisfaction with the marriage may be the determining factor as to whether the wife can still function successfully or whether she will be abandoned to a hospital or nursing home; (b) what happens to seriously disabled male children when they become young adult? Do all parents give them up to a hospital or some other type of institution? Or here again does the type of parent-child relationship determine the outcome? The most satisfactory answers to these questions can come only from more longitudinal research. It must be remembered that all these findings are based on seriously disabled persons; the trends may be very different when the degree of disability is lesser.

But it has also been found that among the married disabled, pressing role demands and high level of expectation on the part of other family members are conducive to the successful rehabilitation of the disabled members. For example, resumption of the working role by the male disabled was much higher when there were young children or adult children in the family than at any other stage of the family cycle, because at these two stages the pressure for the successful performance of the instrumental role is the highest. In the case of working married women (even those who are predisposed to work during all stages of the family cycle), whenever the mothering role is important because of the young age of the children, they opt for this role — which is more compatible with the presence of disabilities.<sup>47</sup>

These findings may be summarised as follows: In the case of the non-institutionalised disabled, the greater the necessity to perform tasks and roles, the greater the probability that they will use all their abilities to do so. This conclusion can also explain some of the contradictory findings of studies investigating the effects of family solidarity, cohesion, or organization on the rehabilitation of the disabled.<sup>48</sup>

If one wishes to give the disabled the chance of a social life the most important thing is to give him a home of his own and not a room or a bed in an institution.

Having a suitable accommodation for his happy family life is also a vital necessity for a disabled person as it is for any other person. But even this necessary facility is often denied to the handicapped because of their disability. Many landlords refuse to give their houses to the disabled on rent, since they have some baseless apprehensions with regard to them. For example, some landlords are afraid that a blind person may hurt himself by falling down from the stairs, or he may be injured by an accident in the kitchen, and, as a result they may unnecessarily get into trouble. They are also afraid that he may become a nuisance to them by repeatedly asking for their help in his daily activities. They have many other similar misapprehensions about their prospective disabled tenants. This creates a formidable problem for the handicapped who are in need of accommodation. This problem can also be solved by convincing the landlords of the fact that most of the disabled are very cautious, self-reliant, orderly and efficient in handling their daily activities.<sup>49</sup>

An interesting experiment is being tried out in Sweden since 1967. The Fokus Society arranged 280 well adapted flats in thirteen cities for the stay of the severely disabled people. The flats are integrated with those of the non-disabled and every disabled person has a flat of his own. Fifteen such flats for disabled people are located in one building in order to make the day and night service easier. All disabled tenants come from nursing homes or the homes of their parents. The psychological effect of getting a home of their own and living in the same apartment building as non-disabled people can never be under-estimated.<sup>50</sup> It must be pointed out that several of these severely disabled persons encounter many difficulties during their first six to twelve months of stay in this new environment. For the first time many of them have to take full responsibility for their own lives, plan their time, order their purchases, clean their clothes, and so on. It has been found that none of the 300 young disabled persons in the thirteen cities, who have been involved in this experiment, would like to return to their earlier situation.

This experiment proved that nearly as important as the flat itself are the facilities provided for the disabled for local transportation. In the above mentioned cities the transportation system has been arranged in such a way that the disabled tenant can order a ride in

*special buses or call for a taxi when he wants to go out. When such facilities were unobtainable the disabled suffered considerable difficulties. Investigations have proved how very important it is for the disabled – especially in integrated flats – to get out whenever they wish and go wherever they like. The feeling of independence thus obtained is of the greatest importance to their life as a whole.*

For many disabled, and young people especially, the problem of love and sex causes difficulties. Many nursing or service members of rehabilitation teams hesitate to discuss this kind of problem with the disabled. They are afraid of what will happen if they really accept that the disabled have the same feelings and reactions as the non-disabled. In such a situation the easiest way is to avoid the questions. But this is undesirable if one wants to help the disabled to live a real life. Investigations and experiences with housing and service for the severely disabled showed that many frustrations are reduced when the disabled have own homes where they can have normal contacts with people of the other sex.<sup>51</sup> The experience thus gained afford them a true knowledge of their capacities and may in its turn engender a valuable feeling of self-confidence. Many of them will also discover that sexual activities are important but not indispensable for establishing love relationships with other persons.

Disability affects the attitude of significant others, particularly of those involved in the marital relationship. There is some evidence of the spouses of chronically ill (or mentally ill) persons developing symptoms such as nervousness, feelings of fatigue, symptoms of role tension (getting jumpy or jittery, easily angry or easily depressed) and reduction in their work activities during illness.<sup>52</sup> Since the symptoms and role tension experienced by some spouses are equal or greater than those experienced by the "sick" spouse, it is sometime quite possible that he or she falls sick when the patient returns home after treatment or rehabilitation.<sup>53</sup> It is this possibility which sometimes prevents the return of the disabled and renders his rehabilitation chances slim.<sup>54</sup>

There is also evidence that a spouse's degree of marital satisfaction does not vary directly with the degree of disability afflicting the other spouse. Actually it seems that in the case of clear-cut serious disabilities severely affecting physical mobility, there is little ambiguity in role definitions and expectations. This favours the marital relationship despite the fact that the spouse's companionship satisfaction may be decreased. In the case of moderate disabilities

with ambiguous and often variable prognoses, role definitions and expectations on the part of the spouses may be so ambiguous and inconsistent that marital interaction and satisfaction are affected in a way that is not much different from when the spouse is seriously disabled. It is also interesting to note that sexual relations are not linearly affected by the degree of disability. In one study the great majority of seriously disabled women living with their husbands reported "normal" sexual relations and some had borne children since their disablement.<sup>55</sup> Among a group of men with heart disease, return to normal sexual activity was related to return to gainful employment.<sup>56</sup>

Dealing with the sexual and marital life of the handicapped, James Loring, the Secretary General of International Cerebral Palsy Society (1972) points out that sex is a function of living. But whereas in the human species other functions such as eating, drinking and excreting are capable of producing only relatively mild controversy, sex, closely linked as it is with human emotion, has been over the centuries a subject of serious controversy. He continues that sex norms are determined to a great extent by social structure, cultural patterns and religious beliefs. Many people find fundamentally disturbing the idea that handicapped people should have the same urges and desires as the rest of the population. Indeed, it is often denied that they have such feelings at all and very often we make certain in our financial, physical and social provision for them that they cannot express such desires. For example, we tend to deny them the fulfilment of marriage and children on the grounds that they could not cope.

It would seem that many people prefer to think of the handicapped as perennial children who remain appealing and dependent. This attitude extends to the sexual development of handicapped people and may be one of the reasons why it becomes necessary to pretend that severely handicapped children never grow up. Non-handicapped people have some curiosity about the anatomical characteristics of the physically handicapped but find it very difficult to face and accept the mature sexuality of people who are physically damaged in one way or another. There is a tendency to treat the basic human rights of handicapped people as privileges to be handed out as rewards, to be shocked when handicapped people act like adults rather than like children in swearing, drinking, smoking, let alone petting or having sexual intercourse. There is also a tendency to impose inferior status on the handicapped. This form of devaluation is expressed in many ways - for example, in the patronising attitude

of a person who gives money to help "those poor things". The stereotype of a disabled person is often of one who has suffered great misfortune and is irrevocably damaged. The inferior status conferred includes inferior sexual development and performance and therefore more often than not a denial of the need for fulfilment. "The marriage of handicapped people continues to evoke strong feelings especially among the general public who have never had much to do with them. The idea of sexual relations between the handicapped is for some reason profoundly unacceptable to most normal people".

A young person regards his or her physique in the light of its sexual appropriateness. The values of society bring tremendous pressure upon them to examine themselves in terms of criteria of normal sex roles. There is a stereotype which during adolescence is pursued with a view to adherence. The stereotype is built from criteria which follows fairly rigidly contemporary standards as to what the feminine and the masculine role should be. The adolescent as he grows up keeps testing himself as to whether he can make the grade. This mechanism of self-regard can present the handicapped person with the most cruel process of self-evaluation. Exactly when this is likely to take place is difficult to determine but the degree of disturbance in young handicapped adolescents is often most marked in the late teens whilst the girls seem to come to this self-evaluation at slightly later age. It is difficult to determine why there should be this difference. It may be biological or it may be that in emotional matters handicapped girls tend to receive more support from their parents and friends than handicapped boys. It is generally accepted that children should begin to receive sex instruction at a relatively early age and it is vitally important that there should be basic sex instruction for handicapped children. This should develop towards learning about inter-personal and group relationships and human development. Every opportunity should be given to handicapped young people to voice their fears and problems. This involves adequate opportunities for discussions with peer groups. The need for conformity amongst the young is very great. The fact that conformity to the norm is never possible for the handicapped is a conclusion which can produce a major emotional crisis. There is some evidence that cerebral palsied boys and girls find it difficult to construct an adequate mental image of themselves. In cases of this sort the battle to come to grips with the realities of their appearance and their disability may be violent and can produce complete break down. There is, however, a sort of purification through fire in many cases.<sup>57</sup>

This brings us to the need of public education for radically modifying unrealistic attitudes and gross misconceptions prevalent in our society concerning disability and its effects on the disabled. We must give correct information to the general public regarding the problems, needs, limitations and potentials of the handicapped through all the important mass media such as the press, radio, television, films, books etc. The public should be made aware of the fact that a handicapped person is a normal human being with some physical impairment, but this need not affect his social behaviour, emotional maturity, intellectual calibre and occupational efficiency in all areas. If this awareness concerning the handicapped is created in the public through modern mass media, it would greatly help in their social rehabilitation.

The social integration of the disabled can be achieved only if they are given a real chance of living a full fledged social life. This can only be done when the community is prepared to accept the disabled as a person with the same requirements and demands as other peoples, the same right to own a home with the necessary personal help and the possibilities of communicating with other people. The community and its doctors, social assistants, politicians and other such persons must give the disabled a possibility of choosing his own way and taking responsibility for this choice. We have to avoid every form of guardianship over him, but this does not mean that we should leave him alone with his problems. We must give him help and psychological support when he asks for it. The medical rehabilitation must go on side by side with the social rehabilitation process. Of great importance to the disabled is a home of his own. ADL – functions and transportation assistance are also important. These two types of services are necessary for a normal contact with other people. If we wish to give the disabled an independent existence and a chance of finding his own way in life, we must also give him psychological support. The basic social service afforded him by society must be organized in such a way that he can make his own decisions and be responsible for his own life.<sup>58</sup>

It is equally true, that the disabled themselves have traditionally held a very narrow view of their own worth and potential, and thus have been reticent to speak out in their own cause. It is only in recent times that physically handicapped have experienced that self-awakening is the necessary forerunner of social action. Their previous depressed expectations for a meaningful or rewarding life were based on the

acceptance of the "fact" that the world was made for the fit and the able-bodied, and that it was not incumbent upon society to make any special arrangements to accommodate those who did not live upto accepted standards. Their misfortune was a private tragedy, of little concern to others.

It is the disabled themselves who hold the key to their own emancipation, and much depends upon the image they project of themselves. Before the disabled people, either individually or collectively, can expect to make a positive and progressive impact on society, they must know and understand themselves, and be honest in acknowledging their deficiencies and limitations as they are vocal in demanding their rights. They must be realistic in setting their goals, and must direct all their resources towards attaining them.

None of this is to say that the disabled person ought to assume the role of the retiring, submissive individual that was the prototype of a few years ago. On the contrary, he must now seize the initiative in a positive, forthright manner, and avail himself of every possible opportunity to make his contribution to his community in whatever way his abilities and talents permit. By openly demonstrating his willingness and capacity to serve, and by setting an example of responsible citizenship, the disabled person can do more to foster a constructive image of the disabled community as a whole, than the finest efforts of the most prestigious advertising agency. From this standpoint, personal example is the most effective means of social action.

One of the most tragic aspects of the current approach to physical disability is that emphasis is often placed on physical restoration at the expense of other equally legitimate considerations. As a result many disabled persons go through the formative years of their lives without receiving the stimulations and normal awakenings so essential to personal and social development, and thus enter adult life hopelessly inequipped to lead a balanced and normal life. The situation becomes particularly serious when the efforts at purely physical recovery or adaptation have not been particularly successful, and the individual is left with virtually no resources, physical or otherwise, to fall back on. In this connection, it is interesting to note that large number of physically disabled adults are of the view that they would much prefer to see resources directed more towards the creation of those conditions which would permit a fuller and richer life style, than to the search for cures that may never come during their life span.

This does not mean, of course, that we should call an end to medical treatment and research. God forbid! But perhaps we ought to be considering a more equitable distribution of available resources to make the lives of the "incurables" more tolerable.

Every human being has a basic right to personal and social development, and the presence of a disability should in no way restrict one's access to that right. The entire rehabilitation process must be approached from this point of view if it is to have any real meaning in a modern society, and the process must begin at a sufficiently early age to ensure that the individual's progress is not thwarted before it even begins.

It must therefore become a cardinal maxim of rehabilitation that the positive attributes, the inherent talents and abilities of each individual, must be discovered and nurtured from the earliest possible moment, so that each disabled person, no matter how severe his affliction, may enter adult life equipped to achieve maximally and be dependent minimally.<sup>59</sup>

"It is not arms, legs, eyes or ears but spirit that makes a man and he should be judged for what he can do rather than what he is unable to do" says the great rehabilitationist Howard Rusk.

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PART III

**SERVICES FOR THE DISABLED IN INDIA**

## CHAPTER XIX

### MEDICAL SERVICES

The importance of medical services in the total rehabilitation of the disabled cannot be overstressed. In fact, it is basic to all other services. Physical restoration and correction through adequate medical services is the primary step in the process of rehabilitation. By medical services we mean all facilities for the prevention of preventable diseases and treatment of curable diseases as well as correction and strengthening of affected body parts through physio/occupational therapy and provision of prosthetic and orthotic appliances aimed at fullest possible physical restoration and function.)

para-medical:  
treat  
Correction:

In India provision of adequate medical services involves a tremendous task. With a population exceeding 844 million, 80% of whom residing in remote villages and more than 50% below the poverty line, health care and hygienic living of majority of the people is still a dream. Malnutrition, poor housing condition, insufficient medical and para-medical personnel, ignorance of the masses as to the developments in modern medicine - all contribute to the alarming situation of health care in India.

( Most villagers lack adequate medical services and do not know what to do about a congenital deformity or a crippling disease or an accidental injury when it occurs; they do not know what services are available or how to go about seeking reliable service. They may also be unable to afford the cost of such service, and since specialized medical and surgical treatment is usually available only in large urban centres, they may not be able to travel there for such treatment and undergo a long convalescence or a stay in a nursing home.

Villagers

*show that approval*

When treatment is sought, therefore, people are likely to consult 'medicine men', herb prescriber, or door-to-door sellers of locally concocted medicines. It is a tragic irony that many handicaps are not only worsened but may also be supplemented by other handicaps caused directly by such inexpert treatment.<sup>1</sup>

Though there are some clinics, hospitals and dispensaries even in small communities in India, preventive and treatment services are unlikely to be available in the villages, since facilities for the identification and treatment of handicapping conditions are found only in larger urban centres. However, since independence there has been considerable progress in this field of medical services in the country. The number of medical colleges, hospitals, dispensaries and primary health centres has increased substantially, offering special service in different areas. The purpose of this chapter is to review in brief some of the existing facilities for the prevention, treatment and restoration of disabilities such as orthopaedic disabilities, blindness and deafness.

### Orthopaedic Disabilities

(The first institution which initiated specialized services to the handicapped children in India was T. K. Polio Clinic and Physiotherapy Institute, Ahmedabad.) It was followed by the establishment of several organizations and institutions such as (Society for the Rehabilitation of Crippled Children, Bombay, Society for the Welfare of Cripples, West Bengal, Fellowship for the Physically Handicapped, Bombay, All India Institute of Physical Medicine and Rehabilitation, Bombay, Occupational Therapy Institute, New Delhi (Institute of Physical Medicine and Rehabilitation), Society for the Welfare of Physically Handicapped, Pune, Occupational Therapy for Children, New Delhi, Nagpur Association for the Rehabilitation of Children with Orthopaedic Disabilities, Nagpur, and Cripples' Association, Ahmedabad.)

*Service - 1945*

As in other countries, impetus for the care and training of the Orthopaedically Handicapped came from provisions made for wounded war veterans. In 1945, seven 'Services Convalescent Rehabilitation Centres' (SCRCs) were established to provide for a total of 5,500 trainees, with specially trained rehabilitation officers stationed at these centres. These officers interviewed the disabled ex-servicemen to determine their physical and mental condition, assess their residual capacities, and record detailed information concerning them as a basis for referral to the Department of Labour Training Centres.<sup>2</sup>

The wave of modern rehabilitation medicine came to India since Independence. (In 1950, a South East Asia conference on Rehabilitation of Handicapped Children was held at Jamshedpur under the joint auspices of the Government of India, the United Nations and specialized agencies.) A direct outcome of this conference was the decision to establish a rehabilitation and training centre for India in the King Edward VII Memorial Hospital, Bombay, where between 1950 and 1954 an Occupational Therapy Training Centre and Physical Therapy School were started with the aid of the United Nations, ILO, WHO, UNICEF, the World Veterans Federation and the International Society for Rehabilitation of the Disabled. (In August 1955 the Centre in the hospital became a demonstration and training unit to provide services for the entire country and to serve as a model for later rehabilitation programmes, chiefly for the orthopaedically handicapped.) It is (now known as the All India Institute for Physical Medicine and Rehabilitation.) Later it added a Prosthetics Centre with the collaboration of the Society for the Rehabilitation of Crippled Children.<sup>3</sup>) Thus the Centre has grown from a small pilot project to a multifaceted service that includes giving assistance to other civilian hospitals in establishing rehabilitation programmes.<sup>4</sup> The All India Institute of Physical Medicine and Rehabilitation, Bombay, was the first rehabilitation centre to be established in India. Gradually the concepts of physical medicine and rehabilitation spread to certain leading medical institutions in the country. An example is the (All India Institute of Medical Sciences in New Delhi.) (The Vocational Rehabilitation Administration of the United States of America (now known as Social Rehabilitation Services) has played a key role in helping to start several rehabilitation projects in India.) These projects were undertaken by various institutions under the sponsorship of the Indian Council of Medical Research. The (Comprehensive Rehabilitation, Research and Training Project started in the Medical College, Trivandrum, in 1967 was one of them. It functioned for 5 years.)

