CHAPTER ONE

CHAPTER - I : THE CONTEXT (1 - 71)

THE CONTEXT

1.1.
Introduction

Inherent in the philosophy of democracy is the right of all children to develop to their maximum potential. Public education in different nations has been founded on the preposition that educational opportunities must be provided to all children who can benefit from them so that they develop to their maximum potential. Theoretically, In this proposition are included the disabled children, who till recently have been out of the purview of society's concern.

Although India has achieved 52.1 percent literacy, there are a lot of disparities across areas and sections of the country. The enrolment figures are skewed in favour of males as against females, socially and economically advanced groups as against backward groups, urban as against rural, educationally advanced states as against educationally backward states and non disabled children as against disabled children.

In the context of enrolment and retention which directly link with literacy, the population of disabled children emerges to be a very important section that needs immediate help. The national level data on the population of the disabled, does project a gloomy picture -

"Out of 12 million disabled persons 4.3 million fall in the 4-15 age group and five million in the 0-4 age group. But not more than 1 percent of the mentally retarded and 5 percent of the deaf, and 5 percent of the blind are estimated to be in school" -

NPE, 1986.

"it is estimated that about 12.59 million children with disabilities are to be provided education in the school. The educability of another 2 million disabled children is to be improved through early intervention and services by Early Childhood Care and Education".

POA, 1992.

The goal of providing education to the disabled children and rehabilitating the group of the disabled persons has been taken up seriously only very recently in India and other developing countries although it is more than a century since these developments have been on the run in many other countries, Recognition of the need for educational services to the disabled as a human right just like any other citizen and the goal of universalization of elementary education have strongly pulled the educators and planners towards special educational services for the disabled.

1.2.

Concept of Special Education

According to the theory of individual differences, there are many factors specific to each individual which are related to his/her learning,academic achievement and development. There are individuals who learn very fast. But there are others who do not learnfast, but with suitable teaching-learning input, can learn prescribed tasks, may be over a relatively longer time span.

"There are some who find it difficult to learn without special inputs. These are the children with special learning needs, which arise out of sensory, intellectual, psychological or social-cultural deficits. For example, persons with neuro-muscular, visual or hearing impairment have learning problems, so have persons with a low level of intellectual functioning and those with disorders in psychological processes. Emotionally disturbed persons have learning problems of their own. These conditions, impairments or disabilities, impede the normal development of individuals - intellectually, socially, emotionally and physically. There are, however, ways to reduce this discrepancy through restorative, habilitative and rehabilitative inputs, including education, wherein speciallised educational inputs are demanded. These inputs include, special instructional methodology and instructional material, learning aids and equipments specific to special learning needs, additional teaching competencies in the general teachers and also special teachers with special teaching and managerial competencies for teaching the disabled children. These needs have given rise to the component of education known as special education."

(Jangira, and Mukhopadhyay, 1991)

The following categories of exceptionality fall in the purview of special educators :-

- Visual impairment
- Hearing impairment
- Orthopaedical impairment
- Mental impairment
- Speech impairment
- Learning disability
- Emotional disturbance
- Giftedness

Since its inception in the early 17th century, special education has been concerned with both disabled and the gifted. However, a great deal more of special education's resources and much more of society's concern have been devoted to helping the disabled than the gifted.

1.2.1.

The New Conceptualization in Special Education

The new conceptualization that has emerged in the field is that handicapped is a social construct, created and built by an attitudinal environment. For example, a boy who is mobility impaired suffers a handicap when the school has no ramps to help him, or the student who is blind becomes handicapped when this impairment leads others to think that she cannot learn. Too frequently special education practice is addressed solely to the impairment, teaching those who are labelled alike in the same way. The new conceptualization will require understanding of the relationship between impairment and handicap, that is, preparing the student both to overcome or cope with the impairment and to become an advocate for needed services against the handicapping response of society.

"The upcoming persepective in the field is to frame the problems of special children in a different way. It sees the problem as the result of a mismatch between learner needs and instructional or management systems, and therefore sees the child as not a disabled person, but as a learner whose potential is being thwarted by the educational mismatch".

(Gartner, and Lipsky, 1990).

1.3.

Historical Background of Special Education

1.3.1

Developments in the West

Universally in the past, disabled were viewed as the dregs of society or as bad omens, and were prevented from

participating in the activities necessary for survival. They were excluded from the purview of normal educational experiences. They were treated as defective and hence unfit to profit from regular schools and facilities.

In the early nineteenth century, the idea of democracy, individual freedom and egalitarianism that swept in the West and advances in learning theory and technology have contributed to the emergence of optimistic attitude towards these people.

Globally, special education has evolved through five stages. The first stage refers to the stage of neglect and even ostracization of disabled persons. Disability was viewed as punishment for past sins and nobody wanted to interfere in the justice meted out to disabled persons by God. This was followed by the stage of pity and compassion, mostly on religious considerations to reduce misery and pain of disabled people. The invention of braille and efforts of doctors, psychologists and educators for education and training of disabled persons encouraged establishment of special schools for disabled children in the third stage. Segregation continued to be the watchword in special education. At the fourth stage, mainstreaming and integration of disabled children in general schools received attention as a part of the normalisation movement. As a reaction to categorisation and labelling, the artificial boundaries of general and special education came under scrutiny at the fifth stage. In the process emerged the concept of special needs, explained under 1.2.1.

The beginning of establishment of special institutions as part of the development of special education can be traced back to the work of Jean Mare-Gaspard Itard, a French physician who began the training of a feral child, Victor, in 1801. Itard's work marked the beginning of widespread attempts to teach children with a variety of handicaps. The Reverend Thomas Hopkins Gallaudet became the principal of the first residential school for the deaf in Hartford in Connecticut in 1817. No more important headways have been recorded in the rest of the century other than establishment of more number of institutions for different categories of disability. The early part of the new century brought increasing interest in the health, welfare and education of children and more public school classes for exceptional children.

In the 1920s, new professional organisations concerned with the education and care of exceptional children were founded. Training programmes for the teachers of the disabled were begun in teacher education colleges and universities.

The present era is clearly one of rapidly increasing government intervention on behalf of the welfare of its citizens. The role of government in U.S., U.K., and all over the world has become increasingly directive over the past hundred years, and government responsibility has become increasingly centralized specially in the past decade. Earlier, government action was mostly at the local and state levels, recent action has been at the central level.

The most positive response to the disabled was envisaged by UNESCO in 1946, followed by Education for All Handicapped Children's Act, 1975 (U.S. Public Law 94-142), the Warnock Committee (1978) review report on the Educational Provisions for the Handicapped Children and Youth in England.