(The major objectives of the project were to develop practical methods for the 'total rehabilitation of persons with orthopaedic disabilities and neurological disorders,' to conduct a field research programme to collect adequate pertinent data on the existing social problems of the physically handicapped and to<sup>3</sup> develop teaching and training materials and techniques in the various rehabilitation disciplines such as prosthetics, orthotics and therapy services for the training of medical students, resident physicians (house staff), nurses and technicians. It also sought ways of introducing rehabilitation concepts into the medical curriculum.)

A field study undertaken by the project in Trivandrum city and a nearby village to collect pertinent data in the different medico-social factors concerned with rehabilitation of the disabled revealed that 2% of the population suffered from some physical disability and that orthopaedic deformities and neurologic disorders constituted the bulk.

The hospital-based physical medicine clinic and the main rehabilitation centre together attended to 11,203 cases with various disabilities such as post fracture cases, anarticular rheumatism, low back ache caputees, arthritis, congenital deformities and paralytic disorders. Practical methods of treatment and rehabilitation in relation to the nature and extent of disability were evolved. Medical and para-medical personnel were oriented to the new field of Physical Medicine. The hospital physical medicine clinic conducted specific clinical studies in the interest of clinical research as well as medical education and the results were analysed and presented as teaching manuals.

The prosthetic and orthotic sections conducted experiments for the simplification and modification of appliances, custom designing for individual requirements and the use of locally available materials for improvising components and for the design of appliances to suit local conditions.<sup>5</sup>

On completion of the project in 1972 all patient-oriented activities were merged with the Department of Physical Medicine and Rehabilitation of the Medical College and all the medical and para-medical professional staff of the Project were absorbed in the Department. The Department of Physical Medicine and Rehabilitation in the Medical College, Trivandrum is a full fledged teaching department which awards post graduate diploma in Physical Medicine and Rehabilitation.

On an average the department attends to 5000 patients a year in its out-patient clinic. About 40% of them are children below 13 years of age. There are two wards which can accommodate 30 patients at a time - 15 men and 15 women. Patients requiring physiotherapy and occupational therapy are attended to in the respective clinics. The prosthetic workshop and the limp fitting centre in collaboration with ALIMCO cater to nearly 500 cases a year.

The appliances issued from this centre include all types of lower extremity prostheses, all kinds of braces for lower extremity and certain spinal orthoses, surgical boots and special foot wears, certain

dynamic splints and assistive devices and other experimental appliances representing simplifications and modifications. Examples are foot drop and inversion correction boots, partial foot prostheses for Symes' amputees, custom designing for individual requirements, prostheses for congenital deficiencies of the lower extremity, special hinged corset for flail elbow joint, use of local materials for improving components and appliances such as hip joint for hip disarticulation prostheses, SACH foot canvass harness and cable assembly for upper extremity prostheses and alignment adjusting device for the fitting of PTB plaster pylons. Rehabilitation units have been started in various district hospitals too.

Within the last three decades Physical Medicine and Rehabilitation Departments have been started in a few other medical colleges and large hospitals such as Madras Medical College, Christian Medical College, Vellore, All India Institute of Medical Sciences, New Delhi, Post Graduate Medical Institute and Hospital, Calcutta, S.O.K.M. Hospital, Calcutta, M.H.S. Medical College, Calcutta, Patna Medical College, Zafardung Hospital, New Delhi, Kalavathy Saran Hospital, New Delhi, Medical College, Jaipur, K.G. Medical College, Lucknow, Institute of Medical Services, Sreenagar and Medical College, Calicut.

### *Physiotherapy*

Other than the partial training for medical corpsmen of the Indian army by English physiotherapists during World War II, there was no physical therapy training until 1952. In 1952, a Physiotherapy Centre was formed in the K.E.M. Hospital, Bombay, taking students for training under a jointly sponsored programme by WHO, the Government of India, Bombay State and the Bombay Municipal Corporation. When the first batch completed its training, the members, along with a few foreign-trained therapists formed the Indian Association of Physiotherapists and set down minimum requirements for training to qualify for membership. In 1953 a training programme leading to a certificate was started at the Emery Hospital of the Salvation Army at Anand, and the Children's Orthopaedic Hospital in Bombay gave in-service training for the partially trained veterans in its staff. From 1957 onwards the Indian Army trained its own physiotherapists at two centres, in Pune and Delhi, with two Indian therapists as instructors who received their training in England. In 1958 Madras State instituted the physiotherapy training of nurses for service in state hospitals and institutions and that same year a team of Russian physical medicine

experts started a programme at the Kalavathy Saran Children's Hospital in New Delhi with special emphasis on remedial exercise and electrotherapy. All these programmes were certificate programmes except the diploma programme at the K.E.M. Hospital. The first post graduate course was started at the All India Institute of Physical Medicine and Rehabilitation in the K.E.M. Hospital in 1956.

The Govt. of West Bengal trains physical therapists in a school of Physical Medicine which it has established at the Institute of Post-graduate Medical Education and Research in the S.S.K.M. Hospital in Calcutta. In addition, there are physical therapists who have been trained by the army, some nurses with such training and a few blind trainees.<sup>6</sup>

A two year diploma course in physiotherapy was started in Madras General Hospital (1960), Christian Medical College and Hospital, Vellore (1962), Nagpur Medical Centre and Hospital (1964) and Jawaharlal Nehru Institute of Physical Medicine and Rehabilitation, New Delhi, now known as Institute for the Physically Handicapped. Physiotherapy training is offered in medical colleges at Ludhiana, Bangalore and B.M. Institute, Ahmedabad.

### *Occupational Therapy*

Occupational therapy was introduced in India in 1950 by Mrs. Kamala Nimbkar who started the first school for Occupational Therapy at the King Edward Memorial Hospital of the Bombay Municipal Corporation. It is available for the orthopaedically handicapped child in Bombay in four municipal hospitals, two state hospitals, the All India Institute for Physical Medicine and Rehabilitation, and four voluntary institutions including the Mahatma Gandhi Memorial Hospital. This kind of service is also available in a few other settings such as two railway hospitals and institutions for the mentally retarded which include among their patients some children with physical disabilities, providing a total of eleven occupational therapy departments in the city of Bombay. Outside the city there are three such departments in Nagpur, Pune, and Aurangabad. Occupational therapy services are also available in three homes for crippled children operated by the Directorate of Social Welfare, Maharashtra.<sup>7</sup>

There are two types of occupational therapy training programmes at present, one for two years leading to a diploma, and another for two and a half years leading to a B.Sc Degree.<sup>8</sup> Diploma courses are

offered in King Edward Memorial (KEM) Medical College and Hospital and Institute for the Physically Handicapped. Degree course in occupational therapy is imparted in Nagpur Medical Centre and Hospital, sponsored by the Maharashtra State. Occupational therapy units have also been established in three hospitals in Delhi. The post-graduate course at the All India Institute of Physical Medicine and Rehabilitation varies in length but usually lasts for only three months and deals exclusively with the orthopaedically handicapped. Training in occupational therapy is offered in Madras City Medical College, Christian Medical College, Vellore, B.M. Institute, Ahmedabad and SSKM Hospital, Calcutta.

### *Prosthetic and Orthotic Appliances*

India has progressed in the manufacture of prosthetic appliances. There are a few private manufacturers of prosthetic and orthotic appliances in urban centres; Bombay has half a dozen. The Orthopathic Factory of the Jerbai Wadia Hospital in Bombay supplies 600 appliances a year. The All India Institute of Physical Medicine and Rehabilitation also set up a prosthetics workshop in Bombay in 1959 with the technical aid of UNICEF.<sup>9</sup> An Artificial Limb Centre was established in the Department of Orthopaedic Surgery at the Government General Hospital in Madras in 1964.<sup>10</sup> A similar centre was established in the Medical College, Trivandrum in 1969.

Another major resource is the Artificial Limb Centre located in Pune, which was established in 1949 in order to rehabilitate 3,000 ex-servicemen who lost limbs in World War II. This Centre was patterned after the Ministry of Pension's Limb Fitting Centre at Roshampton, England. In 1951 the centre began to accept civilian patients, estimated to constitute a group seven times as large as that of veterans. The Centre has two repair shops attached to the Military Hospitals at Delhi and Lucknow to serve up-country patients. Patients referred from other Asian countries are also served from time to time. Generally leg prostheses are found easier to fit than those of arms. On the average four to six weeks are needed for fitting the artificial limb and training the patient in its use.<sup>11</sup>

Extensive training in the use of artificial limbs is given in the rehabilitation wing by an instructor from the Army School of Physical Training, with an emphasis on physical therapy. A convalescent wing opened in 1961 for the civilian disabled provides room and board and recreation for nominal fee.<sup>12</sup>

A major influence in modernising and extending prosthetic and orthotic services has been the two four-month courses held at Christian Medical College and Hospital, Vellore, in 1963 and at the Government General Hospital in Madras in 1967 under the sponsorship of the U.S. Social and Rehabilitation Service and the World Rehabilitation Fund.<sup>13</sup> Emphasis on these courses was placed on the use of local materials, including plastics, and modern methods such as the pettellatenden-bearing below-knee prosthesis and the total-contact socket for above-knee amputations. Graduates of these courses are working now in prosthetic orthotic shops established with the aid of grants from the U. S. Social and Rehabilitation Service at the Government General Hospital, Madras, the All India Institute of Medical Sciences, New Delhi, the Lions Centre for the Physically Handicapped, Bangalore, Wanless Hospital, Miraj, University College of Medicine, Calcutta, Christian Medical College and Hospital, Ludhiana, St. John's Medical College and Hospital and St. Martha's Hospital, Bangalore. The first of these projects was the one at Vellore which began in 1962.<sup>14</sup>

The types of prosthetic and orthotic devices produced at these centres are identical with those produced in the United States and Western Europe. Furthermore the use of more modern techniques than those found in other centres has resulted in much higher production rates.

With a view to producing and distributing adequate number of prosthetic and orthotic devices, to the disabled, the Govt. of India established in 1975 two institutions, one a production centre in Kanpur and the other a training centre in Orissa. The Artificial Limb Manufacturing Corporation of India (ALIMCO) in Kanpur produces all kinds of prosthetic and orthotic appliances required by the handicapped. The appliances produced by ALIMCO are supplied through five regional centres functioning in Calcutta, Bangalore, Jaipur, Madras and Trivandrum and 96 peripheral centres. ALIMCO also aims at developing the existing centres and starting new ones in the field.

National Institute of Rehabilitation Training and Research, Cuttack, Orissa, trains technicians for the production and fitting of artificial limbs and other appliances.

## **Blindness**

Many eye diseases go untreated owing to inadequate medical services. Eye camps or clinics for eye examinations and operations

were first organised in India in 1948. The first eye bank was formally opened in Bombay in 1964. Thereafter Sight Conservation Committees and Centres for the prevention of blindness came into existence. The mottoes of the World Health Days in 1962 and 1976, namely, "Preserve Sight and Prevent Blindness" and "Farsight Prevents Blindness" respectively helped to increase the public awareness concerning need for sight care.

The first organised effort towards backlog of blindness on a national scale was undertaken by Govt. of India by the launching of a National Programme for Trachoma Control. This programme was subsequently merged into a National Programme for Control of Visual Impairment and Prevention of Blindness which in 1976 was redesignated as National Programme for Control of Blindness. Since then, it is being implemented as a 100% Centrally Sponsored Programme. India is the first country in the world to launch the Blindness Control Programme at the National Level.

### *National Programme for Control of Blindness*

#### **Objectives**

The overall objective of the National Programme for the Control of Blindness launched in 1976-77 may be summarised as follows:-

- (i) Provision of comprehensive eye care facilities for primary, secondary and tertiary levels of eye health care.
- (ii) Substantial reduction in the prevalence of eye disease in general and reduction in the prevalence of blindness from 1.4% to 0.3% by 2000 AD.

#### **Plan of Action**

The NPCB was formulated and launched as a Centrally Sponsored Scheme in 1976-77 with the following plan of action:

- (a) Intensification of educational efforts on eye health care through mass communication media and extension education methods.
- (b) Extension of eye care facilities through mobile units to restore sight and to relieve eye ailments by adopting an eye camp approach and by enlisting the participation of voluntary organisations.

(c) Establishment of permanent facilities for eye health care as an integral part of general health services at peripheral, intermediate and central sectors. Peripheral sector includes development of primary eye health services involving Primary Eye Health Centres and their outreach levels. Intermediate sectors include development of diagnostic and treatment facilities at district and sub-divisional levels. Central sector includes development of sub-specialist services, basic and applied research and manpower development.

## **Organisational Structure**

### *(A) Central Level*

The organizational structure for the implementation of this programme consists of the Central Ophthalmic Cell in the Directorate of Health Services, Ministry of Health and Family Welfare, with counterparts at the state levels. There is also a central co-ordination committee under the chairmanship of the Health Secretary with its counterpart committee at the state levels. At district levels there are District Co-ordination Committees, which are responsible mainly to co-ordinate the eye camp programmes as implemented by the Government and Voluntary Organisations. The PHC committee ensures proper follow-up of the operated cases. The Ministry of Health, Govt. of India also plans the strategy for eye health education and distributes prototypes of health education materials to all the implementing agencies in collaboration with the Information and Broadcasting Ministry. Many social and voluntary organisations participate in the programme by conducting eye camps. Several international agencies also assist in this national effort.

An Apex National Institute for Ophthalmology is to function as a centre of excellence to provide overall leadership, supervision and guidance in technical matters to all services and technical institutions under the programme. Dr. Rajendra Prasad Centre for Ophthalmic Sciences, New Delhi, is identified for this purpose. There is an ophthalmic advisor at the central level to advise on all matters concerned with the Programme.

### *(B) Regional Level*

At the regional level, there are Regional Institutes of Ophthalmology which are strengthened by the provision of modern equipments and faculty strength. The Regional Institutes are responsible

for the development of appropriate technology for the development and provision of specialised tertiary care and services and demonstration of training programmes for medical colleges and other training institutes in the region.

*(C) State Level*

Health being a state subject, NPCB is being directly implemented by the State Programme Officers in the States and Union Territories under the norms of the Centre. The guidelines are being provided by the Deputy Director General (Ophthalmology) in the Directorate of Health Services, Ministry of Health, Govt. of India, who is the programme officer at the national level for NPCB. Out of 25 States and 7 Union Territories, only 18 Ophthalmic Cells at the State Levels have so far been established, headed by a State Programme Officer with administrative and technical staff, equipment, transport, etc. The State Programme Officers are usually Additional Directors/Joint Directors or Deputy Directors at the state levels. Other States and Union Territory administrations have entrusted the responsibilities to an officer of their Health Directorate. There are ophthalmic advisors in the state to advise on the Programme.

*(D) District Level*

The eye care services under the direction of the State Government are provided through district hospitals. These hospitals function as specialist centres of eye health care and provide technical support and referral advice for cases that cannot be adequately treated in the peripheral Institutions.

Mobile ophthalmic units are an integral part of the peripheral sector and primary eye care services. They are located at the local district hospitals or at the nearby medical college for technical and other back up facilities. These units are crucial to the provision of the specialist services at the established health centres and hospitals. These mobile units are well equipped and adequately manned to extend comprehensive eye care services. Each Central Mobile Unit is expected to cover 5 districts and to hold 15-20 eye camps and to perform 1500-2000 intra-ocular operations a year.

Departments of Ophthalmology in 60 medical colleges are upgraded and strengthened with additional equipment and faculty strength and re-oriented to lay special emphasis on community ophthalmology.

### *(E) Peripheral Level*

The staff of the Primary Health Centre at the headquarters as well as in the fields are suitably trained to play their respective roles and discharge responsibilities in connection with these service activities of the NPCB.

In addition to all the staff, one ophthalmic assistant has been sanctioned for each identified PHC with a view to assist the medical officer in charge of the primary health centre in assessing visual acuity, performing refraction, training of primary health centre staff for prevention of blindness, conducting school eye health performance, monitoring the progress of the NPCB activities and co-ordinating the ophthalmic relief work of the government mobile ophthalmic unit and other voluntary organisations working in the area. Ophthalmic equipments of the value of Rs. 5,000 per PHC are provided for upgrading eye care services at the PHCs.

### **Eye Health Education on Prevention of Blindness**

Education of the people on the problem, causes of blindness as well as on the facilities and measures in blindness control programme, are given high priority in the NPCB, as it is realised that without active public co-operation and participation, preventive interventions cannot be successfully carried out and mobilised. Co-ordination of all sectors including governmental and non-governmental is very essential at all levels. Utilisation of mass media and indigenous media is extremely important in this programme.

National Society for Prevention of Blindness (NSPB), India, has been identified as the body for giving support to health education. It establishes media resource centres in collaboration with the Central Health Education Bureau (CHEB) and the National Council for Educational Research and Training (NCERT).

### **Voluntary Organisations**

Voluntary organisations have played a very important role in the control of blindness in India. They were active in the fields of educational, preventive, rehabilitative and surgical services to control blindness many decades before the problem was taken up by the government as a national programme. Some of the more active voluntary organisations in the field of prevention of blindness are:-

- National Society for prevention of Blindness (NSPB)- India, located at the Dr. R. P. Centre for Ophthalmic Sciences, New Delhi with its branches spread all over the country.
- Royal Commonwealth Society for the Blind
- Lions International and its branches
- Rotary International and its branches
- International Agency for Prevention of Blindness (IAPB)
- Christoffel Blinden Mission
- Helen Keller International, etc.

### **Man-Power Development**

Considering the importance of technical manpower and time-bound targets for effective implementation of its services the programme gave priority to man-power development from the very beginning.

The more important training programmes are:-

- Training of Paramedical Ophthalmic Assistants (PMOAs)
- Orientation Training of medical graduates and Ophthalmologists for the needs of the NPCB
- Orientation/refresher training of medical officers in primary health centres and district hospitals
- Continuing medical education for Ophthalmologists.

The PMOAs are trained in 37 training schools attached to selected medical colleges/regional institutes/national institutes. Training of primary health centre medical officers (7-15 days) is to be conducted in medical colleges/district hospitals/selected eye hospitals in order to prepare them to integrate eye health care into the comprehensive health care delivery services and to guide and supervise the work of the ophthalmic assistants. The medical officers of the primary health care centre, in turn, carry out orientation training of the PHC staff to ensure that they have adequate knowledge and skills regarding their roles and responsibilities and discharge them effectively.