1.3.1.1.

UNESCO and the Education of the Disabled

In 1946, the general conference adopted a resolution to introduce special education into UNESCO's regular programme. UNESCO thus joined the other UN specialized agencies in the rehabilitation field, namely International Labour Organisation (ILO) who takes care of the vocational aspects of rehabilitation and World Health Organisation (WHO) which takes care of medical aspects. UNESCO covers educational aspects. Activities of UNESCO are two fold :

1. Serves as an instrument and channel for the elaboration of guidelines and orientations for national and international action in the field of special education - covering general and specific issues.
2. Operates at the request of governments, a technical co-operation programme by means of providing expert assistance, fellowships and equipments on a short or long term basis.

1.3.1.2.

The Education for all Handicapped Children Act (1975)

The Education for All Handicapped Children Act, which

became law in 1975, is referred to as P.L. 94-142. In U.S, the fourteenth amendment to U.S. constitution guarantees equal protection for all citizens under law. Civil rights movements in 1950-s, and 1960-s for the handicapped resulted in legislation guaranteeing that the exceptional children can no longer be denied appropriate educational services. P.L. 94-142 is said to be landmark legislation. The major features of the law are :

(i) a free, appropriate public education to be provided for all handicapped children.

(ii) School system to provide protective safeguards to protect the rights of handicapped children and their parents.

(iii) Handicapped to be educated with non-handicapped to the maximum extent possible.

(iv) an individualized education programme (IEP) to be developed and implemented for each handicapped child, and

(v) parents of handicapped children to play an active role in the process used to make any educational decision about their handicapped children.

1.3.1.3.

The Warnock Committee Report (1978).

British parliament appointed the Warnock Committee to review the educational provisions for the handicapped children and youth in England, Scotland and Wales. The Committee

recognized a continuum of special education needs from mild to severe and profound, in a single school population. Special educational need, according to the report, is likely to include -

(i) the provision of special means of access to the curriculum through special equipment, facilities or resources, modification of the physical environment or a specialized teaching technique ;

(ii) the provision of a special and modified curriculum;

(iii) particular attention to the social structure and emotional climate in which education takes place.

1.3.2.

Developments in India

Two major themes have dominated the history of education for the disabled. First, the belief that children with certain disorders and disabilities require distinct schools to cater to their special needs and secondly that the regular educational system should be sensitized and equipped to accommodate the handicapped as far as possible. The second theme has been accepted very recently in India and efforts are going on in this direction.

Looking back into the history of developments in the field in India, one would find a range of emotional reactions to the disabled from extermination to respect as a fellow human being.

"The treatment given to the disabled in India is comparable to that given elsewhere historically - they had to undergo a stage which can be described as instinctive darwinism, the parental

instinct provided protection and some extent of informal education, so that the disabled could cope with their disability".

(Jangira, 1986).

Next stage was social darwinism apparently originating from the sin theory, deep-rooted in the theory of Karma, by which disability came to be viewed as punishment by God for the Karma (acts) in the past life. The phenomenon of social darwinism which creeped into education in the early stages of 19th century and continued till the later half is described as educational darwinism. It meant that there was no specific provision for education of the disabled and the attitude was of indifference and simple -

"come if you can, learn if you can, cope up if you can, repeat classes if you can't, or stagnate as long as you can afford."

(Jangira, 1986).

With the development of modern education, institutions for the disabled were established, as elsewhere, by voluntary charitable enterprises towards the close of the nineteenth century. These institutions were also transplanted models of the special institutions in Britain as it happened in ordinary education. The first school for the deaf was established in Bombay in 1885, while the first school for the blind came up in Amritsar in 1887. The facilities for the mentally retarded were established in the form of psycho medical retardation centre at Ranchi in 1934 only while the first home for the mentally deficient came up at Bombay in 1941. The number of institutions for the deaf, blind and mentally retarded rose to 34, 32 and 3

respectively by 1947.

The constitutional commitment to universalisation of elementary education and the concept of a welfare state led to the expansion of the facilities for the disabled in the post independence period. The central government increased funding of schemes for the prevention of disabilities, and education and rehabilitation of the disabled.

The eighties, particularly the later half, can be considered to be the period of movement towards the fourth phase of development of special education in India. It was during this period that national institutions for different handicaps were established, which has been a great break through in this field. These institutions are :

- National Institute for Visually Handicapped - NIVH - Dehradun.
- National Institute for the Mentally Retarded NIMR - Secunderbad.
- Ali Yavar Jung National Institute for the Hearing Handicapped - AYJNIHH - Bombay.
- National Institute for the Orthopaedically Handicapped - NIOH, Calcutta.
- National Institute of Mental Health and Neuro Sciences - NIMHANS - Bangalore.
- All India Institute for Speech and Hearing - AIISH - Mysore.

These institutions are established with an objective of

providing leadership in research development and training. NCERT and a few university departments and colleges of education have been funded for developing training programmes.

National policy on Education, 1986 discusses Education for the Handicapped, along with Women, SC,ST and minority groups, in Chapter IV - Disparities. It lays emphasis on the removal of disparities and the need to equalize educational opportunity. These emphases which in another way represent the motto 'education for all', encompass the importance of exceptional children and special education. In fact, the National Policy on Education (1986) has similar philosophical thrust as that of British Warnock Report (1978) and the P.L. 94-142 of the U.S. (1975), and confirm the universality of educational right for handicapped, individuals, extending special education beyond 'sporadic effort' stage of evolution.

The Programme of Action for implementation of the - NPE'86 envisages education of a sizeable number of disabled children in common with other children. To realize this objective the central government has sponsored a scheme for integration of the disabled in 1987 - Integrated Education for the Disabled Children (IED). The thrust of the scheme is to place mildy handicapped children in ordinary schools with the help of special teachers, aids and other resources.

The Integrated Education for the Disabled is in fact a compulsion to be on the move. The dilemma faced by India and other third world countries is

"whether to provide some education to all within the shortest possible span of time (wherever feasible) in ordinary schools, or to keep them in the waiting line up as appropriate special schooling facilities develop over an unpredictable length of time. Following the ethics of social development, the inevitable choice falls on the former compensatory expedient". (namely, provide some cake of education to all within the shortest possible span of time in ordinary schools).

(Jangira, 1986)

Thus, the move on the national front has been to educate a child with disability, as far as possible in a general school, and to transfer those children who are initially admitted to special schools for training in plus curriculum skills, to general schools, once they acquire daily living skills, communication skills and basic academic skills.

1.3.2.1.