### **Pattern of Assistance**

The NPCB is a central scheme, 100% financed by the Central

Government. Central assistance is provided to the States/ UTs for:-

- Creating/strengthening infrastructures
- Procuring materials and equipments
- Meeting recurring expenditure on maintenance and operation of services
- Establishing eye banks
- To provide assistance to social and voluntary organisations as per approved pattern of financial assistance.

Policy issues in relation to blindness and impairment are referred to the Central Council of Health and Family Welfare which meets at least once a year. The ministry functions through its Central Ophthalmic Cell in the DGHS of the ministry and is placed in the charge of DDG (Ophthalmology). The Central Co-ordination Committee of the NPCB periodically reviews the plan and its implementation. The ministry is advised by an Advisor (Ophthalmology). Almost similar planning and management structures are present in the states and the districts.

### **International Assistance**

Two organisations have been particularly active in assisting the development of the programme's activities under NPCB since 1980.

#### *World Health Organisation (WHO)*

Main areas of assistance by the WHO include:

- (1) Fellowship/training under the prevention of blindness programme
- (2) Survey and evaluation studies
- (3) Provision of equipments to various institutions.

WHO is also assisting NPCB in organizing workshops and seminars at national and state levels and sponsoring fellowships for regional and extra regional countries, in the professional development of manpower and supply of sophisticated ophthalmic equipment.

#### *Danish Assistance*

In 1978, an agreement was signed between the Government of

India and the Government of Denmark on Danish support to supply equipments to mobile clinics and Danish participation in the evaluation of the programme. During the first phase of the Danish assistance (1978-87), an assistance of Rs.10.12 crores was provided to supplement the programme. Experience of 10 years of implementation of NPCB has shown the need to further strengthening the programme in areas of curative and preventive eye care other than cataract operations, upgrading of professional ophthalmological knowledge and status of medical training, as well as generation and dissemination of information about eye health care.

### *Danish International Development Agency (DANIDA)*

Danida has taken notable interest in helping the development of service structures required for NPCB more particularly in:-

- Supply of equipment
- Covering certain recurring costs
- Manpower development
- Establishment of management system at state level
- Establishment and development of monitoring and evaluation systems
- Providing health education materials, including teaching and information aids.

Danida assistance for phase II i.e., 1989-94 amounts to Rs. 22. 245 crores.

### **District Blindness Control Societies (DBCS)**

The districts are very crucial for the implementation and co-ordination of all the health services delivery in India. All the states and the union territories have been asked to establish District Blindness Control Societies which would be registered under the Societies Registration Act XXI of 1860. These societies will function under the Deputy Commissioner/District Magistrates of the district for the implementation of the NPCB by involving the voluntary organisations of the area and by raising funds from local resources. The district surgeon will be member secretary of this society at the district level.

## Other Salient Activities

Zonal action groups for south and north zones comprising various states and UTs are constituted for efficient implementation of the programme.

Lectures on the NPCB were introduced in the course for IAS probationers to make them aware of the blindness problem when they are posted in the districts or sub-divisions. The programme was also included in the training course of the Anganwadi workers in the primary health centres.

Statistical information on the implementation of NPCB reveals that a total of 121.4 lakhs cataract operations have been performed during the period 1981-91.<sup>15</sup> The Infrastructure developments for the period 1981-92 have been as follows:

### Statistical Information

Infrastructure Developed	till 1-4-1992
a) Central mobile units	80
b) Strengthening of PHCs	5050
c) Development of district hospitals	404
d) Establishment of regional institutes	10
e) Upgradation of Medical Colleges	60
f) Establishment of Ophthalmic Asst. Training schools	37
g) District mobile units	276
h) State ophthalmic cells	18
i) Eye banks	131
j) Pilot districts	5
k) District Blindness Control Societies (DBCS)	35

### Deafness

Comparatively very little has been done so far for the speech-handicapped as a separate group. The specialised needs of the deaf in the development of speech have received only limited attention. However, in recent years there have been some concerted efforts in the field of medical research and treatment to highlight deafness as a human problem and to provide preventive and accelerative measures.

The All India Institute of Medical Sciences, with a medical school, sponsored by the central government, has set up a programme with three major components.

1. Clinical services for speech and hearing handicapped persons
2. Research studies in communication problems, and
3. Training of personnel in speech and hearing rehabilitation.

The Institute offers speech and hearing services for both children and adults with problems such as cleft palate, cerebral palsy, aphasia, post-laryngectomy, hearing loss, voice disorders, stuttering, delayed speech, and articulation defects, thus including a wide range of both organic and functional disorders.<sup>16</sup> The staff members are encouraged to do independent study of professional literature with a view to clinical application on patients they are serving.<sup>17</sup>

The professional team also provides services in family counselling and home practice, using specific techniques and practice materials. A re-evaluation of each patient is made at three month intervals. Consultation is available from the various departments of the medical school, such as psychiatry, plastic surgery, and radiology.

Research concerning speech and hearing problems was conducted in 1962 by the Deafness Research Project set up at the Christian Medical College and Hospital in Vellore in collaboration with the John Hopkins Hospital in Baltimore and with support from the National Institutes of Health in the U. S. A.<sup>18</sup> The objectives of this project were: (1) to determine the incidence of hearing loss in the general population; (2) to identify the diseases causing hearing loss, with emphasis on the role of common infections, tropical diseases, and nutritional deficiencies; (3) to develop valid hearing test procedures and apply these to a selected group for the establishment of norms; and (4) to obtain materials for pathological medical analysis such as temporal bones and the brain of deceased persons from an experimental group.

As the work of the Deafness Research Project continued an increasing number of persons came to the centre for assessments, treatment and rehabilitation although the centre was equipped only for research and not for treatment or rehabilitation. In general there are very few speech or hearing clinics in India for assessment and guidance as to suitable treatment. Even in some medical centres where medical

and surgical treatment is given, no educational or vocational services are provided for the patients. Many physicians do not recognise the importance of early detection and general rehabilitation. As a result, some partially hearing persons attend schools for the deaf, and adult vocational needs are neglected. There is in general a lack of both professional and lay knowledge as to what can and should be done for those with impaired hearing.<sup>19</sup>

A further research project was initiated at the Christian Medical College, Vellore, in March 1966, with SRS support to develop hearing and speech test procedures based on Indian languages. A beginning was made in the Tamil language to develop comprehensive medical, audiological, and counselling services for patients and parents in terms of local conditions, explore the possibilities of manufacturing hearing aids through local industries and materials, establish a programme of community education and guidance concerning speech and hearing problems and discover ways of expanding employment opportunities and demonstrate to employers the capacities of those with speech or hearing limitations.<sup>20</sup>

Limitations in technical equipment were revealed by a 1966 nation-wide questionnaire survey responded to by 69 out of 82 teaching hospitals. A discussion of ways to meet these needs was held at two All India Workshops on Speech and Hearing Problems held in 1966 and 1967. Plans were drawn up for training programmes for specialized personnel at the undergraduate level. The need for Indian production of low-cost and easily repairable hearing aids and audiometers was emphasized and the Bharat Electronics Company in Bangalore was urged to resume the manufacture of audiometers, which had been discontinued in 1962 because of defense needs. Specifications for the manufacture of hearing aids were drawn up and the establishment of speech and hearing centres in all the teaching hospitals in the country was recommended. Progress reported in 1967 included:

1. the opening of three centres for training speech and hearing personnel at the B. Y. L. Nair Charitable Hospital in Bombay, the All India Institute for Speech and Hearing in Mysore (associated with the Christian Medical College and Hospital in Vellore) and the All India Institute of Medical Sciences in New Delhi;

2. the setting up of a panel on hearing aids by the Indian Standards Institute to draft specifications for hearing aids which are to be manufactured in India.<sup>21</sup>

A rising interest in the areas of speech and hearing has resulted from these efforts. It is reported that departments of Otolaryngology in some medical schools are developing attached speech and hearing centres, and that courses in audiology and speech pathology are being added to graduate programmes. The Indian Speech and Hearing Association was formed, and held its first annual conference in Calcutta in May 1968.<sup>22</sup> A third workshop held in Vellore in January 1969 continued the work of the earlier workshops.

The first speech therapy clinic was established at the B. Y. L. Nair Charitable Hospital in Bombay in January 1963, under the guidance and medical supervision of the department of Otolaryngology. By the middle of 1966 the schools for the training of audiologists and speech pathologists were established in Bombay and Mysore respectively. The Audiology and Speech Therapy School at the Bombay hospital was made possible by philanthropic aid and a grant from the Municipal Corporation. A two-year course, followed by a four-month internship, leads to a B. Sc. degree.<sup>23</sup> The speech therapy school in Mysore came into existence as a result of the co-operation between the All India Institute of Speech and Hearing, the Central Government Ministry of Health and the Maharaja of Mysore who donated the land for the school. Lectures in audiology and speech pathology are incorporated into the training programmes for students in paediatrics and otolaryngology as well. In addition to its undergraduate programme, the Mysore School started a masters level programme in 1966 and admits about 32 students to the two programmes yearly.<sup>24</sup>

In 1977 the Indian Council of Medical Research sponsored four research projects in the Medical Colleges of Trivandrum, Madras, Calcutta and Delhi with a view to finding out the incidence and causes of deafness in rural and urban areas. At each centre 6000 cases were studied, 3000 urban and 3000 rural.

In conclusion it may be remarked that though there has been reasonable progress in the provision of medical services in India during the last four decades, much remains to be done in these areas considering the enormous problem of the incidence of physical disabilities in the country.

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## CHAPTER XX

### EDUCATION

Article 45 of the Constitution of India lays down: "The State shall endeavour to provide within a period of 10 years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of 14 years".<sup>1</sup> This constitutional provision for free and compulsory education until the age of 14 years is directly aimed at eradicating illiteracy. Even 40 years after the adoption of the Constitution this objective remains far from being achieved. This is more true in the case of persons with disabilities.

The early efforts for the education of the handicapped in India were initiated by missionary groups. Many of the special institutions for the care, training and education of the handicapped are still run by voluntary organizations with certain amount of state government assistance. They do not charge fees. The type of services they offer vary greatly from one region or community to another, but most institutions provide primary education combined with training in a few simple handicrafts, including music for the blind.<sup>2</sup>

It is difficult to arrive at any agreed figures concerning the number of schools provided for children with different kinds of handicaps. The totals given in various sources include a great variety of centres and programmes, many of which are not actually schools nor do they offer any specific educational services.

Information concerning the sex and age group served, the number accommodated and the basis for admission is often not available.

It is commonly known that only a small proportion of handicapped in each category is receiving any kind of service, including education. In 1966 a report of the Ministry of Education indicated the following estimates of the number of school-age children who would fall in the following categories of the handicapped in India.<sup>3</sup>

Blind	400,000
Deaf	300,000
Orthopaedically Handicapped	400,000

According to the Final Report (1990) of the Committee for the Review of National Policy on Education 1986, the population of the educable handicapped in the 5-14 year age group has been estimated as follows:-<sup>4</sup>

Locomotor	12.20 lakhs
Visual disability	1.27 lakhs
Hearing disability	5.35 lakhs
Speech disability	7.44 lakhs

Even in the pre-independence period the Central Advisory Board of Education, in a report on the needs of various handicapped groups emphasized the general principle that segregation of the handicapped from the normal children should be regarded only as a last resort. It was recognised however, that the blind and deaf more frequently than other groups needed special educational arrangements with specially trained teachers. Almost all the services existing at that time took the form of residential institutions. This pattern of segregated education and training has continued to dominate the scene until recent years.

In this chapter we shall make a brief survey of the development of educational facilities for the four categories of the disabled in India.

### **Orthopaedically Handicapped**

For the purpose of education, the orthopaedically handicapped children may be divided into three main groups. The first group which, according to available data is the largest, may be called the 'slightly handicapped' that is those children whose disability is comparatively slight so as not to interfere with their normal programme of education. The second group or the 'moderately handicapped' consists of those

children who, because of difficulties of mobility, or ineffective use of the upper limbs etc. will require the services of a specialised school. The final group is the 'severely handicapped' group which may not be able to get to school at all. If they are to receive any education it will have to be in the hospitals, institutions or their homes.

There are yet two other groups of children coming under the category of the orthopaedically handicapped for whom completely separate services are usually necessary, and these are:-

1. The children with cerebral palsy and
2. The crippled child with additional handicaps such as blindness, deafness or mental retardation.<sup>5</sup>

In India today there are several educational and training programmes in operation, the main ones being:

- Arrangements for bed-side teaching school units of hospitals.
- Special residential schools for disabled children
- Special day schools for disabled children
- Facilities for disabled children to study at regular day school with the able-bodied.

Teaching in hospitals can be conducted in two ways either bed-side coaching or school units.

### *Bed-side Teaching*

The Bai Jerbai Wadia Hospital, Parel, Bombay was the first hospital in India where a school for bed-ridden children was started in 1949 by the Tata School of Social Sciences, under the auspices of the then Government of Bombay. Trained teachers follow a teaching programme for children in two wards of 20 beds each. One of the wards is for children suffering from bone tuberculosis and the other for those suffering from bone deformities. In both wards the children are hospitalised for fairly long periods of time.

Each child who is admitted to the wards is given educational, craft and recreational facilities. The media of instruction are Marathi, Hindi and English. There is individual bed-side coaching, and the entire programme has to be adjusted to the individual needs and level of progress of each member of the group.

There is no regular period of admission or discharge for these children, as it depends on the nature and extent of their illness. All teaching aids and equipments are provided to the children. As far as practicable, the syllabus for primary and secondary municipal schools is followed.

The hospital provides physical and occupational therapy facilities for those children for whom such treatment is recommended by the doctor.

### *School Unit in Hospital*

The Children's Orthopaedic Hospital, Mahalaxmi, Bombay was the first hospital in India where a regular school unit was started for child patients. The hospital is managed by the Society for the Rehabilitation of Crippled Children, but the school unit is directly under the Education Department of the Bombay Municipality. The school employs full-time Montessori-trained teachers to supervise a room for out-patient children between treatments or waiting for a bus to take them home, and for in-patient children when it is possible for them to join the group. The children vary in age-range and ability and the educational programmes are adjusted to meet the individual needs of each child. As far as possible, the curriculum of the Municipal primary school is followed, and the media of instruction are Marathi and Gujarathi. Since 1953 the Municipality has provided teachers to conduct more formal classes, comprising a supervisor with two assistants who could together teach in Hindi, Marathi, and Gujarati. All in-patients and out-patients of the hospital are eligible for admission to the school, but once their period of treatment is over, they can no longer continue their schooling there. Parents are then required to make alternate arrangement for them. One limitation in this programme is that the teachers take the regular school holidays and vacation periods, with the result that these children who need continuous daily assistance lack the help of teachers for a total of several months during the year.<sup>6</sup> Physical, occupational and speech therapy facilities are available for the children requiring such treatment.<sup>7</sup> A separate wing for the instruction and rehabilitation of cerebral palsied children is also functioning in the hospital.

At the Medical College Hospital, Nagpur, an association for crippled children, NARCOD, provides the services of a teacher for all the children in the hospital, in co-operation with the occupational therapy

department. In several other hospitals, however, the occupational therapist is called upon to assume the role of teacher as well. There have been instances when he had conducted literacy classes and also done regular teaching with some of his younger patients. Thus the occupational therapist is a very important member of the team, and the importance of the services he renders cannot be overlooked or minimised. It is not considered necessary to have specially trained teachers for those youngsters since they do not present special educational problems; their basic difficulty is usually one of instruction.<sup>8</sup>

### *Special Residential Schools*

The Ishwari Prasad Dattatraya Orthopaedic Centre in Madras provides a combination of educational and medical services for children with neuromuscular disabilities. Founded in 1950 by Mr. & Mrs. Rao as a memorial to their cerebral palsied son who died at the age of 14, it is named in his honour. The Ministry of Education contributed part of the cost of constructing the building and the attached hostel for 72 children, and funds for patient maintenance are donated by various individuals and charitable organizations.

A psychiatrist - an M.D with psychological training - tests the children to determine their mental ability. He is occasionally helped by psychologists from the Department of Psychology in the University of Madras. Boys and girls between the ages of 5 and 18 years are admitted to the school as boarders, whereas those from 3 to 5 years can attend as day scholars. Children can be admitted any time during the year in either the Montessori or primary section. The school has an elementary-school programme comprising classes I to VIII in which Tamil and English, and Telugu and English are taught. The media of instruction are Tamil and Telugu, and the curriculum followed is on par with the other schools in the State. A distinctive feature of this institution is that special arrangements are made for severely crippled students to be given bed side coaching. Training in craft is emphasized. Facilities for physical therapy and occupational therapy are also available. No fees are charged.

Minor surgery is performed at the centre, but for major surgery the children are sent to the Madras Orthopaedic Hospital.

Disabled Children's School and Hostel, Guntur was established in 1956. This school is residential and both boys and girls between the

ages of 6 and 18 years are admitted. Crippled children are sent to normal schools. Board, lodging and tuition are completely free.

School for Crippled Children, Wanoori, Pune was established in 1957 under the auspices of the Society for the Welfare of the Physically Handicapped, Pune. It is a residential school only for boys between the ages of 5 and 16 years.

There are three types of educational programmes conducted by the institution. Those children who are severely handicapped attend literacy classes on the premises. The medium of instruction is Marathi and Hindi is introduced after standard V. The emphasis is on craft. Those boys whose handicap is not too severe, are sent to a nearby regular day school where they study alongside able-bodied children. Some boys are sent to technical schools where they learn a trade suitable to their ability and aptitude.

Saket, Chandigarh, Punjab is a unique home for orthopeadically handicapped children, established in 1957. Both boys and girls between the ages of 5 and 12 years, suffering from crippling conditions but who are mentally alert, are admitted. The children are given medico-surgical treatment in addition to educational and vocational training. Facilities for physical and occupational therapy are also available.

On the education side the children are taught up to the middle school, whereas on the vocational side the children learn such trades as leather work, carpentry, sewing, knitting, wool work, toy-making and embroidery. Home for Crippled Children, Nagpur is a government institution managed by the Education and Social Welfare Department of Maharashtra State. Crippled boys between the ages of 5 and 16 are admitted as resident students, and girls can attend as day scholars. The media of instruction are Marathi and Hindi, and the curriculum is in accordance with that followed in other government recognised schools. The school has facilities for occupational therapy and intensive pre-vocational training.