The Present Scenario

"The Project Integrated Education for Disabled (PIED) is implemented, as a field demonstration, in one block each in ten states and Union Territories. In these blocks about 90 per cent of children with disability are receiving education in general schools. The multi-category training of resource teachers has been found to be effective and has been institutionalized in the Regional Colleges of Education, the universities offering special education courses and the training programmes organized by Non-Governmental Organizations. Each District Institute of Education and Training (DIET) has been provided a resource centre for orienting elementary teachers and establishing field demonstrations in laboratory areas..... The Ministry of Welfare have taken steps to ensure supply of trained manpower to special schools and improve standards in these schools through the National Institutes for the Handicapped (NIHs) and increased support to NGOs. The Ministry of Labour manages 17 Vocational Rehabilitation Centres (VRCs) for the hadicapped and helps in their placement also. About 66,000 persons with disability have been rehabilitated under this scheme by September, 1991. Three percent of seats for admission to ITIs and under the Apprenticeship Training Scheme are available for handicapped persons.

The evaluation of special schools and the scheme of IEDC have revealed some grey areas. General education system is not yet mobilised, to a noticeable extent, for education of the handicapped, either at the Central or State level. Inputs from different schemes like CBR (Community Based Rehabilitation), DRC (District Rehabilitation Centrre), ECCE (Early Childhood Care and Education), non-formal education, adult education, vocational and technical education, etc are not being brought together for the education of the physically handicapped. Some states are still reluctant to implement IEDC (Integrated Education of Disabled Children) while some are implementing it rather indifferently. Few NGOs are active in rural areas. The standard of education in special schools needs improvement. Facilities for children with multiple handicaps are yet to be developed. The early detection and intervention pogrammes so essential for education of these children are yet to be started. The goal of universalization of Elementary Education (UEE) for this disadvantaged group would remain an unachievable dream unless concentrated and urgent measures are taken".

(POA,'92)

1.4.

Estimates of Disabled People in India

"Although estimates of the disabled are variable, it is estimated that two percent of the population suffers from one or the other traumatic disability. Besides this, there is a sizeable number of children in the school system who mainfest special educational needs at one or the other time during his educational career".

(Jangira,'86)

The disabled population, add up to the pool of dependent population which is already quite high in India. Unless dependent population is helped through education and rehabilitation, quality of life cannot be improved. Thus, estimates of disabled people calls for urgent action.

Table 1 gives the population of disabled by age group and nature of disability - based on the 1981 census. No such data is available as yet of the 1991 census. What is presented is extrapolated data as given in POA 92.

Table No.1 Population of Disabled by Age Group and Nature of Disability (1981)

DISABILITY	0-4 YRS RURAL	0-4 YRS URBAN	5-14 YRS RURAL	5-14 YRS URBAN	15-59 YRS RURAL	15-59 YRS URBAN	60+ YRS RURAL	60+ YRS URBAN	ALL AGES RURAL	ALL AGES URBAN	GRAND TOTAL
V.H.	23559	4554	92351	34268	693182	171500	2045483	355837	2856575	566159	3422734
H.H.	NOT COVERED		439368	96107	1462450	244680	916857	202577	2818675	543364	3262039
S.H.	BY THE SURVEY		575096	168975	688387	199142	99431	24145	1362914	392262	1755176
L.H.	235077	98366	945900	282806	2094432	500714	913019	192302	4238428	1074138	5312616
TOTAL	310836	102920	2052715	582156	4938451	1116036	3974790	774861	11276592	2575973	13852565

Note : Based on prevalent rate given in the 19th and 28th National Sample Survey and Total Population in the Population Statistics paper 2 of 1983, Series 1 of India, A.G. Office.

‡ POA, Ministry of Human Resource Development, New Delhi 1986.

V.H. - Visually Handicapped

H.H. - Hearing Handicapped

S.H. - Speech Handicapped

L.H. - Learning Handicapped

Note : Does not include mentally handicapped persons, It is estimated that 6.3 million people are mentally handicapped.

1.5.

Estimates of Disabled People in Guajart

Number of disabled people categorized into types of disability in the different districts of Gujarat is given in table No.2. The point that emerges from the table is :

Larger population of disabled is in the rural area.

Table No.2 Disabled Population by Type of Disability in Gujarat *

DISABILITY		No. of Disabled
TOTALLY BLIND	RURAL	19,202
	URBAN	4,240
	TOTAL	23,442
TOTALLY CRIPPLED	RURAL	24,965
	URBAN	7,421
	TOTAL	32,386
TOTALLY DUMB	RURAL	9,943
	URBAN	2,628
	TOTAL	12,571

* (Census of India : 1981, Series 5 - Gujarat Part VII : Tables on Houses and Disabled Population P. 24)

"It is estimated that about 12.59 million children with disabilities are to be provided education in the school system. The details -

	Figures in Millions
Projected Population of Children with disability in the age-group 5-14 years*.	3.19
Locomotor handicap	1.48
Hearing handicap	0.65
Speech handicap	0.91
Visual handicap	0.15
Mentally retarded children in the age group 5-14.**	3.16
Children with learning disability in the age group 5.14	3.60
Children with disability in the age group 16-18 years	2.20

* The 1981 figures of the survey by National Sample Survey Organization (NSSO) have been extrapolated on the assumption that population with disabilities would have grown at the same rate as the general population.

** Estimated at 1% of the population in the age group 5-14 years.

"Out of 12.59 million, about half a million require vocational training. The educability of another 2 million disabled children is to be improved through early intervention and services by ECCE."

POA - 1992

The brief presentation on the historical view of developments in special education, and estimates of disabled in India, is followed by an overview of the present study.

1.6.

Overview of the Present Study

Silhouetted against the background of the challenges faced by India in meeting the educational requirements of the hearing impaired, is the present research work formulated. It was with thorough awareness about the limitations inherent in the field, especially because of its embryonic stage of development, that the investigator plunged into the study. In such a difficult context, any attempt to bring about revolutionary changes would definitely call for fundamental conceptual clarity regarding the goals and methodology.

Startling realizations of the investigator on accidental visits to schools for the deaf in Bombay and subsequent visits to those in Gujarat, sparked off a set of questions regarding the 'dumbness' of the deaf. The two lines of thought that sprouted from this realization were, the need and possibilities of overcoming dumbness, and of providing an ideal but realistic system of education to the deaf ; and to study the system in practice, to see the degree of departure from the ideal system.

Stemming from this perspective, the first major concern of the study has been, development of a model of schooling for the hearing impaired. The model has been built up on a firm foundation of experiences, experiments, aspirations, failures, controversies, concerns and the revelations of the great predecessors, that catalysed the forward momentum of the

history of deaf education.