Home for Crippled Children, Baroda is an institution run by the Government of Gujarat. It was established in 1941 and admits only boys. Education is imparted through Gujarati and courses prescribed for primary schools are followed. Teaching up to standard II is given at the institution after which the students attend regular schools outside. Crafts are taught to all children. There are facilities for physical therapy and occupational therapy too.

The Vocational Rehabilitation Training Centre, Ludhiana has a Special Education Department. The Department provides education up to plus 2 level approved by the Punjab School Education Board and the students for higher studies are admitted in the government and private colleges as well as in the Universities.

The Home for Handicapped (Polio) Children, Trivandrum, Kerala, known in short as the Polio Home, one of the charitable institutions of the South Kerala Diocese of the Church of South India, was established in April 1974. The main objective is total rehabilitation at an early age minimising the disability and enabling those affected to gain mobility and lead a self-reliant life. This is done through physiotherapy treatment and provision of suitable walking aids along with education up to the 10th standard which is carried out in the school run by the Home itself following the State Education Department curriculum.

### *Special Day Schools*

The S.E.C. Day School in Bombay, run by the Society for the Education of the Crippled (child and adult) was established in 1960. Admission is open to both boys and girls of a primary age-group. Education up to standard VII is imparted, the medium of instruction being Marathi as well as Gujarati. English and Hindi are taught as subjects and music and handicraft form a part of the curriculum. The syllabus is in accordance with the requirements of the Education Department of the Bombay Municipality.

An extensive extra-curricular programme is a distinctive feature of this school. There are regular 'game evenings' and guided visits to places of interest.

### *Schools for Children with Multiple Handicaps*

The Institute for Physical Medicine and Rehabilitation in New Delhi started a school in 1955, incidentally, as a part of the Occupational Therapy Institute. It provides for 200 boys and girls, both day and residential, whose age at admission is 1 to 16 years. Both mentally retarded and orthopaedically handicapped youngsters, especially post polio and cerebral palsied cases, are accepted. The child may be referred by a hospital, a medical practitioner, an institution, or parents. The services include assessment of mental and physical capacities for both educational and vocational purposes; physical therapy and

occupational therapy; training in the activities of daily living, craft activities and pre-vocational and vocational activities; regular school education; assessment of finger and hand dexterity for particular industrial jobs and training in music and recreational activities to improve personality and social adjustment. The children are taken up to the mountains each summer for a month's camp experience. A Hospital Volunteers Society composed of the wives of professional men gives assistance in the school. Fees are charged according to the income level of the parents.<sup>9</sup>

Matru Seva Sangh Day School for Mentally Handicapped and Crippled Children, Nagpur, admits students who are doubly handicapped, having a crippling condition accompanied by mental retardation. Admission is at the commencement of the academic year. The school gives training at pre-primary and primary levels extending to middle and secondary stages, wherever possible. The medium of instruction is Marathi. Considerable emphasis is laid on training in craft. Trained teachers conduct the education programme with the head of the school who is a qualified occupational therapist.

Both boys and girls up to the age of 16 years are admitted to the school. A distinctive feature is that parent-teacher meetings are held twice a month to enable free exchange of ideas and to help the parents in understanding the defects of their children.<sup>10</sup>

## **Visually Handicapped**

### *Evolution of Institutions*

The first school for the blind in India was founded by Miss. Annie Sharp, a Christian Missionary in the year 1887 in Amritsar. For 16 years it was conducted in the premises belonging to the Church of England Missionary Society. In 1903 it was transferred to Rajpur, Dehra Dun, U. P. Later, the school was named after the founder. Now it functions as a residential school for blind girls and young boys.

The School for the Blind, Palayamcottai was the second one to be established. It was started by another missionary lady, Miss A. J. Askwith. She was the Principal of the Sarah Tucker College for Girls. About the year 1888 a blind boy came to her bungalow begging, but finding that it was a school he had visited, he asked if he could be admitted and taught like other children. Miss Askwith did

admit him and he proved an excellent pupil. He very quickly mastered his few books and was filled with the desire to share the same opportunity with other blind children of the neighbourhood. As a response to his enthusiasm Miss Askwith officially opened the first class in the year 1890. In those days no special apparatus was available and books in Moon type were in short supply. For the first eighteen years of its existence the school was an integral part of the Sarah Tucker College, but by the year 1908 it was moved to entirely new surroundings and became independent of the college. At the present time it has grown up to one of the biggest schools in India.

The Calcutta Blind School was started in 1897 by an Indian, the late Mr. Lal Behari Shah. It is told that Mr. Shah had to hire his first blind pupil to give him his daily lessons, so that the boy might be no loser while he gave up his begging profession. In later years, Mr. Shah himself became blind from sympathetic ophthalmia.<sup>11</sup> The first school in Western India, was the American Mission School for the Blind founded by Miss Anna Millard, in Bombay, in 1900. The Mission transferred the management of the school to the Society for the Protection of Children in Western India for an experimental period of three years. It was then renamed the Dadar School for the Blind. It reverted to the Mission in April 1942.

Dr. Nilkanthrai Chhatrapati, on becoming blind, left his medical profession and started a School for the Blind at Ahmedabad in January 1900. He continued to run the school till he was invited to take the Principalship of the Victoria Memorial School for the Blind, founded in 1902 in Bombay. Dr. Nilkanthrai brought with him his pupils and amalgamated his school with the newly founded one.<sup>12</sup>

The early decades of the twentieth century witnessed a steady growth in the number of schools and other establishments for the blind spread all over the country. By 1947, India had about fifty institutions in different places.

Soon after the beginning of World War II, the Government of India invited Sir Clutha Mackenzie to advise it on measures to be taken concerning the welfare of the blind in India, and to this end appointed him Adviser on Blindness to the Ministry of Health. The Government also appointed a joint committee of the Central Advisory Boards of Education and Health to investigate the causes of blindness and to make recommendations concerning ways of improving the lot

of the blind. The Ministry of Education then undertook to carry out several of the recommendations made. The Joint Committee issued a "Report on Blindness in India" that represented India's first attempt to plan services for the blind. A war-related project was the establishment in July 1943 of St. Dunstan's Hostel for the Indian War-Blinded started with six veterans at Dehra Dun as a branch of St. Dunstan's Hostel in the United Kingdom. On 1st January 1950, Govt. of India, Ministry of Education took over the hostel and renamed it as the Training Centre for the Adult Blind. During the following years, several new units were set up, such as: Central Braille Press (1951), Workshop for the manufacture of Aids and Appliances (1952), Sheltered Workshop (1954), Training Section for Blind Women (1957), Model School for the Visually Handicapped (1959) and National Library for the Print Handicapped (1963).

All these units were organised into an integrated whole as a National Centre for the Blind in November 1967. In 1973 the Government of India appointed a Working Group to prepare the outlines for a National Institute with special focus on research and development and training needs for the visually handicapped. In pursuance of the recommendations of the working group, the National Institute for the Visually Handicapped came into existence on July 2, 1979, upgrading the then existing National Centre for the Blind. In October 21, 1982 the Institute was converted into an autonomous body under the Ministry of Welfare.

Since independence there has been a steady growth in the number of schools for the blind in different parts of the country. Now there are about 250 schools. Most of these schools admit children 5 to 18 years of age and provide primary and secondary education. The subjects taught and the syllabus followed in the schools for the blind generally conform to those in the schools for sighted children. Importance is given to the teaching of the three R's (reading, writing and arithmetic). Instruction is given in the vernacular language of the concerned state. English and Hindi are also taught. In addition to languages and mathematics such subjects as social studies, general science, music and handicrafts are also taught. The importance of mobility training, physical education, indoor and outdoor games and other recreational activities for blind children is being increasingly realised and a number of schools have included such programmes also in their curriculum.

Some schools for the blind like Govt. School for the Blind, Poonamallee, Madras, J.P.M. School for the Blind (Blind Relief Association), New Delhi, Blind Boys Academy, Narendrapur, prepare the children for higher secondary examinations. The principle of integrated education for the blind has been widely accepted in India. The central government and several state governments like those of Maharashtra and Kerala are encouraging this system. In Kerala, the blind children who pass the 7th standard from a school for the blind are sent to an ordinary high school nearer to the school for the blind. The children are given accommodation in the hostel attached to schools for the blind near the high school where blind children are admitted. These children will get all the concessions allowed to the children in the schools for the blind. Moreover they will get the services of a special teacher of the blind who is designated as the resource teacher. Further those children who want to attend any other ordinary school can do so and avail the scholarships offered by the Ministry of Welfare and the facilities provided in the integrated education programme.

University education is no longer a dream for the blind. A good number of blind youngsters who complete the high school education join colleges. They study mostly arts subjects and languages. They are encouraged by the scholarships offered by the Ministry of Welfare, Govt. of India. Several Universities have offered special facilities and concessions to blind students.

In the State of Kerala, University education is practically free for the visually handicapped. Blind college students are given free accommodation in government hostels and hostels attached to private colleges and they are exempted from all fees.

### *Bharati Braille*

A major advance in the education of the blind occurred in 1952 when a uniform braille code, Bharati Braille, was developed which could be used for all Indian languages, replacing a total of at least ten braille codes that had been used previously, thus ending what was called "the battle of the types". Since Indian experts had not been able to standardize the braille code themselves, the problem was referred to UNESCO in 1949, and this organization evolved the Bharati Braille on the basis of the principles recommended by the World Braille Conference held in Paris in 1950. Thus it is possible today for a blind person to read books in other languages as well as his own since the

## BHARATHI BRAILLE HINDI ALPHABETS

अ ⠠⠠	आ ⠠⠠⠠	इ ⠠⠠	ई ⠠⠠⠠	उ ⠠⠠	ऊ ⠠⠠⠠	ऋ ⠠⠠⠠⠠	ए ⠠⠠
ऐ ⠠⠠	ओ ⠠⠠⠠	औ ⠠⠠⠠	अं ⠠⠠	अः ⠠⠠			
क ⠠⠠	ख ⠠⠠	ग ⠠⠠⠠	घ ⠠⠠⠠	ङ ⠠⠠			
च ⠠⠠	छ ⠠⠠	ज ⠠⠠⠠	झ ⠠⠠⠠	ञ ⠠⠠			
ट ⠠⠠⠠	ठ ⠠⠠⠠	ड ⠠⠠⠠	ढ ⠠⠠⠠	ण ⠠⠠			
त ⠠⠠	थ ⠠⠠⠠	द ⠠⠠	ध ⠠⠠⠠	न ⠠⠠			
प ⠠⠠	फ ⠠⠠⠠	ब ⠠⠠	भ ⠠⠠	म ⠠⠠			
य ⠠⠠	र ⠠⠠	ल ⠠⠠	व ⠠⠠	श ⠠⠠	ष ⠠⠠	स ⠠⠠	ह ⠠⠠
क्ष ⠠⠠	त्र ⠠⠠⠠⠠	ज्ञ ⠠⠠					

braille symbols have a phonetic basis applicable to the sounds in any language.<sup>13</sup> Today the Bharati Braille is used in all the institutions for the blind.

### *Teacher Training*

The first schools to introduce training courses for teachers of the blind were Calcutta School for the Blind, the Government School for the Blind at Hyderabad, and the Government School for the Blind at Poonamallee, Madras; but these courses were offered only sporadically depending on demand. The first regular course for teachers of the blind on an all India basis was a one year programme started in 1960 at Palayamkotta, by the National Academy of Teachers of the Blind established under the auspices of the National Association for the Blind and the National Christian Council.<sup>14</sup>

In 1963 a scheme to train teachers of the blind was started by the then Union Department of Social Welfare (now Ministry of Welfare). Grants are given to four regional centres managed by Victoria Memorial School for the Blind, Bombay, Ramakrishna Mission Ashram, Narendrapur, West Bengal, Blind Relief Association, Delhi and Government School for the Blind, Poonamalle, Madras. All the four centres function with a common syllabus and examination.<sup>15</sup> The course is of 10 months duration. The National Institute for the Visually Handicapped co-ordinates the courses and awards diploma to successful trainees. The Institute also conducts a course directly at Dehra Dun. These courses are now for Secondary School Teachers. N.I.V.H. extends 60% grant to voluntary organizations for conducting training courses for primary school teachers of the visually handicapped.

### *Braille Presses*

The education of the blind in India is hampered to a great extent due to a dearth of text books and other literature in braille. In order to ensure printing of books in braille, the Government of India, Department of Social Welfare set up the Central Braille Press in Dehra Dun in 1951 and helped the setting up of three other regional braille presses one each in Narendrapur (West Bengal), Madras and Bombay. The Central Braille Press undertakes the printing of books in Hindi and English. The braille press in Madras is attached to the Govt. School for the Blind, Poonamallee and administered by the Education Department of Tamil Nadu. The regional braille presses in Narendrapur

and Bombay are under the auspices of voluntary organizations - Ramakrishna Mission Ashram, Narendrapur and National Association for the Blind, Bombay, respectively. The former is concentrating on production of braille books in Bengali and English while the latter prints books in Gujarati, Marati and English. In addition to the above there are eleven braille presses in various states. They are:

1. Government Braille Press, Mysore.
2. Regional Braille Press, Hyderabad.
3. Christian Foundation for the Blind Braille Press, Madras.
4. Braille Press, Blind Men's Association, Ahmedabad.
5. Government Braille Press, M.P. State Govt. Panchayat & Social Welfare Directorate, Bilaspur.
6. National Association for the Blind Braille Press, Indore.
7. Kerala Federation of the Blind Sree Karthika Thirunal Shashtyabda-poorthy Memorial Braille Press, Trivandrum.
8. Sri. Ramakrishna Mission Vidyalaya College of Education Braille Press, Coimbatore.
9. National Federation of the Blind Braille Press, Bahadugarh, Hariyana.
10. Red Cross School for the Blind Braille Press, Berhampur, Orissa.
11. Blind Relief Association Braille Press, New Delhi.

### *Braille Equipments*

Proper education of the blind depends largely on the availability of special equipments such as braille writing frames, stylus, arithmetic frames (Taylor frames) and types, geometrical instruments, embossed maps etc. A special workshop for the manufacture of braille equipments has been functioning in the National Institute for the Visually Handicapped, Dehra Dun. However it could not meet the needs of the blind children adequately. The Blind Men's Association, Ahmedabad, has started the production of braille equipments. A few other private agencies have also come forward in this field. The Voltas Ltd. manufactured braille kits each containing seven items — a braille board, a pocket frame, two styluses, an abacus, a spur wheel and embossed tape and a scale, for the Royal Commonwealth Society for

the Blind and Christoffel Blindenmission. These kits were distributed by these agencies to blind children in different schools in India, free of cost. An indigenous braille writer, 'Taj Brailer' has been developed. It is being manufactured and distributed by Moksha Engineering, Hyderabad. Artificial Limp Manufacturing Corporation, Kanpur is producing braille slates, stylus as well as a braille short hand machine.

### *School for the Partially Blind*

The only school for the partially blind in India is situated at Rajpur and is an integral part of the National Institute for the Visually Handicapped. It was set up on the 4th of January 1959. It is now a full fledged secondary school from Class I to Class X and is co-educational. It functions as a residential school, providing free board, lodging, clothes and tuition to the pupils. Day pupils are also admitted. The medium of instruction is Hindi, but English is taught from the very beginning. Reading and writing skills are taught through braille.

### *Pre-school Education*

The pioneering pre-school education programme for the blind in India was started by the Mata Lachmi Nursery for the Blind, Sion, Bombay, which was established in 1970 as a joint project of the National Association for the Blind and the Mata Lachmi Trust. It looks after little blind children between 2 and 7 years of age, providing them in most cases with free education, boarding, lodging, medical treatment, transport and uniforms. It is run on regular Montessori lines making use of Montessori aids and apparatus. The medium of instruction is Marathi. After completion of the course each child is assured of a place in any one of the schools for the blind in the city. Above all, the little ones learn to adjust to their visual handicap in the routine of daily life.<sup>16</sup> At the Nursery the smaller children carry on with their number work, simple handwork, nursery rhymes, music and the braille alphabet and get themselves trained to perform the routine acts of daily life - eating, washing, dressing themselves etc. Older children are integrated with sighted nursery children at Shishu Vihar, Dadar. These blind children are accompanied by their teacher and an ayah. This system of integrating has proved to be very beneficial to the children. Blind children who are mentally deficient are sent every day to the school for children in need of special care, Sewri, under the charge of a specially appointed teacher along with an ayah to look after them.

In recent years the importance of pre-school education for the visually handicapped children is increasingly recognised and encouraged. Several schools throughout the country have started pre-school programmes.

## **Hearing Handicapped**

### *Evolution of Institutions*

The first attempt at the systematic education of the hearing handicapped was undertaken by the establishment of a school in Bombay by the Roman Catholic Mission in 1884. This was followed by the Calcutta Deaf and Dumb School in 1893. The latter, though started 9 years after the school in Bombay, progressed rapidly. The third institution for the deaf came into existence in 1896 in Palayamcottai in South India.

The expansion of the education of the deaf continued in the 20th century and the years from 1904 to 1940 saw the birth of thirty eight new institutions spread all over India. Due to the war as well as the dearth of trained personnel further progress and development in this field was limited during the years preceding independence. Hardly any new institution arose during this period except one in Jaipur, which was established in 1945. In April 1967 the Ministry of Education of the Central Government reported that there were then about 70 schools for deaf children, each of which having the local language as the medium of instruction. At present the total number of schools is 300.

An important development during the post-independence period has been the establishment of the Training Centre for the Adult Deaf at Hyderabad under the Central Government.

Within the last few years, facilities for training deaf children between the ages of 3 and 8 years have been developed. Institutions like Alibag School for the Deaf, Voluntary Education, Audiology and Research Centre, Bombay, Stephen School for the Deaf, Bombay, School for the Deaf-mute, Ahmedabad, were the pioneers in this area of development. In recent years several other schools in various parts of the country have started pre-school programmes for children with hearing handicaps. However, in general, it may be mentioned that very little has been done for the pre-school child with sensory handicaps.

Many of the schools for the hearing handicapped are reported to have serious short-comings. Although the oral method is stressed, many institutions still use the sign language,<sup>17</sup> which may be related to the practical problems of having too few trained teachers, a shortage of auditory equipment, and the difficulties encountered in obtaining replacement parts or repairs for this equipment.<sup>18</sup> Teaching aids are often inadequate, as are recreational and sports facilities.

On August 9, 1983 Ministry of Welfare, Govt. of India, established the Ali Yavar Jung National Institute for the Hearing Handicapped, Bombay. The objectives of the Institute include: providing training facilities to teachers, clinicians and to the different levels of health, educational and welfare personnel; developing educational programmes for the hearing impaired; undertaking basic and applied research; identifying local needs; planning and developing material for clinical and educational purposes; undertaking public educational programmes; providing comprehensive assessment and rehabilitation services to individuals with hearing impairment and associated disabilities; offering guidance and support to the hearing handicapped; providing follow-up and referral services and collaborating with voluntary agencies in initiating and co-ordinating different programmes.

### *Teacher Training*

In order to produce qualified personnel for the expansion of the education of the deaf a training college for teachers of the deaf was established in Lucknow in 1948. Although the oldest teacher-training course is that of the Calcutta Deaf and Dumb School, which was started in 1887, the first training college for teachers of the deaf was that in Lucknow. In 1953 the syllabus of this Training College was reorganised by a committee consisting of the Director of Teachers Training Colleges in Uttar Pradesh and the technical personnel trained in the education of the deaf abroad. A few other programmes at present are those at the Palayamkottai School for the Deaf, Lady Noyce School for the Deaf and Dumb in New Delhi, the Government School for the Deaf in Hyderabad, and the Ahmedabad Deaf and Dumb School.<sup>19</sup>

Ali Yavar Jung National Institute for the Hearing Handicapped, Bombay offers Bachelors degree in Education of the Hearing Impaired, Bachelors degree in Audiology and Speech Pathology, Certificate Course for Junior Educators and Certificate Course in Communication Disorders.

## **Speech Handicapped**

As indicated in Chapter XIX, so far very little has been done for the speech handicapped as a separate group and the specialized needs of the hearing handicapped in the development of speech have received only limited attention. The work being done at the All India Institute of Medical Sciences, New Delhi and other institutions like B.T.L. Nair Charitable Hospital in Bombay and the All India Institute for Speech and Hearing in Mysore have already been mentioned.

## **Integrated Education Programme**

India has witnessed a phenomenal expansion of educational opportunities in the post-independence period. Disabled children, however, have not benefited substantially from this growth in educational facilities. Government of India, therefore, has brought education of this group of children for special attention in order to achieve the goal of education for all. The objective is to integrate the handicapped with the general community at all levels as equal partners, to prepare them for normal growth and to enable them to face life with courage and confidence.<sup>20</sup>

The Centrally Sponsored Scheme of Integrated Education for the Disabled Children (IEDC) was started in 1974-'75 by the then Ministry of Social Welfare. In 1982-'83, the scheme was transferred to the Department of Education.<sup>21</sup>

Being a centrally sponsored scheme the entire cost of this programme is reimbursed to the States. The State Education Department is the implementing agency. The State Government may take the assistance of voluntary organizations also for this purpose as is feasible.

IEDC programme purports to provide educational opportunities for the disabled children in common schools, to facilitate their retention in the school system. Disabled children who are placed in special schools should also be integrated in common schools once they acquire the communication and daily living skills at a functional level.

Under the scheme educational facilities are provided to disabled children who can be integrated in the general school. The children are given benefits such as boarding and lodging charges and allowances for books and stationary, equipments, uniforms, transport, readers (in

the case of the blind) and escorts (in the case of severely handicapped) etc. Support services like resource or itinerant teachers are provided.

The scope of the scheme includes pre-school training for the disabled children and counselling for the parents. This would be an activity preparatory to the child coming into the regular school system. It would include, among other things, special training for the hearing handicapped children, mobility and orientation training for the visually handicapped, daily living and communication skills training required by children with other disabilities as well as parent counselling and training in home management of these children.

The education of the disabled children under this scheme will continue up to the Senior Secondary School level and includes vocational courses equivalent to the Senior Secondary stage.<sup>22</sup>

In 1982-'83 only 2500 students were covered under the scheme. In 1987 the scheme was thoroughly reviewed and revised in pursuance of the National Policy of Education. Coverage of the scheme was extended to 6000 schools in 22 States. Up to 1993 about 42,000 children have been placed in common schools under this programme.<sup>23</sup>

### **National Policy on Education**

The National Policy on Education formulated in 1986 made a specific reference to the Education of Children with Disabilities. The NPE suggested the following measures:

- i. Wherever it is feasible, the education of children with motor handicap and other mild handicaps will be common with that of others.
- ii. Special schools with hostels will be provided, as far as possible, at district headquarters, for the severely handicapped children.
- iii. Adequate arrangements will be made to give vocational training to the disabled.
- iv. Teachers' training programmes will be re-oriented, in particular for teachers of primary classes, to deal with the special difficulties of the handicapped children.
- v. Voluntary effort for the education of the disabled, will be encouraged in every possible manner.<sup>24</sup>

The Programme of Action on the NPE mentioned the detailed measures to be taken, important among them being massive in-service training for teachers, orientation programmes for the administrators, development of supervisory expertise in the resource institutions like the State Council of Educational Research and Training (SCERT), District Institute of Educational Training (DIET) etc. It also called for provision of incentives like the supply of aids, appliances, text books and free uniforms.<sup>25</sup>

The Committee for Review of National Policy on Education 1986 in its final report observed that 'it should be stated to the credit of NPE 1986 that provision for education of the handicapped was mentioned under the part relating to equal educational opportunities. For the first time, because of this Policy stipulation, education departments were put in the right perspective of having to treat education of the handicapped as their legitimate function. It is also to the credit of the Policy that it mentioned about the mainstreaming of the education of the handicapped and about teacher training. The forthright statement of NPE regarding involvement of voluntary agencies, significantly opened up implementation of integrated education of the disabled children to non-government organizations'.<sup>26</sup>

The Central Advisory Board of Education (CABE) Committee which was constituted on 31st July 1991 to review the implementation of various parameters of NPE taking into consideration the report of the NPERC and other relevant developments since the policy was formulated and to recommend modifications to be made in NPE also dealt with the education of the handicapped.<sup>27</sup> On the basis of the recommendation of the CABE Committee the Programme of Action 1992 was formulated. The Programme of Action also has given due consideration to the education of the handicapped. In the POA document it is stated: "for achieving equalisation of educational opportunities, children with disability should have access to quality education comparable to other children. However, considering the financial resources likely to be available during the 8th Plan the targets for education of disabled children would be as follows:-

- (i.) Children who can be educated in general primary schools
  - (a) Universal enrolment by the end of 9th Five Year Plan.
  - (b) Ensuring achievement of minimum level of learning through adjustment and adaptation of curriculum and teaching to special needs.

- (ii) Children who require to be educated in special schools or special classes in general schools
  - (a) Universal enrolment by the end of the 9th Five Year Plan.
  - (b) Ensuring achievement of level of learning commensurate with their potential.
- (iii) Reduction of drop out rates on par with other children.
- (iv) Providing access to disabled children to secondary and senior secondary schools with resource support and making special provision for vocational training of these children, particularly those with intellectual disabilities.
- (v) Reorienting pre-service and in-service teacher education programmes including pre-school teachers training programmes to meet special needs in the classroom.
- (vi) Reorienting adult and non-formal education programmes to meet educational and vocational training needs of persons with disability.<sup>28</sup>

In brief it may be concluded that the education of persons with disabilities in India has been recognised as an intergral part of the educational system and the policy and programmes adopted in recent years have been in this direction.

### Footnotes

1. *Indian Constitution Art. 45 as amended up to date by the Constitutions (Forty second Amendment) Act 1976*, with short notes by Virendrasingh, Advocate, H.C., Allahabad, Ram Narain Lal, Beni Prasad Law Publishers, p. 17.
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3. D.S. Kothari, *Report of the Education Commission 1964-66*, Govt. of India, Ministry of Education, Education and National Development, New Delhi, Govt. of India Press, 1966, p. 123.
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## CHAPTER XXI

# VOCATIONAL TRAINING AND EMPLOYMENT

The importance of vocational training and employment in the rehabilitation of persons with disabilities needs no further emphasis. Job placement involves many factors: the handicapped individual must have the skill and physical abilities necessary for handling a particular job; he must be able to meet the standards of work performance set up for that job; he must not be a safety hazard to himself or to his co-workers; and the job must not fatigue him unduly or enhance his disability.

It is increasingly understood that no one should be expected to employ handicapped persons who are untrained, incompetent, emotionally unstable or unable to maintain themselves in a work environment.<sup>1</sup>

In this country with general unemployment, underemployment and even competition with child labour, the problem of finding jobs is still greater for the handicapped than for the able bodied.

The percentage of employed among the total number of handicapped persons in India is small because:

1. There are very few institutions to educate and train them.
2. The training may not prepare them for available jobs.
3. Employment of the handicapped is not required by law.
4. Employers in open industry are concerned about a possible lack of acceptance of the disabled by fellow employees, their accident proneness, and resultant compensation costs.

5. There are no organised programmes to provide part-time or full-time work at home.
6. Vocational guidance and social adjustment programmes are inadequate.<sup>2</sup>

The Government of India held the First National Seminar on the Training and Employment of the Physically Handicapped in Bangalore from December 16 to 22, 1961. The delegates at this conference included representatives of the central and state governments, voluntary organisations, employers' groups, a labour union and an international organization.<sup>3</sup> Six special subjects were discussed: training of the blind, training of the deaf, training of the orthopaedically handicapped, employment of the physically handicapped, the teaching profession, and the administration of services for the physically handicapped. A broad range of recommendations resulted concerning what could and should be done to provide adequate opportunities for training and employment:

Methods of occupational analysis to determine those occupations suitable for the handicapped.

Steps to be taken in determining those occupations which are not overcrowded.

Machinery to be set up to maintain liaison between training and employment establishments.

Integration of vocational counselling and guidance into the training programme and placement services.

Provisions for retraining when a change of job is necessary.

Type and follow-up services.

Qualifications of special employment officers for the physically handicapped.

Training for these special officers.

Criteria for determining which persons are suitable for open employment, sheltered employment, or home work.

Subsidies for sheltered employment.

Pilot home work schemes.

Machinery for securing rural employment.

Industrial employment units which could be set up by state governments for the handicapped.

Separate provisions for the blind and deaf.

Possible range of state employment.

Means for undertaking a public education campaign.

Provision of residential accommodation for handicapped persons employed in urban areas.

Need for accurate statistical survey based on international definitions of categories of the handicapped.

Enactment of suitable legislation assisting the handicapped.<sup>4</sup>

Even after three decades these recommendations remain relevant.

Since that initial conference several other meetings have been devoted to the question of vocational rehabilitation of the disabled. In July 1961, the Fellowship for the Physically Handicapped held a symposium at the University of Bombay on the topic of 'rehabilitation, its benefits and possibilities from bed to job'. The Indian Conference of Social Work, in collaboration with the Indian Society for the Rehabilitation of the Handicapped conducted a seminar on Vocational Rehabilitation and the use of Normal Facilities for the Handicapped, at Pune from April 23 to 24, 1966. Two other important conferences in the field have been the National Seminar on Rehabilitation Services and Research from December 4 to 6, 1967, conducted in the Medical College, Trivandrum, which was sponsored by the Vocational Rehabilitation Administration, Department of Health, Education and Welfare, U.S.A. and the National Seminar on Vocational Rehabilitation of the Physically Handicapped - Role of Government and the Community, organised by the Central Institute of Research and Training in Public Co-operation from April 11 to 15, 1972, in New Delhi.

It was in 1959 that the Directorate General of Employment and Training in the Ministry of Labour and Rehabilitation, which is the Headquarters of the National Employment Service in India, started operating in the field of rehabilitation of the handicapped also. In that year, the first special employment exchange for the physically handicapped was set up in Bombay. At present, there are 22 special employment exchanges for the handicapped. These exchanges have

been following a selective placement technique in referring and placing the handicapped in a variety of jobs. After gaining some experience in this field of activity, the special employment exchanges, however, felt that the placement efforts for the physically handicapped persons would not be very fruitful unless the residual capacities of the job seekers reporting to them were first evaluated and some adjustment training was also provided to them before they were presented to the employers for consideration against jobs suitable for them.

Since it was not possible to develop facilities for vocational evaluation of the residual capacities of the handicapped and their adjustment training by the special employment exchanges, it was decided to provide such a support to them through the setting up of separate Vocational Rehabilitation Centres (VRCs) to attend to this task.

An agreement was signed between the Government of India and Government of U.S.A. in the year 1960, for the setting up of two Vocational Rehabilitation Centres, one at Bombay and the other at Hyderabad, for assessing the vocational and psychological needs of the physically handicapped persons and to render them rehabilitation assistance. Currently, there are 17 such centres functioning in various parts of the country. They are at Hyderabad (Andhra Pradesh), Guahati (Assam), Patna (Bihar), Delhi, Ahmedabad and Vadodara (Gujarat), Bangalore (Karnataka), Trivandrum (Kerala), Jabalpur (Madhya Pradesh), Bombay (Maharashtra), Bhubaneswar (Orissa), Ludhiana (Punjab), Jaipur (Rajasthan), Madras (Tamil Nadu), Agartala ( Tripura), Kanpur (Uttar Pradesh), and Calcutta (West Bengal).

At the initial stages, the VRCs have been studying and evaluating the backgrounds, aptitudes and abilities of the handicapped with a view to assisting them in developing the required adaptations or adjustments through training and on the basis of which the special employment exchanges have been placing them in suitable jobs/work. Recently the VRCs have been given co-sponsoring powers by the Department of Personnel and Administrative Reforms and the Bureau of Public Enterprises to step up the placement of physically handicapped persons. The special employment exchanges for the handicapped have also been functioning as separate agencies.<sup>5</sup>

The National Institutes for the Handicapped and several national and state organizations of and for the disabled offer vocational training

with a view to equipping different categories of disabled persons for remunerative jobs.

In the following paragraphs we shall briefly review some of the existing facilities for the vocational training and employment of the three major categories of the handicapped.

### **Orthopaedically Handicapped**

The earliest rehabilitation efforts for the handicapped, sponsored by the Government of India, were those undertaken on behalf of war-associated injuries, primarily for ex-service men. Many of these services were later expanded to include civilians also. The Directorate General of Resettlement of the Ministry of Defense co-ordinates measures for the rehabilitation of veterans, both able-bodied and handicapped, in consultation with the Ministry of Welfare. The Directorate General of Employment and Training, Ministry of Labour, as well as other Central Ministries and state governments have taken action to rehabilitate persons with war-incurred injuries, particularly those sustained during the Chinese and Pakistan hostilities.<sup>6</sup>

The Queen Mary's Technical School, Kirkee, Pune, is exclusively for orthopaedically handicapped ex-servicemen. Attached to this is a sheltered workshop for those unable to follow open employment.<sup>7</sup> The school has trained many disabled as well as able-bodied ex-servicemen in trades such as tailoring, weaving, driving, automobile repair, dyeing, printing and electrical engineering. Courses range from 8 to 18 months in duration, and follow the syllabi established by the Department of Technical Education of Maharashtra State, which also conducts examinations and awards diplomas. All expenses are paid, including medical care, rail fare to and from their homes, and a small stipend for incidental expenses.<sup>8</sup>

The Artificial Limb Centre at Pune, established in 1944 for ex-service men, admits civilians too. It gives vocational training for occupations of farmers, school teachers, tailors, carpenters, milk vendors, and clerks.<sup>9</sup> Disabled exservice men would be admitted to the Industrial Training Institutes located in various states.

The Institute of Physical Medicine and Rehabilitation in Bombay provides some sheltered employment. In 1961 a sheltered workshop for adults was attached to it and in 1964 the Ministry of Health recognised its programme of training in physio-occupational therapy.

The sheltered workshop can accommodate nearly 180 persons, including some mentally retarded who stay a year or two for vocational training. The workshop is a training centre rather than a production centre.<sup>10</sup>

The first sheltered workshop for the orthopaedically handicapped in India was started in Bombay in 1957 by the Fellowship of the Physically Handicapped, using the Goodwill Industries of America as a model. Tools, machinery and other equipments were donated by the public. Starting with paper bags and gauze masks, the workshop moved on to include carpentry, printing and book-binding, box and file making, toy making, album making, umbrella making, box and cartoon making, handloom weaving, plastic welding, hard plastic moulding, painting of birds, assembly work with safety pins, making radio components, and making components for electronic computers.<sup>11</sup> Work is obtained either through direct orders or on sub-contract basis.

The workshop operated at Ahmedabad by the Cripples' Association, Apang Manav Mandal, Ahmedabad, the Association of the Physically Handicapped, Bangalore, Indian Association for the Physically Handicapped, Delhi and Welfare Association for the Physically Handicapped, Calcutta are similar Institutions.<sup>12</sup>

The Vocational Training Centre, Trivandrum, Kerala, was started in 1972 as part of the Comprehensive Rehabilitation Research and Training Project attached to the Medical College. It aimed at evolving techniques to improve the vocational potential of the physically handicapped to such a level that they could be helped in placement through governmental or other channels. In 1976, the Centre was taken over by the Social Welfare Department. Snehabhavan - Christ Craft Training Centre for the Handicapped, Irinjalakuda- offers training to orthopaedically handicapped boys in cutting and tailoring. Karthika Nair Memorial Rehabilitation Centre at Vallamkulam, near Thiruvalla provides vocational training to the orthopaedically handicapped and the deaf in book binding, type-writing, short hand, printing and composing, weaving and box and carton making. Association of the Physically Handicapped, Calicut, also offers vocational training to the orthopaedically handicapped and the hearing impaired.

Since relatively few orthopaedically handicapped youngsters are able to obtain anything beyond a basic education, institutions making provisions for them are faced with the problem of appropriate vocational training which will enable them to earn a living. There is increasing

evidence of the lack of suitable vocational training and placement services for the orthopaedically handicapped persons.