Is it possible to help a deaf child to come out of silent world to experience the magical pleasure of listening and talking ? How can we offer him/her a world of words, so musical and enchanting ? The model can be considered as the outcome of the efforts of scruitinising historical lessons for answering these questions. Of these, answers offered by history to the first question is an encouraging YES. As such, the basic goal of deaf education, according to the model is, of making them participate meaningfully in the hearing world. The modalities of the achieving this goal are churned out by following a methodology that resulted in a conceptual system of education of the deaf which is logical and empirical.

What is the degree of divergence of the existing pattern of schooling in states of India like Gujarat, from the conceived model ? It was this question that stimulated the researcher to undertake a detailed study of the state system of education and to critically assess its effectiveness, keeping the model as a yardstick. Structural and functional aspects of the schools for the deaf in Gujarat, along with teacher education programmes and vocational rehabilitation programmes were all studied to bring out a comprehensive picture.

It is thought pertinent that a background knowledge of the hearing impaired is essential to appreciate the study. Thus, a brief presentation regarding the nature, and effects of hearing impaired, and its implications follows.

1.7.

Hearing Impaired -- The Background

Severe hearing impairment, or in other words, deafness is one of the most desperate of human calamities.

For millennia hearing impairment was considered so catastrophic that very few ventured to ease its burdens.

"Deafness is a greater hardship than blindness. Blindness cuts people off from things, but deafness cuts people off from people. The problems of deafness are deeper and more complex, if not more important, than those of blindness. Deafness is a much worse misfortune, for, it means the loss of the most vital stimulus - the sound of the voice that brings language, sets thought astir, and keeps us in the intellectual company of man"

(Helen Keller)

To get a feel of blindness, one can try making one's way down an unfamiliar hall in the dark, late at night. But damping on a pair of earmuffs, conveys nothing essential about deafness, because the earmuffs cannot block out a life time's experience of having heard language. That experience makes hearing people ineradicably different. The challenge that they have to face is recognizing that other people's mysterious lip movements are language, and then learning to speak that language - is immeasurably greater than that facing an adult who must cope with a gradual hearing loss. For the deaf, who hasn't ever heard sound, learning to speak is a tremendously hard task, because they have to try, without any direct feedback, to mimic sounds they have never heard.

Out of 4.2 million disabled who fall in the age group

4 - 15 years, 0.53 million are hearing impaired (census of India, 1981), which demands focused attention. It has been observed that

"much progress has not been attained in the field of education of the hearing impaired".

(Jangira, 1986)

One of the strong bases of this observation is that compared to the orthopaedically impaired and the blind, we hardly have any hearing impaired in colleges, much less in professional colleges, and very few in any challenging profession.

One main hindrance to the development of the hearing impaired is that the defect is an invisible one. They are often passed off as normal persons. Hence identification of the problem is itself a difficult task. The immediate and most important effect of an impairment of hearing is the impact it has on communication and language development. At whatever age the impairment begins, it will affect communication to an extent, depending on the type and degree of the impairment. It will affect not only what the person hears and comprehends but also the extent to which he can control his speech if he becomes hearing impaired after learning to speak. The reasons for the above results of hearing impairment are obvious - normally language is learnt through listening and imitating to speak, which do not happen as a natural course in the hearing impaired. In other words what language develops through the skill of listening memory in hearing children, has to develop through the skill of visual memory in the case of hearing impaired, which is

an extremely different and difficult task. The success of language development depends heavily on factors like co-operation and constant efforts from parents, siblings, teachers and community at large, availability of adequate equipments, special training of parents and teachers etc.

The consequences of the impairment are much more adverse than those of blind or orthopaedically impaired. The educational development of these children is highly limited.

The irony is that the hearing impaired are many a times equated with mentally retarded people by the community because of their inability to speak. They are considered intellectually inferior people, unable to fit in tasks involving decision making. These attitudes of the community have segregated them as a separate group, and their educational development lag is reinforced. It is the demand of the time that we equip our educational and vocational systems to adequately match the special needs of the hearing impaired for their proper intellectual development and economic independence.

1.7.1.

Education of the Hearing Impaired :

The pioneers in the education of the hearing impaired were Jean Pablo Bonet and Jacob Rodgrigues Pereire, Spaniards of the seventeenth century. Bonet published the first book ever written on teaching hearing impaired children in 1620, in which he described the manual alphabet for the hearing impaired. Pereire extended Bonet's alphabet and added to it the manual

sign language. He also expanded the more far-reaching technique known as lip-reading or the oral method of teaching the hearing impaired by having them learn to form their own words by acquiring meaning from the movements of other people's lips and facial muscles.

Abbe Charles Michael De I'Epee in France (1755), Samuel Hernicke in Germany, Thomas Braidwood in Edinburgh (1760) were all pioneers in the field of education of the hearing impaired in Europe in the 18th century.

In USA, it was Thomas Hopkins Gallaudet who founded the first school at Hartford, Connecticut, in 1817. Alexander Graham Bell was yet another pioneer in developing the concept and use of lip reading in USA.

Since the sixteenth century there has been debate concerning the relative effectiveness of different methods of communication with hearing impaired children. The impetus for this debate has been concern for the children's personal, linguistic, and educational development.

1.7.2.

Hearing Impairment, Disability and Handicap :

Auditory perception of sound is hearing. The perceived sounds are transmitted by the ear to the nervous system. If there is a deficit in hearing mechanism there is also a problem in perception.

Any impairment in auditory perception causes a hearing

impairment. Hearing impairment reduces or distorts our perception or knowledge of the world around us. The terms hearing impairment, hearing disability and hearing handicap, although used synonymously are different in meaning. An impairment is a defect in the hearing due to hereditary and/or environmental factors. Owing to this impairment, the child cannot use his/her hearing for ordinary purpose, and reduces the functional potential. Thus disability arises out of impairment. A handicap is restriction imposed upon, or acquired by the child, due to unmatched external factors, which affects the efficiency of her/his day to day life. For e.g. a defect in the eardrum is an impairment. This impairment distorts the process of sound vibration and restricts the normal process of transfer of the message to the middle ear. This distortion creates a disability in hearing, due to which he/she cannot enjoy the normal process of hearing without a matched provision as magnification of sound etc. Hence the child is handicapped.

1.7.3.

Definitions of Hearing Impairment :

When we speak of a person with normal hearing, we generally mean that he or she has enough learning to understand speech. Assuming that the listening conditions are adequate, a person with normal hearing will not need to rely on any special device or technique to interpret speech in everyday situations.