## **Visually Handicapped**

The initial efforts to provide vocational training and employment opportunities for the visually handicapped have often started with homes for the blind as extensions of existing schools for the blind. The first of such industrial sections was established at the School for the Blind in Palayamkottai, and another was started in 1917 at the Victoria Memorial School for the Blind in Bombay. Ten years later this school was renamed the N.S.D. Industrial Home for the Blind in memory of the late Narsingrao Shivaji Dharmeji who had bequeathed to the school a large endowment. There are several industrial homes where the blind engage in basket making, chair caning and weaving, receiving room and board and occasionally some pocket money as well on the basis of the work produced.<sup>13</sup>

The concept of placement of the visually handicapped in open employment was advanced by the formation of the Employment and Placement Committee of the National Association for the Blind in 1954.<sup>14</sup> Employment in the open labour market is available for the most part in large cities.<sup>15</sup> The jobs in which the blind are placed are usually routine, repetitive ones,<sup>16</sup> but they are paid at the same rate as the sighted.<sup>17</sup> The Workshop for the Blind at Worli, Bombay, has successfully placed a number of blind persons in open industry after training them for skilled and semi-skilled work in light engineering plants and factories.<sup>18</sup> The job performance of those placed so far on machine and assembly lines has been favourable, though the general public and most potential employers are not aware of this fact. Most employers have a strong prejudiced belief that the blind cannot work in factory situations. They need demonstrations of successful performance, and for this more facilities are needed for training, placement and help in job adjustment for the blind.<sup>19</sup>

Experience in the special employment exchanges for the physically handicapped indicates that the blind are the most difficult to place. The National Association for the Blind has been operating a separate placement service for the blind from 1955. It has sponsored eight more placement services in different States. Organizations like National Federation of the Blind, New Delhi, All India Confederation of the Blind, New Delhi, Blind Relief Association, New Delhi, Kerala

Federation of the Blind, Trivandrum, have appointed placement officers to promote employment of the blind.

Vocational training institutions for the visually handicapped have been established in different parts of the country. The most important centre for adults is the National Institute for the Visually Handicapped, at Dehra Dun. It was established in 1950. The Centre provides vocational training to blind men and women in the age group of 18-40 years. It provides training in new and emerging areas like electronics, stenography, dictaphone typing, electro-mech-assembly, telephone operation and light engineering as well as a few conventional trades like chair caning, weaving, chalk making, candle making etc. Trainees are also provided instructions in independent mobility and home management skills. The Regional Centre of N.I.V.H. at Madras also offers training in stenography and electronics.

Craft training is also given at the N.S.D. Industrial Home for the Blind, Worli, Bombay, the M.N.B. Industrial Home for the Blind, Jogeshwari, Bombay, the Industrial Home for Blind Women, Dadar, Bombay and at industrial homes in Pune, Nagpur, Ahmedabad, Delhi, and Palayamkottai. Rehabilitation units are attached to the N.S.D. and M.N.B. homes.

The Tata Agricultural and Rural Training Centre for the Blind established in the year 1960 under the auspices of the National Association for the Blind, with the generous assistance from Sri Dorab Tata Trust is the only full fledged rural training centre of its kind in the country, imparting training in agriculture, dairy, poultry and rural crafts to the rural blind. The Centre is located on a 240 acre farm on the seashore at Phansa in Gujarat. The farm consists of thousands of coconut and mango trees, rice fields and other crop areas, a dairy and poultry, workshop and a village where the blind and sighted live side by side. Admission is given to any rural blind between the ages of 16 and 35. Training, lodging and boarding are provided. The course is of two years' duration and the medium of instruction is Hindi. The course of instruction depends on an individual's needs in relation to eventual independent life in his native village. Training involves practical lessons in open fields in all seasons.

Financial assistance for placement in the family is given by the centre to all deserving blind persons, whose performance during training has been found satisfactory and whose job capability has been found to be of high order, provided they have been found capable of making

a success of any given occupation. For those who are orphans and destitutes, the Centre runs a rehabilitation farm where remunerative employment is offered.<sup>20</sup>

The rehabilitation training unit and workshop at Worli, Bombay, was established in 1963 by the National Association for the Blind. The workshop gives training in the manufacture of brushes, wooden articles, envelopes and simple garments with the purpose of preparing and enabling the blind to perform work in open industry without much difficulty. In addition to such work, there are contracts for assembly work and for the manufacture of component parts. Instruction in the operation of telephone switchboard is also given.<sup>21</sup>

The Industrial Home for the Blind Women in the premises of the Dadar School for the Blind, Bombay, was established by Blind Relief Association, Bombay, in 1957. It imparts vocational training in weaving, tailoring, canework and basketry. Mobility training is also provided. Blind Men's Association, Ahamedabad, offers training in physiotherapy, stenography, carpentry and computer programming. Blind Men's Association, Pune, has established a vocational training centre and offers training in various trades.

In March 1967 the Blind Relief Association inaugurated the Technical Training Centre for light engineering and Sub-contract Workshop for the Blind in New Delhi. The purpose of the Centre is to enlarge the scope of employment opportunities for the blind in industry. The workshop provides opportunities for research concerning the rehabilitation of the blind, and the Technical Training Centre assesses the aptitudes and abilities of the blind trainees, gives them training based on their aptitudes, and maintains a placement office to keep in touch with industries in order to secure jobs for the trained workers.

The Vocational Rehabilitation Centre, Ludhiana, has a vocational training unit. Training is provided in the following trades - knitting, home management cum domestic science for blindwomen, tailoring, candle and niwar making, village and cottage industries, handloom weaving and carpet making, music both vocal and instrumental, carpentry, rope making and furniture unit, book binding, manufacture of envelopes, file making and preparation of exercise note books, plastic industry, card board box making, light engineering, poultry management, dairy farming, vegetable plantation and food grooming.

Blind Boys Academy, Ramakrishna Mission Ashram, Narendrapur also has a technical training section and an agricultural training programme.

In 1967 a light engineering workshop was established at the Industrial Estate, Guindy, in Madras. During the first half of the course the trainees are taught filing, chipping, shaping, drilling and turning. During the second half they learn to use power tools such as lathes and drills, with the aim of achieving the same skill and precision as those of a sighted worker. The project includes follow-up service for trainees placed in industry by means of two placement officers who study their problems, check on their progress, and investigate possible placement opportunities.

Bishop Diehl Rehabilitation Home for the Blind, Tiruchirappalli, Organization for Rehabilitation of the Blind in Trichy (Orbit), Tiruchirappalli, and Rehabilitation Centre for the Blind Women, Tiruchirappalli, are a few other important training centres for the blind in Tamilnadu. Shree Ramana Maharishi Academy for the Blind, Bangalore, N.A.B. Karnataka Branch and Karnataka Welfare Association, Bangalore, have established vocational training centres for the blind.

In Kerala the lead in the vocational training and rehabilitation of the blind was taken up by the Kerala Federation of the Blind, an organization of blind persons themselves. In 1975, the Federation started a placement service for the blind with financial support from the Royal Commonwealth Society for the Blind. A placement officer visits various industrial and commercial institutions in the state, identifying jobs suitable for the blind and persuades the employers to absorb qualified blind persons in those jobs. The response from the employers has not been very encouraging.

The first rehabilitation centre for the blind in the state was started by the Federation in August 1977 at Calicut. It provides vocational training in seven different trades—handloom weaving, mat weaving, candle making, chalk making, plastic moulding, umbrella assembling and cane and plastic works. Music is taught to the talented. Braille and general education classes are also part of the programme. Trainees with high school education are taught ordinary typewriting. The duration of the course varies from six months to two years depending on the nature of the trade and ability of the trainee. Mobility and orientation

training is given importance. The Centre receives financial assistance from the Govt. of India, Ministry of Welfare.

A similar centre for blind women was opened by K. F. B. in October 1979 in Koduvely, Idukki District, with financial assistance from Royal Commonwealth Society for the Blind. In 1987 it was transferred to Pothanicad in Ernakulam District. Admission is open to blind women between 18 and 40 years of age. They are provided vocational training in such trades as tailoring, candle making, umbrella assembling and cane and plastic work. Home management, music, braille, general education, mobility and orientation classes are also included in the programme. The Centre receives financial assistance from Govt. of India, Ministry of Welfare.

The Light Engineering Training cum Production Centre at Angamaly, near Cochin run by the K. F. B. is the only institution of its kind in Kerala. It was started in September 1977 in partnership with Christoffel Blindenmission, West Germany, which provided necessary funds for the machinery, salary to the staff, stipend to the trainees and other recurring expenses. Necessary land was purchased from the State Department of Industries. Govt. of India, Department of Social Welfare, provided necessary funds for the building under the grant-in-aid scheme. The Centre offers training in light engineering jobs such as turning, fitting, plumbing, sheet metal work and machine operations as well as carpentry. The duration of the course is 2 years. National Institute for the Visually Handicapped, Dehra Dun, conducts the final examination for light engineering trainees in 'Basic General Mechanic' and awards certificates.

K. F. B. also provides training in telephone operation, dictaphone typing and braille shorthand at its headquarters in Trivandrum.

Vocational Training Centre for Blind Women attached to Medical Mission Hospital, Kolencherry and Mar Gregorios Rehabilitation Centre, Vattiyookave, Trivandrum, both supported by Christoffel Blindenmission, also provide vocational training to visually handicapped persons.

## **Hearing Handicapped**

The vocational needs of the deaf are being met through increasing opportunities in vocational training in the institutions for this group. Both the deaf and the blind have traditionally been trained in

crafts whose products had little or no market value since the purpose was to keep them occupied rather than to make them economically independent. There has recently been a shift of emphasis to training them for regular employment.

The Lady Noyce School for the Deaf and Dumb in New Delhi has a small section for vocational training for children and adolescents.<sup>22</sup>

But there is still too little opportunity for the adult deaf to obtain technical and vocational training. The School of Photography run by the All India Federation of the Deaf, New Delhi and the Central Government's Training Centre for the Adult Deaf, Hyderabad, represent efforts to provide opportunities in open employment. The Photography Institute established in 1960, offers training to deaf students in still and movie photography and dark room practice. A Printing Press Institute for the Deaf was also founded by the All India Federation of the Deaf in 1962. It is a training cum production centre<sup>23</sup>.

The Training Centre for the Adult Deaf at Hyderabad was established by the Govt. of India during the year 1962-'63 to provide training in crafts and engineering and industrial occupations for the adult deaf. The requirements for admission are: no major handicap other than deafness and age between 16 and 25 years, possibly up to 30 years in unusual cases. Those who lost their hearing lately should have lost it for more than three years prior to the date of admission, should have been attending an educational institution or been employed and should have a certificate showing the nature of educational achievement or employment. Candidates who lost their hearing in childhood or many years ago should have attended an institution for the deaf for at least five years, and have evidence of educational achievement. Priority is given to those, who became deaf more recently, to persons with deafness connected with military service, to civilian government personnel, and to those recommended by organisations planning to employ the trainee after his period of training is completed.

Training is offered in the following trades: sheet metal work, wiremanship, fitting, welding, painting, turning, machinist, instrument mechanics and manufacture of radio components.

The Vocational Training Centre for the Deaf at Allahabad, Uttar Pradesh, was established in 1966. Open to young men and women of 14 to 21 years of age from the Hindi-speaking area, it helps to fill a

gap in services for this particular adolescent age group. Trainees in this centre may choose among the trades of agriculture, carpentry, composing and printing press work, light machine repairs, smithy and metal work, leather work, tailoring and home economics, dyeing and printing.<sup>24</sup>

In recent years several institutions have been established to provide vocational training to the hearing handicapped. A few schools for the deaf and dumb have been up-graded to technical high schools for the hearing impaired.

National Association for Equal Opportunities for the Handicapped, Bombay has set up a National Centre for the Handicapped which offers vocational training to all categories of disabled persons in a variety of jobs.

In general, vocational rehabilitation of the disabled in India has not yet been given due priority. The major problems encountered in this area are (1) the limited number of civilian jobs available; (2) the need to obtain work as near to their home base as possible, in view of their disabilities; (3) the individual's unwillingness to accept a particular job; (4) employer reluctance in hiring them; (5) the limited number of jobs suitable in view of their lack of educational or training qualifications for particular kinds of work; and (6) lack of vocational training facilities suited to them, especially when their previous education has been limited, or when they have multiple handicaps.<sup>25</sup>

## **Role of Government**

Government of India and State Governments have taken a few steps to promote vocational training and employment of persons with disabilities. They include relaxation in the upper age limit of candidates for entry in civil service, reservation of seats in Industrial Training Institutes and other technical training centres, providing scholarship / stipend for training in recognized institutions and reservation of jobs in C & D posts.

### *Special Employment Exchanges*

The various employment exchanges under the National Employment Service are generally responsible for the placement of the physically handicapped. It was, however only after the setting up of the special employment exchanges for the physically handicapped

that it has been possible to provide for the disabled a proper guidance and placement service which takes into account their physical and mental capacities as well as disabilities. As mentioned earlier the first special employment exchange for the physically handicapped was set up in Bombay in 1959. Now there are 22 special employment exchanges. They are at Hyderabad (Andhra Pradesh), New Delhi, Bangalore (Karnataka), Bombay (Maharashtra), Ludhiana (Punjab), Madras (Tamil Nadu), Calcutta (West Bengal), Kanpur (Uttar Pradesh), Trivandrum (Kerala), Jabalpur (Madhya Pradesh), Patna (Bihar), Chandigarh, Simla (Himachal Pradesh), Jaipur (Rajasthan), Bhubaneshwar (Orissa), Guwahati (Assam), Agartala (Tripura), Baroda, Surat, Rajkot, Ahamedabad (Gujarat), and Imphal (Manipur).

The special employment exchanges follow the selective placement approach. Some of the important principles kept in mind are <sup>26</sup>.

- (a) Job referral on the basis of ability
- (b) Individualised approach.
- (c) Positive attitude towards disabled persons
- (d) Placement at the highest level of skill.

The main objectives of the special employment exhcngages are to:-

- (1) Place the handicapped persons in suitable jobs.
- (2) Give vocational guidance where necessary
- (3) Collect information about the size of the problem and the special needs of the handicapped.
- (4) Identify occupations suitable for the handicapped.
- (5) Try to persuade employers to engage handicapped persons.
- (6) Establish liaison and co-ordination with other agencies engaged in helping the handicapped, training institutions and voluntary organisations; and
- (7) Follow up each physically handicapped applicant placed in employment to ensure that he is settling down satisfactorily.<sup>27</sup>

Full particulars of the physically handicapped persons, including his personal and family data are obtained at the time of registration and he is registered in a trade most suitable for him keeping in view his qualifications, disability, his residual capacities and employment opportunities.

The employment officer (physically handicapped) escorts the physically handicapped persons while sending them for interview to the employers. The employment officer helps the employers as well as the physically handicapped persons in making personal and plant adjustment necessary so as to achieve full rehabilitation and maximum output.

The medical examination of the physically handicapped person after selection for a particular job is arranged by the special employment exchange through the medical boards constituted for the purpose<sup>28</sup>.

For the convenience of physically handicapped persons staying in places other than the towns in which special employment exchanges are located, facilities for registration and replacement are also available at normal employment exchanges. 55 special cells in the normal employment exchanges are also functioning.

### *Reservation of Jobs*

Government of India- vide O. M. No. 39016/6/77-Estt. (C) dated 4-11-1977 of Ministry of Personnel, P. G. and Pension has reserved 3% of vacancies in Govt. of India Departments and Public Sector Undertakings for the physically handicapped, 1% each for the blind deaf and orthopaedically handicapped.

In 1987, an inter-departmental committee under the chairmanship of the Joint Secretary in the Ministry of Welfare identified 1100 types of jobs as suitable for the disabled. In 1986 a Committee under the Chairmanship of the Joint Secretary, Ministry of Welfare, appointed for identification of jobs in Group A & B posts for the physically handicapped, prepared a comprehensive list of 416 categories in Group A & B posts in government offices and public sector undertakings, with their job descriptions, the physical requirement of each group of job and matched them with various categories of disabilities. The question of reservation of jobs in A & B posts is still under the consideration of the Government. The Supreme Court of India has decided that blind persons should be allowed to appear for various competitive

examinations including the examinations for entry into the Indian Administrative Services. Enactment of legislation for reservation of jobs for the disabled is under the active consideration of the Government of India.

Since 1981, the International Year of Disabled Persons, with the active involvement and unitive action of organizations of and for the disabled in the country, there have been concerted efforts and sincere attempts on the part of all to promote meaningful vocational training and remunerative employment for the disabled so as to integrate them in the mainstream of society as independent, self-reliant and contributive citizens. It is expected that positive changes and rapid progress will ensue in the field.

### Footnotes

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## CHAPTER XXII

### SPECIAL SERVICES

After centuries of patronage and charity, resulting in age-old prejudices and totally unjustified isolation and exclusion, the physically handicapped of today firmly believe that equal opportunities, equal protection, equal rights and free participation in the socio-economic affairs of a society are vitally important for them to become full fledged members of that society. In order to attain these objectives, they need an understanding treatment, both by the government and society and the provision of facilities and concessions. These concessions are required not because they are handicapped and thereby helpless, but because the disabled individuals have been the victims of age-old prejudices, misconceptions and have been thus absolutely denied of the benefits of human rights and liberty. The demand for a specialized or preferential treatment arises from our intense desire to restore to the handicapped the status of equality that is their due but which was hitherto denied to them. These are also required for promoting closer acceptance and integration of the handicapped into the mainstream of community life.

Some well-meaning persons in the field of welfare of the handicapped think that the principle of special treatment and privileges is quite contrary to the doctrine of normality, equality and integration. But, in fact, preferential treatment is sought to fight out the handicaps of discrimination, segregation, debasing charity and outright exclusion from the mainstream of community life and to secure for the disabled the blessings of liberty enjoyed by every citizen. All handicapped persons should be given every opportunity to prove their potential,

their competence, and reliability which would pave the way of ridding the public minds of superstitions and stereotypes about them.

India is one of the very few countries of the world, which despite their limited resources and numerous socio-economic problems, are making appreciable efforts to give the maximum facilities to their handicapped population. The very preamble of the Indian Constitution requires the Sovereign Democratic Republic to secure for all its citizens Justice – Social, Economic and Political; Equality of Status and Opportunity and assures the dignity of the Individual. The disabled are not excluded from these noble goals. Article 41 of the Constitution emphasises that the State shall within the limits of its economic capacity and development, make effective provision for securing the right to work, to education and to public assistance in cases of unemployment, old age, sickness and disablement, and in other cases of undeserved want. Further, the Indian Constitution in its Directive Principles of State Policy has enjoined upon the constituent States to legislate for the promotion of the welfare of the “weaker sections of society”.