At the other end of the range of degrees of hearing is the **deaf person**, who is not able to use his or her hearing to

understand speech. Even with a hearing aid, there is too great a hearing loss to allow a deaf person to understand speech through the ears alone.

A **hard-of-hearing** person has a significant hearing loss that makes some special adaptations necessary. He or she is, however, able to use hearing to understand speech, generally with the use of a hearing aid. Both deaf and hard-of-hearing people are said to be hearing impaired.

Hearing loss may also be described in terms of its age of onset. It is important to consider whether a child is impaired at birth or acquires it later. If born impaired, he/she is **congenitally impaired** and if it is acquired later he/she is **adventitiously impaired.**

Another way of looking at the problem is with reference to language and speech development, and this has direct implications on his/her education. A child born with little or no hearing, or has suffered the loss of hearing in early infancy, before speech and language patterns are acquired, is termed **prelingually impaired.** A child who becomes impaired due to environmental factors after speech and language exposures, is termed **postlingually impaired.**

1.7.4.

Types of Hearing Loss

There are two main types of hearing impairments, conductive and sensorineural.

A **conductive hearing** loss results from obstructions in the outer or middle ear (such as excessive wax), or from malformations that interfere with the conduction of sound vibrations to the inner ear. Conductive hearing losses can be corrected through surgery or medication. Hearing aids are usually helpful.

A **sensorineural hearing loss** results from impairment to the auditory nerve or the inner ear. Nerve fibres are damaged. Sound may not be delivered to the brain at all, or may arrive in a highly distorted form, even if the source of the sound is made very loud. Sensorineural hearing losses cannot generally be corrected through surgery or medication. Hearing aids may or may not help.

See appendix No.1, for diagram of ear showing the different parts.

1.7.5.

Causes of Hearing Impairment :

There are several genetic, biological and environmental factors which may cause hearing impairment. Causes include parental deafness, blood incompatibility of father and mother, premature birth, lack of oxygen during or immediately after birth, certian maternal diseases and harmful drugs taken during pregnancy, diseases of the child, exposure to loud and persistent noise etc.

1.7.6.

Measuring Hearing Loss :

Sound is measured in units which describe its intensity and frequency. Both are important in considering the needs of the child with impaired hearing.

The intensity or loudness of sound is measured in decibels (dB). Zero dB is a point which represents the smallest sound the person with 'normal' hearing can perceive. Larger dB numbers represent increasingly louder sounds. A low whisper 5 feet away registers about 10 dB, an automobile about 65 dB. Conversational speech 10 to 20 feet away registers about 30 to 65 dB. A sound of about 125 dB or louder will cause pain to the average person. A person with a loss of 20 - 25 dB is considered to have 'normal' hearing.

Frequency, or pitch, of sounds is measured in cycles per second, or hertz units (Hz). Human beings are able to hear frequencies ranging from about 20 to 20,000 Hz, but many of these audible sounds are outside the speech range, the frequency range where ordinary conversation takes place. A person with hearing loss at very high and very low frequencies would perhaps suffer from some inconvenience, but would not be significantly handicapped in education and every day life. A person with a serious hearing loss in the speech range, however is at a great disadvantage. The frequency range generally considered most important for hearing conversational speech is from 500 to 2,000 Hz.

1.7.7.

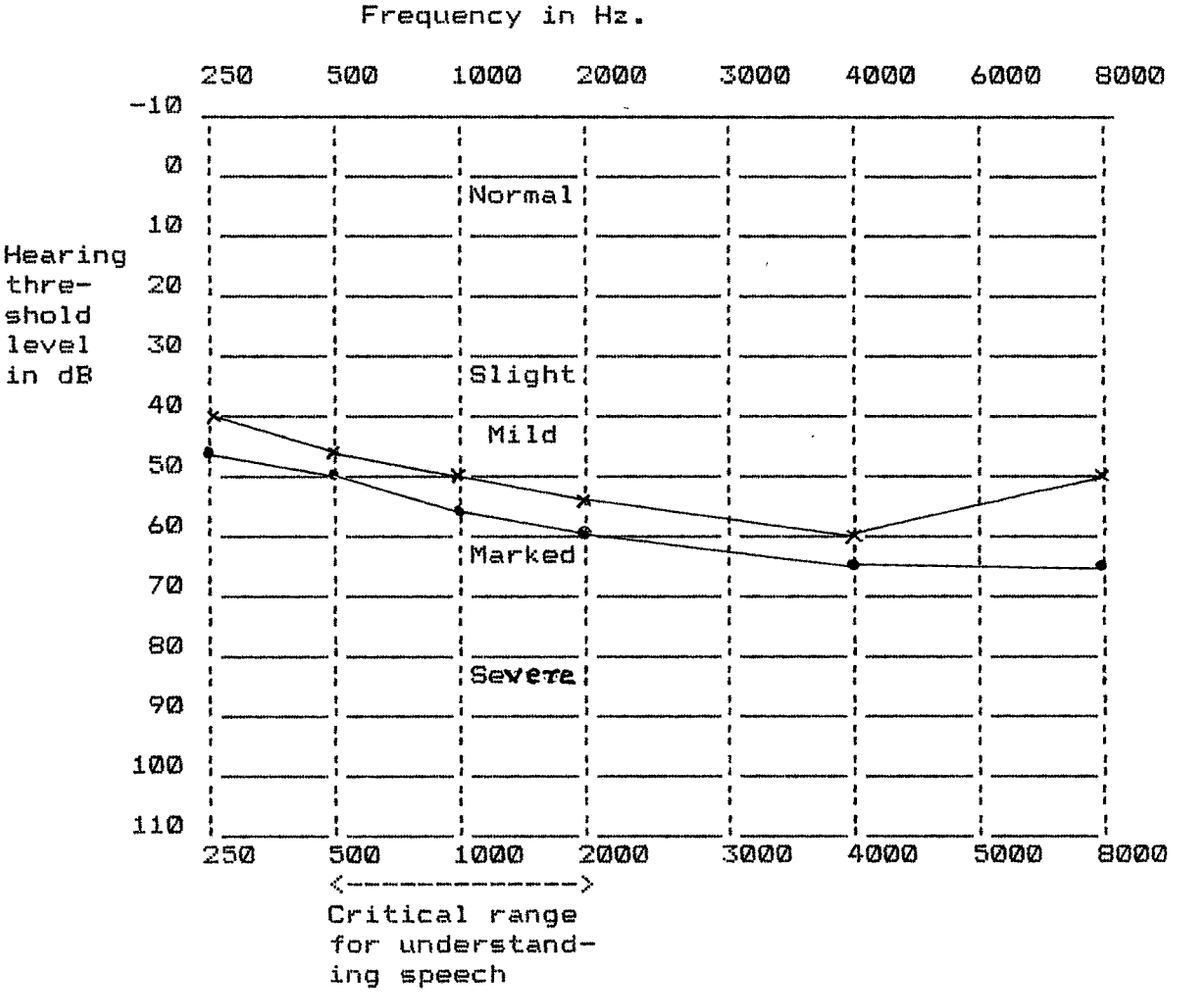
Identification and Assessment :