Government of India and various state governments have provided to the handicapped a number of special facilities and concessions which are summarised as follows:

## **Scholarships**

The programme of scholarships to handicapped students was started in 1955 by the Ministry of Education and Social Welfare, Government of India, to help them secure education and training as a step towards their rehabilitation.<sup>1</sup> The scheme provides scholarships for general education from Class IX onwards and for technical training at certificate, diploma and degree levels as well as for professional education. The scheme also covers handicapped persons placed as inplant trainees in approved industrial or commercial establishments, students in correspondence courses and students studying music in institutions affiliated to the Gandhara Maha Vidyalyaya Mandal, Miraj, Bombay and the Prayag Sangeet Samithi, Allahabad.

The amount of scholarships varies depending on the nature of the course and whether the student is staying in a hostel or not. A candidate applying for scholarship under this scheme should be in the age group of 14 to 40 years as on 1st June of the year, should have secured at least 40% marks in the previous annual examination and

the income of parents should be less than Rs. 2,000/- per month. This scheme is operated through the state social welfare departments. In addition to the scholarship, the orthopaedically handicapped students will be eligible for allowances for maintenance of prosthetic / orthotic aids and transport. In the case of severely disabled persons who require special arrangements for transport an additional monthly allowance may be sanctioned. In the case of visually handicapped reader's allowance shall be paid.

Most of the state governments provide scholarships to handicapped pupils up to VIIIth standard. The state governments also operate separate schemes for providing educational facilities to the handicapped pupils in residential special schools as well as in integrated schools.

Junior and senior fellowships are awarded by the University Grants Commission to those handicapped who are working for Ph.D. In addition to the monthly payment, an annual contingent grant is paid to the fellow. In the case of blind scholars, U.G.C. provides special grant to cover the appointment of a reader. Most of the Universities have exempted blind candidates from payment of examination fees. They are given free service of scribes to write their examinations.

## **Scheme of Assistance to Voluntary Organizations**

### *For Disabled Persons*

Under the Scheme of Assistance to Organisations for the Disabled, financial assistance is given to such voluntary organisations who work for providing education, training and rehabilitation facilities to the disabled persons. Under the scheme assistance is given for the following services:-

- (i) Detection, intervention of primary nature, prevention of disability;
- (ii) Education and/or training;
- (iii) Rehabilitation—physical, psychological, social and economic.

Assistance is given both for recurring and non-recurring items like construction of building, purchase of equipments, publication of journals, salaries of the staff, maintenance charges of disabled in the hostel, contingencies etc. Assistance is given to the extent of 90% of the total project. In case of construction of building, the grant-in-aid

does not exceed Rs. 7.5 lakhs and the remaining expenditure is to be borne by the organisation itself.<sup>2</sup>

### *For Persons with Cerebral Palsy and Mental Retardation*

This scheme aims at rendering selective recurring and non-recurring support to voluntary organisations for developing organisational and infrastructural facilities for manpower training such as professionals, hostels and other assistance required for imparting training to various categories of workers / trainers including vocational teachers, rehabilitation workers, attenders, wardens etc. in the field of cerebral palsy and mental retardation.<sup>3</sup>

### *For Leprosy Cured Persons*

This scheme envisages providing financial assistance to voluntary organisations working for leprosy cured persons. Assistance is given to such voluntary organisations who develop programmes for awareness generation, early intervention, educational and vocational training, economic rehabilitation and social integration of the leprosy cured persons. Assistance is given upto the extent of 90%.<sup>4</sup>

### **Assistance to Disabled Persons for Aids/Appliances**

This scheme is meant to provide aids and appliances to disabled persons, free of cost to persons having income of less than Rs.1,200/- per month and at 50% of the cost to persons having income between Rs.1,200/- to Rs.2,500/-. Under the scheme, aids and appliances costing upto Rs.3,600/- such as crutches, calipers, artificial limbs, wheel chairs, braille equipments, hearing aids, etc. are made available to about one lakh persons every year.<sup>5</sup>

### **Reservation of Jobs**

As mentioned in the previous chapter, Government of India have reserved 3% of vacancies against identified posts in Group 'C' and Group 'D' for the physically handicapped. A committee set up by the ministry of welfare made an in-depth study of the various jobs done in government offices as well as public sector undertakings and identified 1100 posts out of 3000 posts listed in the National Classification of Occupations as suitable for the handicapped persons.

Physically handicapped persons who are otherwise qualified to hold clerical posts and who are certified as being unable to type by the Medical Board, or a civil surgeon where there is no such board, have been exempted from typing qualifications.

The physically handicapped persons have been granted an upper age limit of 10 years for appointment to the clerical and subordinate cadre posts.<sup>6</sup>

### **Conveyance Allowance**

The Central Government employees who are on regular establishment (including workcharged staff) and who are blind or orthopaedically handicapped (with disability of upper or lower extremities) are to be granted conveyance allowance at 5% of basic pay, subject to a maximum of Rs.100/- per month under the following conditions:

1. An orthopaedically handicapped employee will be eligible for conveyance allowance only if he/she has a minimum 40% permanent/partial disability of either upper or lower limbs or 50% permanent/partial disability of both upper and lower limbs together.

2. Conveyance allowance will be admissible to the orthopaedically handicapped employees on the recommendation of the head of the orthopaedic department of a government civil hospital.

3. In the case of a blind employee the allowance will be admissible on the recommendation of the head of the ophthalmological department of a government hospital.

4. The allowance will not be admissible during leave (except casual leave), joining time or suspension.<sup>7</sup>

### **National Awards**

Every year on the occasion of the World Day of the Disabled Celebrations, the Ministry of Welfare presents separate awards to outstanding employers of the handicapped and the most efficient handicapped employees including self employed handicapped persons from the following sectors:

1. The state, including Government of India, state government, statutory bodies, corporations, local bodies etc.

2. Public sector undertakings of the central and state governments.

3. Private sector including self employed handicapped persons. Five awards are intended for employers in each sector, one each being reserved for employers of the blind, the deaf, the orthopaedically handicapped and leprosy cured persons.

There are 30 awards for handicapped employees. In the government and public sector two awards each are reserved for the blind, the deaf, the orthopaedically handicapped and leprosy cured employees. In the private sector two awards each are given to the blind, the deaf, the orthopaedically handicapped, the mentally handicapped and leprosy cured employees/self employed persons. Two awards are intended for outstanding placement officers of the handicapped.

The Ministry of Welfare has also launched the scheme of awards for technological inventions in the field of disability. Under this scheme awards are given annually for the work in India in three types of disability, namely, the orthopaedic handicap, the visual handicap and the speech and hearing handicap for a technological invention of an aid or appliance which will ameliorate the handicap and substantially help persons suffering from these handicaps.<sup>8</sup>

The Ministry of Welfare also presents national awards to outstanding institutions/organizations of and for the disabled as well as to most outstanding voluntary workers in the field.

Several state governments also present similar awards.

## **Travel**

### *By Rail*

The Ministry of Railways allows the disabled persons / patients to travel at concessional fare on the Indian Railways. 75% concession in the basic fares in first and second classes will be granted to the blind, orthopaedically handicapped, non-infectious leprosy patients, deaf and dumb persons (both afflictions together in the same person) travelling alone. The same rate of concession will be granted to their escorts also.

### *By Air*

Indian Airlines Corporation allows 50% concessional fare to blind persons on single journey or single fare for round trip journeys on all domestic flights. No concessions in fares are given to orthopaedically handicapped persons. However, they are allowed to carry a pair of crutches or braces or any other prosthetic devices free of charges, provided the passenger is dependent on them.<sup>9</sup>

### *By Road*

Road Transport Corporations in several states give travel concessions to the blind and other disabled persons at different rates. Kerala State Road Transport Corporation gives 100% concession to the blind and 70% concession to the orthopaedically handicapped. In Kerala 70% concession to the blind and the disabled passengers within a limit of 40 kms. is given by private buses.

## **Communications**

### *Postage*

Payment of postage, both inland and foreign, for transmission by post of 'Blind Literature' packets is exempted if sent by surface route.<sup>10</sup>

### *Telephone*

Blind persons are provided telephone connection under Non-OYT Special category. They are also given 50% rebate of the normal rental.

## **Customs**

### *Individuals*

The Central Government exempts goods specified in the list below, when imported into India by a handicapped or disabled person for his personal use, from the whole of the duty of customs and the additional duty subject to the condition that the importer produces to the Assistant Collector of Customs, at the time of importation, a certificate from the civil surgeon of the district, Medical Officer or the

Administrative Medical Officer or the Director of Health Services of the concerned state or a specialist in the concerned speciality attached to a government hospital or a recognised medical college to the effect that the importer suffers from the particular handicap or disability and that the imported goods in respect of which the exemption is claimed are essential to overcome the said handicap or disability.

1. Braille writers and braille writing equipments.
2. Hand writing equipment, braille frames, slates, writing guides, styli, braille erasers, script writing guides.
3. Canes, electronic aids like the sonic guide.
4. Optical, environmental sensors.
5. Arithmetic aids like the Taylor Frame (arithmetic and algebra types), Cubarythm, speaking or braille calculator.
6. Geometrical aids like combined graph and mathematical demonstration board, braille protractors, scales, compasses and spar wheels.
7. Electronic measuring equipment, such as calipers, micrometers, comparators, guages, blocks levels, rules, rulers and yard sticks.
8. Drafting drawing aids, tactile displays.
9. Specially adapted clocks and watches.
10. Orthopaedic appliances falling under Heading 90.21 of the First Schedule to the Tariff Act.
11. Wheel chairs falling under Heading No. 87.13 of the said First Schedule.
12. Artificial Electronic Larynx and spares thereof.

### *Institutions*

As per notifications G.S.R. No.550 (E) dated 19-11-1978 issued by the Department of Revenue, Ministry of Finance, Government of India, the institutions (including registered co-operative societies) for the blind and the deaf are permitted to import equipment and apparatus

as per list below, being bonafide gifts to, or purchased out of donations received in foreign exchange by such institutions:

They are exempted from:-

- (a) All tangible appliances for the blind.
  - (b) Hearing aids and other audio-visual aids for the education of the deaf.
  - (c) Vocational aids for the blind and the deaf.
  - (d) Articles including instruments, apparatus, appliances, machinery and spares or component parts or accessories thereof required by such institution for the purpose of giving training or imparting instructions to the blind and the deaf.<sup>11</sup>
1. The whole of the duty of customs leviable thereon under the First Schedule to the Customs Tariff Act 1975 (5) of 1975,
  2. The whole of the auxiliary duty of customs leviable under subsection (1) of section 35 of the Finance Act, and
  3. The whole of the additional duty leviable thereon under section 3 of the said Customs Tariff Act as the time of importation of such goods into India.

## **Income Tax**

As per Finance Act 1987 (refer to clause 80 U of the Income Tax Act 1961 as amended by Section 22 of the Taxation Laws Amended Act 1970), the amount of deduction from total income of the resident individual who suffers from blindness or other permanent physical disability which has the effect of reducing substantially his capacity of engaging in a gainful employment or occupation has been increased to Rs 15,000/- from 1st April 1988.<sup>12</sup>

## **Subsidy for Petrol and Diesel**

Physically handicapped owners of motorised vehicles granted exemption from the payment of road tax by the state government / Union Territory Administration are eligible to claim refund up to 50% of the expenditure incurred by them on purchase of petrol / diesel from

recognised dealers subject to a ceiling as indicated below:

Vehicle up to 2 HP	-	15 litres per month
Vehicle above 2 HP	-	25 litres per month

Only those physically handicapped persons having an income up to Rs. 2,500/- per month from all sources would be eligible for the grant of subsidy on purchase of petrol / diesel. The scheme is operative through District Social Welfare Officer or Tehseeldar/ equivalent officer.<sup>13</sup>

### **Award of Dealerships by Oil Companies**

Ministry of Petroleum and Natural Gas has reserved 7½% of all types of dealership agencies of the public sector oil companies, for orthopaedically handicapped and blind persons. However, the blind persons are not eligible for LPG distributorship. Similarly, the Ministry has also reserved 7½% of such dealerships/agencies for defence personnel who are permanently and severely disabled either in war or on military duty during peace time.

The candidate's income should not be more than Rs.50,000/- per annum. The income for this purpose would include the income of the candidate, his/her spouse and dependent children. At the time of application called for, the minimum age of the candidate should be 21 years and maximum 50 years, as on date of application.<sup>14</sup>

### **Allotment of Public Telephone Booths**

The Telecommunication Department gives priority to physically handicapped persons in the allotment of public telephone booths.

### **Economic Assistance**

Public Sector Banks extend the benefit of differential rate of interest scheme (loan at 4% interest) to physically handicapped persons by providing loans for pursuing gainful occupation. Institutions for the physically handicapped persons pursuing a gainful occupation are also eligible to draw benefit under this scheme. The above institutions are exempted from income criteria. However, these institutions could utilise the funds only for productive purposes and not for meeting their normal administrative and establishment expenses.<sup>15</sup>

Handicapped persons are given priority and preference while sanctioning loans and subsidies under the Integrated Rural Development Programme implemented by the Rural Development Department.

## **National Institutes**

In consonance with the policy of providing a complete package of welfare services to the physically and mentally handicapped individuals and groups and in order to effectively deal with the multidimensional problems of the handicapped population, the Ministry of Welfare has established the following National Institutes.

- (i) National Institute for the Visually Handicapped, Dehradun.
- (ii) National Institute for the Orthopaedically Handicapped, Calcutta.
- (iii) Ali Yavar Jung National Institute for the Hearing Handicapped, Bombay.
- (iv) National Institute for the Mentally Handicapped, Secunderabad.

These Institutes are apex level organisations in the field of education, training, vocational guidance, counselling, research, rehabilitation and development of suitable service modules for the handicapped. The Institutes also serve as premier documentation and information centres in their respective areas of disability. Development and standardisation of aids and preparation of community awareness materials, both for the electronic and the print media, with the target audience, the parents, the community and professionals working in the field etc. are also their responsibility.

In addition to the four National Institutes, the following two organizations have been working in the field to provide training facilities and services for rehabilitation of persons with locomotor disabilities:

- (a) Institute for the Physically Handicapped (IPH), New Delhi, and
- (b) National Institute of Rehabilitation Training and Research (NIRTAR), Cuttack.<sup>16</sup>

## **Artificial Limbs Manufacturing Corporation Limited**

The Artificial Limbs Manufacturing Corporation Limited, Kanpur, was established in 1972 as a licensed company under Section 25 of the Companies Act 1956. The main objective of the Company is to manufacture and provide quality aids and appliances to the handicapped population. The Corporation continues to fulfil the social obligation of providing quality aids and appliances to the needy disabled.<sup>17</sup>

### **District Rehabilitation Centres**

To fulfil the need for comprehensive rehabilitation services for the rural areas where majority of disabled population live, the Ministry of Welfare launched the District Rehabilitation Centre (DRC) scheme 1983 and since 11 such centres have been established.

They are at, Bhiwani (Haryana), Bilaspur (M.P), Chengalpattu (Tamil Nadu), Sitapur (Uttar Pradesh), Kharakpur (West Bengal), Kota (Rajasthan), Mysore (Kamataka), Sultanpur (Uttar Pradesh), Vijayawada (Andhra Pradesh), Virar (Maharashtra), and Bhuvaneshwar (Orissa).

To support, supervise and coordinate the activities of the DRCs, the following infrastructure has been set up:-

- (i) Four Regional Rehabilitation Training Centres (RRTCs) at Cuttack, Lucknow, Madras and Bombay;
- (ii) National Information Centre on Disability and Rehabilitation (NICDR);
- (iii) Rehabilitation Technology Centre (RTC); and
- (iv) A Central Cell called Central Administrative and Coordination Unit (CACU).<sup>18</sup>

### **Science and Technology Project in Mission Mode**

The Ministry of Welfare launched this project in 1988 with the objective to co-ordinate, fund and direct application of technology in the development and utilisation of suitable and cost-effective aids and appliances; its methods of education and skill development lead to enhancement of opportunities for easier living, mobility, communications, recreation, employment and integration of the disabled in society. 37 projects are being undertaken in reputed research organisations throughout the country.<sup>19</sup>

## Rehabilitation Council Of India

The Government has set up the Rehabilitation Council of India with a view to enforce uniform standards in training of professionals in the field of rehabilitation for the handicapped, and for the maintenance of Central Rehabilitation Register and other connected matters. The Council was constituted through an executive order in 1986 and it was given statutory status in 1992.<sup>20</sup>

## National Handicapped Welfare Fund

The Trust, namely, National Handicapped Welfare Fund was constituted in the year 1983 with the objective of funding certain welfare programmes for the handicapped which are not presently covered under the Central Government schemes of assistance. In 1989 the implementation committee of Pandit Jawaharlal Nehru Centenary Celebrations donated Rs. 2.50 crores. The money of the Fund is invested in interest earning schemes of Nationalised Banks. Norms for operating this Fund are being formulated.<sup>21</sup>

The foregoing paragraphs reveal that the infrastructure as well as the quality of services available to persons with disabilities in India are extensive and better in quality compared to those existing in most of the developing countries of the world.

### Footnotes

1. *Concessions and Programmes for the Physically Handicapped*, Government of India, Ministry of Welfare, New Delhi, pp.2-5.
2. E.O.Ireland, "Notes on Handicapped Welfare" typed script.
3. Ibid.
4. Ibid.
5. Ibid.
6. *Programmes and Concessions for the Disabled*, compiled by the All India Confederation of the Blind, New Delhi, printed and published by the National Institute for the Visually Handicapped, Dehra Dun., p. 44
7. Ibid. p. 40
8. Ibid. pp. 56-58.
9. Ibid. pp. 1 and 30.
10. Ibid. p. 31.

11. Ibid. pp. 33-34.
12. Ibid. p. 42.
13. Ibid. p. 55.
14. Ibid. p. 43.
15. Ibid. p. 48.
16. E.O.Ireland, op.cit. pp. 10-11.
17. Ibid. p. 11.
18. Ibid. pp. 12-13.
19. Ibid. pp. 13-14.
20. Ibid. p. 14.
21. Ibid. p. 18.

## CHAPTER XXIII

### GUIDELINES FOR ACTION

In the preceding chapters we reviewed some of the existing facilities for the prevention, cure and physical restoration of disabilities as well as the education, vocational training and employment of the disabled in India. In this Chapter we propose a few guidelines for action which may be of help in planning, implementing and evaluating the various services for the handicapped. These suggestions are based on the views of experts in the concerned fields, and drawn from the conclusions and recommendations of several national and international conferences, commission reports, seminars and workshops.