Most severely and profoundly deaf children are identified at an early age. All infants, hearing and deaf alike, babble. But the deaf child cannot hear his own babbling, nor the verbal play and praise of his/her parents. Therefore his babbling is not rewarded (as far as he can tell), so he stops. His babbling does not serve as a natural building block towards his first word and later use of language. When their baby becomes silent, parents often suspect a problem and seek help. Degree of hearing loss as measured by the intensity of sound a person requires before he/she can hear, are referred to as mild, marginal, moderate, severe and profound. There are different ways of classification of degrees of hearing loss and also different terms used to denote each category.

While children with severe hearing loss are usually identified during their first three years, children with milder impairments, which can drastically affect the child's success in school if not corrected, are often not identified until their early school years.

When hearing is formally tested, the examiner exposes the child to sounds at different levels of intensity and frequency. The device which generates these sounds is called an audiometer, and the child's responses are recorded on a graph known as an audiogram. The response is the faintest level of sound that a child can detect at least 50% of the times. The

audiogram presented below, indicates that when a signal at 250 Hz was presented, the faintest sound the child could hear at that frequency was 40 dB (left ear) and 49 dB (right year). Thus, this audiogram shows mild hearing loss.



AUDIOGRAM OF A CHILD WITH MILD HEARING LOSS

(For more details of Measurement of Hearing Ability see appendix No.2)

•------• : Right ear
----- : Left ear

Success in communication and school achievement cannot be predicted simply by looking at an audiogram.

"Some children with very low levels of measured hearing are able to benefit from hearing aids and can learn to speak, while some children with less apparent hearing loss are not able to function well through auditory channels"

(Heward & Orlansky 1980).

"While it is not denied that a relationship exists between audiometric thresholds and speech intelligibility, the function is not a linear one. Unfortunately this fact has been overlooked. There has been a tendency to equate audiometric deafness to functional deafness".

(Sanders, 1976)

1.7.8.

Different Degrees of Hearing Loss and Corresponding Implications and Needs :

There have been attempts to categorise children according to degrees of hearing loss, as measured by audiometer and to decide their special needs correspondingly. The categorization and labeling are not similar across countries. In the following table (No.3), such a table developed at NCERT is given.

Table No. 3

Different Degrees of Hearing Loss and Corresponding Implications and Needs

Category	Level of Hearing loss	Speech Discrimination	Percentage of impairment	Educational Placement	Special Need
Mild	20-30 dB	90-100% in better ear	Less than 40%	Required modification in sitting arrangements in integrated setting.	Hearing aids.
Marginal	30-40 dB	50-90% in better ear	40-45%	Auditory training and speech therapies in integrated settings.	Hearing aids and speech therapy.
Moderate	40-60 dB	50-80% in better ear	40-50%	Amplification of auditory material & increased use of visual aids in integrated settings.	Adaptation of instructional materials and methodologies. More visual cues.
Severe	60-75 dB	40-50%	50-75%	Special class and limited integration (if not prepared for mainstreaming)	Special attention in learning and speech. Use of special techniques.
Profound	75 and above	less than 40%	75 to 100%	Special day school. Difficult to integrate in general classes.	Intensive special instruction.

dB : Decibel : Unit to measure loudness of sound. A person with hearing loss upto 20 dB is considered normal.

Adapted From :

(1) A teacher's Handbook on IED. Premlata Sharma, NCERT'88

AND

(2) Training Teachers of Hearing Impaired - A Source Book. P.L.Sharma & N.K.Jangira, NCERT'87.

1.7.9.

Effects of Hearing Impairment :

Deafness does not simply cause an inability in communication. The individual is unable to give expression to his sensory experience as he has not learnt the words/symbols for the same, thus it causes him/her to perceive differently. As a result of all these shifts in functioning, her/his personality adjustment and behaviour are also different. To say the deaf person is like the hearing person except that he cannot hear is an oversimplification. The deafness is not only in his/her ears, it pervades his/her whole being. The deaf have "problem of living" e.g., higher rate of unsocial activities, marital, social and vocational problems. Because she/he is frequently cut off from communicating with the population at large, the deaf often grows up in relative isolation.

The different characteristic effects of hearing impairment have been discussed separately in the following sections.

1.7.9.1.

Language and Speech Development

By far the most severely affected areas of development in the hearing impaired person is that involving the ability to learn language and speech.

The now obsolete term 'deaf-mute' reflected the implication that deafness automatically leads to an inability to

speak. The current view, however, recognizes that while hearing impairment, especially with higher degrees of hearing loss is a greater barrier to normal language development there are only a very few, hearing impaired individuals who cannot be taught some use of language.

Three of the most obvious disadvantages the hearing impaired child faces are that he or she,

- receives inadequate auditory feedback when he/she himself/herself makes sounds.
- receives inadequate reinforcement from adults.
- is unable to hear adequately an adult language model.

Inadequate auditory feedback and verbal reinforcement are often called as reasons for the deaf child's particular pattern of babbling as an infant. The deaf infants enter the babbling stage at the same time as the normal infant, but soon abandons it. It has been hypothesised that this is because normal infants are reinforced by hearing their own babbling and by hearing verbal responses of adults; the deaf child, not being able to hear himself/herself or others, is not reinforced. The lack of auditory feedback has also been identified as a primary cause of the deaf child's poor speech production.

It is this deprivation of hearing in that period of life when the child is learning to relate the world of experience to language symbols, that is the major factor which prevents maximum achievement later in school.

1.7.9.2.

Language Pattern

The tragedy of hearing impairment is not only that th person cannot hear, but also that he cannot communicate. Read communication, as essential part of every day community life i often attainable. Colloquialisms, social behaviour, everyda snippets of information, and even some hard facts come fro naturally overheard conversation. Hearing impaired children d not pick up this wealth of information.

Their language lacks the contractions an colloquialisms which make conversation easy and free flowing. I has poor vocabulary, a shortage of alternative words and littl subtlety of meaning. Their language is also defective i structure and there are difficulties with abstract language an concept formation. Mostly they use only simple sentences, they often make mistakes in writing or speaking even simple sentences like - (1) They go

(2) She have a toffee.

They may omit endings of words, such as the plurals-s, ing, or -ed. They may have difficulty in distinguishing between a question and a statement.

1.7.9.3.

The Speech Pattern

"The speech of a hearing impairment child is generally not intelligible to a new listener because, its tonal quality, pronunciation of speech sounds and joining of sounds into words and words into sentences are defective.

- the speech may be slow and labored, accompanied by high pitch.
- the vowels may be prolonged and as a result the speech may be distorted.

  Cha----i----r for chair.
- the speech may have abnormalities of rhythm including abnormal temporal patterns.

  "A---i--evt---oo---boo---ke---s for 'I have two books'.
- the speech may be nasal.
- Consonants are not properly joined and articulated."

(Sharma & Jangira, 1987)

1.7.9.4.

Voice Control

As a hearing impaired cannot hear his/her own sound, he/she is unable to control the voice. He/she will often talk very loudly or too quickly or slowly. For example, in a noisy room, by talking too quietly, or too loudly when the noise subsides may cause embarrassment.

1.7.9.5.

Cognitive Abilities

Researches with hearing impaired adolescents have documented that no basic malfunctions are present in the cognitive abilities of this population and that any inferiorities in cognitive performance may be accounted for by experiential and linguistic defects and communication handicaps. (Levin, 1976, Furth, 1964). Review of researches in regard to specific

cognitive skill performance in hearing impaired individuals brings into light the following :

No differences are found between hearing impaired and hearing learners in cognitive tasks such as :-

- parts-whole relationships (Furth, 1964)
- similarity and symmetry (Furth, 1964, Meadow, 1980).

Furth (1971), strongly advocates that thought is possible without language. Accordingly he believes that deaf children are not necessarily lower intellectually than normal children. Through his various experiments he concludes that the cognitive abilities of hearing and deaf children are similar except in those cases in which a particular concept is very dependent upon language experience.

Hearing impaired children have been found less able than hearing children to master skills like :

- Short term memory (Karchmer & Belmont, 1976).
- Concept application (Meadow, 1980).
- Dissimilarity (Furth, 1964, Meadow, 1980).
- Classification (Best & Roberts, 1975).
- Working with several different types of data (Ottem, 1980).

1.7.9.6.

Reading Ability and Comprehension

The hearing impaired is likely to be exposed in print,

to both vocabulary and syntax that are not part of his existing linguistic competence (Quigley et al, 1977, cited by Wood et al, 1986). It is through reading that a hearing impaired child may be exposed to many aspects of language. In short, the relationship between the reader and what he is reading is likely to be fundamentally and quantitatively different for the hearing impaired and normal children. Studies by Furth (1973) have shown that only small percentage of hearing impaired individuals understand language well enough to read a college level textbook. Trybus and Karchmer (1977) have found severe underachievement in reading. By age 20, only about half of the students were able to read at fourth grade level - that is, barely at newspaper literacy level.

For the normal children, reading speed is roughly an average of 50-60 words per minute, where as it is 15-20 for impaired child. Studies have shown that when we are exposed to speech rates of less than 40 words per minute our comprehension status breaks down. It appears highly unlikely that a hearing impaired with poor expressive and spoken language can make much sense out of text at half this rate (Wood et al., 1986). Reading ability decreases as language requirements for understanding increases.

1.7.9.7.

Academic Achievement

Hearing impaired are frequently handicapped in various degrees with regard to educational achievement. Reading ability

which relies heavily on language skills and is probably the most important aspect of academic achievement being the most affected, gives way to this result. Study by Trybus and Karchmer (1977) shows that in arithmetic, a subject that is one of the highest areas of achievement for hearing impaired only less than half of the students were able to work at an eighth grade level by age 20. In a similar study using a large sample, Gentile (1972, cited by Heward and Oralnsky, 1980) found that 17 year old deaf students scored at about the fourth grade on a test of paragraph meaning and the sixth grade level on a test of arithmetic competition.

This does not mean that hearing impaired are inherently incapable of achieving much higher levels than they ordinarily do. It is fair to say, however, that they are in need of much more intensive instruction than they typically receive in order to make up for their disadvantage of hearing loss. Another finding in this context is that age, sex, birth order, standard in which studying etc., which are family related variables affect the educational performance of hearing impaired student (Bhuta, 1984).

1.7.9.8.

Personality

In general, a hearing impaired child is puzzled, withdrawn and unhappy in social situations. Because he/she cannot understand what others are saying, he/she develops suspicious alertness alternating with co-operation when he/she is

markedly more responsive to praise and affection.

A young hearing impaired may throw tantrums to call attention, may develop tensions and resistance owing to lack of comprehension. She/he is frequently obstinate and has a tendency to tease. She/he gets irritated when she/he cannot make himself/ herself understood and he may explode with frustration.

In fact, whether a hearing impaired child will develop behavioural problems depends upon how well those in the child's environment accept the disability.

1.7.10.

Special Modes of Communication

Educational programmes and techniques for the hearing impaired are 'special' primarily because of their unique mission of teaching communication to children who cannot hear normally. Educators, scientists, philosophers, and parents, both hearing and deaf, have for many years debated over the most appropriate instructional methods for deaf children.

1.7.10.1.

The Oral Approach :

In this approach, the emphasis is on speech as essential for the deaf person's integration into the hearing world. Much attention is given to amplification, auditory training, speech reading, and above all, 'talking'. Oral educators acknowledge that teaching speech to the deaf is a difficult and painstaking process for the student, teacher and

family. The rewards of successful oral communication, however, are thought to be worth the effort.

1.7.10.2.

Manual Approach

In this, only fingers, hands and facial expressions, (In short body language), are used to express.

In this mode, there are different systems of using fingers :

- **Sign language** : Words and phrases are represented by signs. American sign language (AMESLAN) and British Sign Language are in vogue in the respective countries.

- **Signed English** : System of signs, the use of which is based on standard English Grammar. English can be presented through signs in the complete grammatical form.

- **Cued Speech** : System of hand positions around the face to differentiate speech sounds which look alike on the lips, or to indicate those speech sounds not visible when lip reading.

- **Finger Spelling** : Writing on fingers. Each letter of the alphabet has a unique position using either one hand or both hands (Britain and Australia use the two-handed method).

Indian Sign Language

Ali Yavar Jung National Institute for the Hearing

Handicapped, Bombay, has developed a standardized Indian Sign Language System for different languages of the Country, (in 1990) which has yet not been widely used in the schools or teacher education programmes around the country.
See appendix No.4 for manual alphabet, and No.5 for Indian Sign Language.

1.7.10.3.