#### **Statistics on Disabilities**

A basic pre-requisite for planning, developing and implementing any programme concerning any section of a population is the availability of adequate and reliable data about their number and characteristics. It is unfortunate that the census of India does not provide any data indicating the magnitude of the problem of disability in the country. Therefore separate figures concerning the different categories of the handicapped need to be collected as part of the national census conducted every 10 years.

Registration of handicapped persons by appropriate local bodies (Panchayats, Municipalities, City Corporations) should be made compulsory. For its effective implementation registration should be made a pre-requisite for granting any concession to handicapped persons.

## **Prevention**

Prevention is better than cure. Therefore no effort should be spared to combat the causes of disabilities. In the first place surveys of common causes leading to different types of disabilities need to be conducted including the data required for tackling the problems of the handicapped. Based on these data health education programmes could be launched on a mass scale; every household must be brought under the programme.

Arrangements may be made for providing genetic counselling to couples in medical colleges and district hospitals with a view to preventing congenital deformities in children. More facilities for pre-natal care and check up may be provided in primary health centres and taluk hospitals. Mother's counselling centres may be started in the primary health centres and the need for pre-natal care impressed upon the expectant mothers.

Locating and identifying all the needy pre-school children could be covered by feeding centres which could also take care of their nutrition and vitamin requirements.

Regular and compulsory medical examination of all children attending pre-schools, balawadis, anganawadis, primary schools and high schools should be conducted. This could be a joint programme of the education and health departments, and local bodies.

Provision must be made to ensure that remedial treatment as prescribed is given to the children concerned at school. The school authorities must keep medical records of all children from the date of admission to the date of leaving the school.

In order to facilitate prevention of the conditions producing orthopaedic handicaps triple vaccination programme should be enforced in the urban and rural areas. Mass immunisation against poliomyelitis should be specially emphasized.

More and more eye camps especially in rural areas must be organized. Such camps and mass meetings should be utilised for spreading mass education in rural areas on the preventive aspects of blindness. Every school must maintain the minimum equipment for initial screening so that children suffering from visual impairment could be referred to qualified ophthalmologists at an early stage. The teacher

training programme should include in its course content, some lectures on the early detection of eye conditions likely to result in visual impairment or blindness. Provision must be made for the distribution of adequate doses of vitamin A to high risk children. Nutrition education should be imparted through the Integrated Child Development Services and other similar programmes with a view to educating mothers in the right and cheap ways of giving nutritive food to children. This will be an effective means of preventing visual impairment/blindness.

All possible steps should be taken for the early detection of deafness with the help of parents, otologists, audiologists, paediatricians and family physicians. Congenital deafness due to exogenous causes can be eliminated by the limited use of ototoxic drugs and proper pre-natal diagnosis and appropriate surgical intervention. Schools for the deaf should be fully equipped to diagnose, treat and train the deaf child and the government should fully finance them. The state governments and the local authorities should include in the 'school health service' the testing of the children's hearing ability and assist the children in securing treatment and hearing aids, if needed. Training units in callisthenics may be established to strengthen the bodies of the handicapped, where needed, with the use of artificial aids and appliances.

Effective safe guards should be introduced and enforced to avoid accidents, especially in industry and traffic.

A chapter on disability should be added in secondary school text books.

Advisory and implementation committees may be appointed at the national, state and district levels to promote the prevention programmes for different kinds of handicaps.

## **Medical Treatment and Rehabilitation**

Departments of Physical Medicine and Rehabilitation, E.N.T and Ophthalmology, physio-occupational therapy units, limp fitting and repairing units and speech and hearing therapy clinics should be started in all the medical colleges and district hospitals.

Low vision clinics and eye banks may also be established at all ophthalmic units of medical colleges and district hospitals.

Mobile units and primary health centres should be required to reach out to the rural population to test the eyes, ears, nose and throat of children below the age of six in order to facilitate early detection of disabilities and offer medical treatment.

Prosthetic and orthotic appliances, and hearing aids should be made available to all needy persons at low price and if possible, free of charge.

Subjects like prevention and early detection of disability and rehabilitation of the handicapped may be introduced in the curriculum of all medical colleges at the undergraduate and post graduate levels and in the teaching programmes of nurses and other health and para-medical workers.

There must be effective dissemination of information regarding the various courses conducted in prosthetic and orthotic engineering in different parts of the country.

## **Education**

Pre-schools and primary education may be made compulsory up to the age of 16 years for the handicapped and implemented as a time bound programme.

The scheme of home teaching for severely handicapped and infirm children may be introduced.

Hospital schools may be started in the medical colleges for educating the physically handicapped children undergoing long treatment in the physical medicine and rehabilitation centres.

Integrated educational facilities and educational aids and materials should be provided on a district basis to the different categories of the handicapped. They should also be provided with remedial and corrective education.

Fellowships and scholarships may be instituted for workers undergoing training in remedial and corrective education of the handicapped.

Special residential schools for severely orthopaedically handicapped children may be started.

The combined schools for the blind and the deaf may be bifurcated. One special school each for the blind, the deaf, and the multiply handicapped may be started in every district. The existing schools for the blind and the deaf should be provided with adequate space for class-rooms, hostels and other facilities together with essential equipments and educational appliances.

Syllabus of the special schools may be revised suitably giving due importance to physical education, sports and games, crafts, natural arts and mobility and orientation training for the blind.

Integrated scheme of education of the handicapped children may be introduced in more and more schools in all states and union territories.

A pool of resource teachers in different subjects may be formed in each district who can visit the integrated schools and assist the students in their studies. Counsellors may be appointed for promoting the education of the blind and deaf children.

Pre-primary education may be introduced in the schools for the blind, and the deaf and voluntary efforts in this field may be encouraged.

Facilities may be provided to partially sighted children for integrated education from the primary level in the normal schools. The integrated system of education for the deaf at high school level may be introduced in more schools.

In the method of teaching the acoustically and orally handicapped the total approach should be adopted.

A well equipped audiological centre, manned by a speech therapist, psychologist, social worker and teacher of the deaf should be set up in each district.

One training institute for training the teachers for the handicapped may be started in every state and the medium of instruction should be the language in the state. The syllabus of the B.Ed. and T.T.C courses should include topics on special education of the handicapped children. Teachers of the handicapped should be given comparable scales of pay plus a special allowance for additional qualifications.

Every school for the handicapped should have a visiting physician and referral arrangement with specialists to provide minimum health care for the students.

Education of the handicapped girls in special schools or in integrated programmes should be given a high priority and the curriculum for them should be adapted to meet their needs for learning home science and other relevant subjects.

No disabled child should be denied admission in any school merely on grounds of disability.

Educational opportunities for handicapped children should be expanded to fulfil the goal of universalisation of education. For this, it is necessary to think not only in terms of special schools or integrated schools but also in terms of non-formal education, distance learning, open schools, etc. In addition, a special curriculum should be developed for each category of disabled children at different stages of education.

### **Vocational Guidance and Training**

Vocational guidance should be imparted through travelling vocational counsellors appointed for groups of schools.

Intensive pre-vocational training of the handicapped should start from the secondary stage of education. Adequate facilities should be provided for work experience and vocational guidance from the earliest stages.

All programmes of vocational training of the handicapped should take into account the available types of jobs in the community. A resource book on survey of occupations may be prepared and updated from time to time.

One Vocational Training Centre for the handicapped may be started in every district. Separate Industrial Training Centres for the physically handicapped may be started in different places in the country.

Existing Industrial Training Institutes should shoulder the responsibility for vocational training of disabled persons. In case of minor disability, I.T.I.s should grant admission without hesitation. However, where special training is necessary, special sections in I.T.I.s should be established.

Facilities should be provided for training handicapped persons who are home bound in some useful trades.

Multi-category training centres for the handicapped may be opened in all districts. Special worksops may also be started to engage the trained hands.

The handicapped trainees, while undergoing training, may be provided with free lodging, boarding, stipend during the training period. On completion of training they should be provided with jobs in industrial concerns or with initial capital to equip them to pursue the trade on their own.

Special training centres with hostel facilities for handicapped girls should be established in every district.

Syllabus for training of disabled persons should be prepared in consultation with experts and NGOs and National Council for Training in Vocational Trades, which should also approve the syllabus.

The existing syllabus of training courses offered to the handicapped should be carefully reviewed with a view to making them more job oriented. Such reviews should be undertaken periodically in order to ensure that the content of training keeps pace with changing production techniques as a result of new technological advances.

The certificates given from the various vocational training centres for the handicapped must be equated to government technical examination certificates in the respective trade in order to facilitate their recruitment by Public Service Commissions and other appropriate bodies.

Training facilities available in the community should be utilised with such adaptations as may be absolutely essential for training the handicapped in suitable occupations.

Vocational training facilities for the handicapped may be enhanced by adding sections to the existing vocational training institutions, polytechnics and other similar centres for non-disabled persons.

Suitable pre-training and post-training evaluation techniques should be developed and facilities for this purpose should be made available in all training establishments for disabled men and women.

Since the majority of handicapped persons live in rural areas, adequate facilities should be developed to provide training to the handicapped in rural and agricultural occupations. Agricultural tools and implements presently used may be modified so as to be conveniently handled by the physically handicapped persons.

More training centres and special workshops may be opened in rural areas in order to resist the flow of disabled persons from rural areas to urban areas for employment.

Model pilot projects for vocational training may be organized in each state. The Apprentices Act 1961 should be amended to empower the government to identify occupations in which a substantial number of blind persons can be trained as apprentices, where necessary, by relaxing the prescribed qualifications and offering special facilities.

Institutions and organizations concerned with vocational training should be approached to give every possible assistance in evolving and establishing standards for training handicapped persons in technical skills.

Workshops for imparting intensive training and work experience to disabled clients should be kept separate from full fledged production units. They should work as modern polytechnics for the disabled.

## **Employment**

Intensive surveys and job analysis should be undertaken with a view to developing an occupational classification, indicating the type of jobs that could be efficiently performed by various categories of disabled persons.

The Union and State Governments should take steps for statutorily ensuring reservations of posts for the handicapped belonging to every category and they should also reserve posts in Class I and Class II (A & B posts) for suitably qualified and experienced persons. The reservation may be made applicable in the case of promotion posts also. Provision may be made for special recruitment of physically handicapped as in the case of Scheduled Castes and Scheduled Tribes. Staff Selection Commission and Public Service Commissions in the States and Union Territories should hold examinations regularly to fill the vacancies.

Scientific studies should be sponsored to investigate into the relative performance levels of disabled and non-disabled workers in order to provide a firm base for a clearer demonstration of the potential of physically handicapped workers.

A united endeavour should be launched by the state and voluntary organisations to promote the placement of the handicapped in diverse occupations.

The Government should allot, free of cost, land with irrigation facilities, and make adequate financial aid available for successfully resettling the handicapped. Mini workshops should be set up in rural areas assisted by the Central/State Governments. A Financial Corporation should be set up to give loans to the disabled persons on easy terms for self employment. Nationalised banks should also give generous loans. The Rozgar Yojana and other schemes of government should provide for the disabled persons also.

Fullest possible use may be made of modern technology to broaden employment opportunities for the handicapped taking care to ensure that the technology used for this purpose is in accordance with the overall pattern of industrial development in the country.

Sheltered employment should play an increasingly important role in the rehabilitation of the handicapped though the main goal should be to place the maximum number of the handicapped persons in open employment.

A national agency to arrange equitable distribution of contracts and provisions of technical advice should be established either under voluntary or state auspices.

A National Corporation may be set up to manage a chain of workshops and production units for the handicapped, paying full wages, applying all pertinent legislation and making the fullest use of modern management techniques. Certain items should be earmarked and the State/ Central Governments should make bulk purchases from these workshops.

Enterprising handicapped persons may be encouraged to form industrial co-operative societies and start small industrial units wherever feasible. Necessary equipments, machinery and raw materials may be supplied to the co-operative societies on hire purchase basis.

Co-operative agricultural farming by the handicapped may be encouraged.

Handicapped persons possessing the necessary academic and professional qualifications may be granted loans on easy instalments to enable them to engage themselves as lawyers, physiotherapists, doctors, engineers, chartered accountants etc.

The Scheme of Special Employment Exchanges should be continued. Their number should be increased from 22 to 50 and Govt. of India should bear the entire expenditure. There should be a cadre of special employment officers. Voluntary agencies and National Institutes should be enabled to submit candidates against the vacancies in the public sector and government directly.

In every Employment Exchange a separate wing should be established with a placement officer exclusively in charge of registration and placement of the physically handicapped. It must be ensured that the disabled are not relegated to the lowest wage earning occupations nor are they denied access to positions of responsibility.

During the unemployment period, adequate living allowance should be given to the handicapped registered with the employment exchange.

Incentives such as relaxation in income tax, preference in the allotment of raw materials and subsidies may be given to private employers who employ handicapped persons.

### **Aids and Appliances**

Agencies undertaking mass manufacture of aids and appliances for the handicapped and who can ensure quality control, servicing facilities and supply of standard spares, keeping the production costs low, may be encouraged.

Rehabilitation engineering may be introduced as a major field of interest in institutes of industrial training, especially at the post graduate level.

Ancillary industries may be developed to supply specified parts for the manufacture of aids and appliances in consultation with large aids and appliances manufacturing agencies like Artificial Limb Manufacturing Corporation.

Proper distribution of these appliances through well organised and approved district level fitting and servicing centres may be ensured.

Besides provision of wheel chairs for mobility within the house and propelled tri-cycles, motorised wheel chairs, scooters and mini cars with suitable modifications and adaptations may be provided to the handicapped with government subsidy.

The personnel working with the handicapped should be provided with regular training facilities in order that they may help the handicapped in the use of artificial aids and appliances.

Aids and equipments for reading and writing braille and mathematics may be made widely available to the blind children. Besides, all modern electronic equipments adapted/ developed for the visually handicapped like reading machines, braille embossers, computers etc. may be brought within the reach of the blind. In order to enable the blind participate effectively as productive partners in industries, industrial aids such as audible multimeters, micrometers, wood marking gauge etc. should be manufactured.

To enable the deaf improve their skills, instrumentation in evaluation of hearing loss, testing of hearing aids and communication aids may be developed, using modern technology with indigenous materials.

## **Research**

Tests may be evolved for all categories of handicapped for measuring their intelligence, attitudes, aptitudes and other psychological factors. These tests should be designed and adapted to the Indian situation. Research should also be made on secondary problems of the handicapped employees like pressure on tissues, inflammation of joints etc.

Research aimed at discovering new avenues of employment for the handicapped may be initiated.

Research projects designed to develop new gadgets that would widen employment opportunities for the handicapped may be taken up.

Technology and architectural designing may be developed for environmental modifications to suit the needs of the working

handicapped. The Union Ministry of Welfare should publish a digest of research on problems of the handicapped. There should be a nation-wide dissemination of research findings, preparation of directories and feed-back reports indicating how the results of research have been implemented or acted upon by voluntary agencies in the field. Government and the concerned research councils should fully finance these efforts.

## **Legislation**

Legislation for the comprehensive rehabilitation of the handicapped should be enacted providing for equality of status and opportunities and ensuring the dignity of the handicapped individuals in all walks of life, including social and cultural spheres.

A comprehensive social system may be evolved to ensure liberal state assistance to the handicapped who cannot earn full economic living independently.

Para-legislative measures may be introduced to meet the needs and aspirations of the handicapped till the regular enactment of legislation for comprehensive rehabilitation of the handicapped.

Outdated legislation related to the payment of compensation to the injured may be reviewed and necessary modifications be brought about to protect the interest of the disabled and to compensate them for the consequential handicap. Re-employment of the injured and the disabled may be made obligatory for the employers concerned.

Wherever discriminatory legislation exists, urgent steps should be taken to amend it.

A National Policy should be formulated and adopted irrespective of the National Legislation for the Disabled as it would be a functional document covering all aspects concerning disability and the disabled persons.

## **Psycho-social Rehabilitation**

There should be an adjustment and evaluation centre in every district and, where possible, sub-centres in the rural areas to enable the handicapped of the surrounding areas to take advantage of such facilities. To ensure proper and full integration of the handicapped,

these institutions should give priority to development of skills in communication among the handicapped and provide scientific training in the healthy acceptance of their disability. Mental health programme should be provided in such centres and the services of a trained psychologist may be made available for counselling work and for inculcating good social manners and habits in the handicapped. Training in daily living skills for all categories of the disabled and mobility and orientation for the blind must be an integral part of this rehabilitation training programme.

### **Community Based Rehabilitation**

The family of the handicapped must invariably be involved in the rehabilitation programme. Volunteers from the community should be mobilised to visit the disabled in their homes and educate the parents and other family members about the facts concerning disabilities.

District Rehabilitation Centres (DRCs) may be established in all the districts.

The modern concept of Community Based Rehabilitation may be implemented extensively to cover all the villages in the country within a target time.

Workers for the disabled must use all the ingenuity at their command to stimulate interaction between the disabled and the non-disabled in varied settings.

### **Social Integration**

The dynamics of group interaction between the disabled and the non-disabled should be extensively studied to determine the factors conducive to the growth of more positive attitudes in both.

Inter-marriages between the disabled and the non-disabled must be encouraged and financial assistance and other considerations may be given to them as in the case of Scheduled Castes and Scheduled Tribes.

Sports and games as well as arts and dramatics should be encouraged among the handicapped. Recreation facilities for the disabled should be organised along with those for the able bodied persons.

National Awards in the field of sports of the disabled should also be introduced. A National Sports Authority should be established and financial assistance should be provided for promotion of sports for the disabled.

Films and plays depicting the life of the handicapped should be encouraged provided that they do not depict the handicapped as a fallen person and a subject of pity.

Steps should be taken by concerned states and voluntary agencies to offer adequate housing facilities to physically handicapped persons. Public buildings should provide facilities for accommodating physically handicapped persons. Hostels for working handicapped persons should be set up in urban areas.

Fullest possible use may be made of the community resources and the community may be continuously educated for better acceptance of the handicapped and for promoting their total rehabilitation.

In conclusion it may be reaffirmed that persons with disabilities are an integral part of society. It is only their physical disability that distinguishes them from the rest of society. The psycho-social problems, economic backwardness and social segregation often attributed to the physically handicapped have their roots in the attitude of society towards them and in their reaction to society. Only through mutual acceptance, appreciation and adjustment can a real understanding between the two evolve. When the disabled persons are made to participate fully in the life and activities of the community and enjoy the fulness of life, they will feel fully integrated in society. The purpose of all rehabilitation programmes is to enable the handicapped to pursue this goal and attain this ideal.