Total Communication Approach

This is the more recently evolved approach to communication. The philosophy of total communication advocates the use of every possible method to develop a base for language learning, including combinations of the oral and manual approaches. Speech, is supplemented by one or more manual communication techniques, and meaningful communication is encouraged between teacher and among students. Although there are advocates of oral-only, and manual-only approaches, total communication is now the most frequent method used in classes of hearing impaired students (Hallahan & Kauffman, 1988).

The background of the present study covering the different aspects of the hearing impaired is followed by a brief review of related studies in the field of special education. As stated earlier, indigenous efforts in this field started only a few decades ago. Research activities are still to gather momentum in order to encompass the more and more complex dimensions of the problems. Therefore, only a very few Indian studies have been presented in the review, along with a few

foreign studies relevant to the present study.

1.8

Review of Related Studies

In order to understand the need and significance of the present study, research trends in the field of special education have been presented, as also the review of studies done so far which are relevant in the context of the present study. The research trends reveal the type of researches that have been conducted, and also the lacunae that need immediate attention. The presentation in this section follows the below given order :

- research trends in the field of special education in U.S. and Europe.
- review of related studies abroad.
- research trends in the field of special education in India.
- review of related studies in India.

In the case of reviews, those studies which have helped to identify certain variables in the system of education of the hearing impaired, and those which have facilitated the logical formulations of the present study have been considered. More studies and related literature have been cited at relevant places, in Chapter - III viz. A Model of Schooling for the Hearing Impaired.

1.8.1.

Research Trends in Special Education in U. S. and Europe

Research activities were very momentous in Europe and

America from the beginning of nineteenth century. Some of the discoveries of this period were individualized instruction, a carefully sequenced series of educational tasks, meticulous arrangement of the child's environment etc. There has been a steady growth ever since then. The areas which are being covered at present are, development of tools for identification and assessment, intervention strategies, development of instructional materials, effective counselling of parents, training of personnel etc.

1.8.2.

Review of Related Studies done Abroad

The U. S. and Europe are far more advanced in the field of special education as far as research activities and implementations of new findings are concerned. While most of the studies seem to be irrelevant and too ideal for Indian situations, a few studies that have helped in finalizing the methodological aspects have been briefly reviewed in the following sections :

The studies are categorized into

- Studies related to reading and understanding text.
- Studies related to mode of communication.

The following studies are related to reading and understanding text :

i) **Limbrick, Naughton, & Clay (1992)** studied time engaged in reading and the types of teacher interactions during

reading instruction in classrooms at a school for deaf in New Zealand. The sample consisted of 45 severely and profoundly deaf children aged 5-10 years. They found out that the teachers used meaning - based rather than a sequential model (which emphasises mastery over components of reading), in the reading instruction sessions. This model was in accordance with that need in schools for hearing children. Although time allocated for reading was consistent with that allocated in schools for hearing children, in none of the sessions observed was the time fully used. Time engaged in reading differed markedly among individual students. Similarly, considerable variation existed across classrooms. Most teacher interactions involved giving instructions, discussing the texts, or listening to the children's contributions. The analysis of classroom observations suggested that the deaf children did not engage in reading as much as children do in hearing classrooms. Case studies of 3 high and 3 low-progress children in the study supported the argument that more time spent in reading lead to greater reading achievement. The study also proved that time allocated to reading frequently became time spent on language correction and modeling.

ii) **Barbara S. Strassman (1992)** studied the metacognitive knowledge (Knowledge and control of an individual on the thinking and learning of self) about school-related reading of 29 prelingually, and profoundly deaf

adolescents. The results indicated that many of the participants were passive readers who used skill - based or school-task oriented schemata for reading. Furthermore, it was not clear that these adolescents had metacognitive knowledge about why they did what they did in school - related reading or what the long-term goal of reading in school was. Rather, they seemed to mechanically employ the techniques that they had been taught.

iii) **Carolyn Ewoldt, Neita Israelite and Ron Dodds (1992)** studied the ability of 8 boys and girls aged 13 - 17 from a large residential day school for the deaf, to understand text. All were prelingually deaf with a hearing loss greater than 85 db. 3 texts, adapted from commercially available materials that students were likely to encounter in school settings were used for the study.

Results : Familiarity with format and style, purpose for reading, and interpretation had an effect on the extent to which these readers were able to monitor and assess their own comprehension. Students attributed characteristics as - appealing to interests, emotions, or memories, being conducive to visual imagery, and meeting expectations for what a particular type of text is supposed to do and be, to texts that were easily recalled and considered to be of interest. Links to the text from the students' backgrounds were a strong factor. With regard to difficulty, the teachers' perceptions closely matched the students'. The strategies used by the students that aided in their own

comprehension of the texts were (i) re-reading the text (ii) using prior knowledge (iii) using picture cues (iv) continuing to read more text, (v) using the dictionary, (vi) reading slowly, and (vii) asking someone else to explain. What teachers thought students would know, made up a much short list. Neither deaf nor hearing teachers were very successful at predicting what the students would and would not know. Deaf students were far more proficient readers than teachers gave them credit for.

These studies have helped the investigator to formulate questions on reading in the questionnaire for students and teachers and also to add items in the classroom observation framework.

The following studies are related to mode of communication.

i) **Hyde and Power (1991)** studied the correspondence between spoken and signed English when used simultaneously by teachers in Australia to determine whether the difficulties reported with other systematic sign systems are also relevant for the Australian version. Four teachers trained in signed English, teaching in schools that catered to severely and profoundly hearing impaired, and where total communication philosophy (Speech and Signed English) was followed, were studied. The mean correspondence between the spoken and manual components of the teachers communication was 90.0%. Majority of the

deletions in signing involved pronouns, prepositions, and conjunctions. Faster speech rate did not seem to lead to an increase in the number of deletions in signing.

ii) **Hyde and Power (1992)** studied the receptive communication abilities of deaf students under oral, manual and combined methods. 30 students, all prelingually deaf, with atleast average IQ, attending three major schools for deaf students in an Australian state were studied. Eleven communication conditions were presented on the videotapes to provide the students with information that they could process - they were :

* Unimodally through :

  i) audition
  ii) lip reading
  iii) fingerspelling
  iv) signs

* Bimodally through :

  i) audition + lip reading
  ii) audition + finger spelling
  iii) audition + signs
  iv) lip reading + finger spelling

* Multimodally through :

  i) lip reading + audition + finger spelling
  ii) lip reading + audition + signs.

Testing Routine :

The testing involved using a practice item at the beginning of the booklets and providing feedback to ensure that students fully understand the procedure. No feedback was given during the sessions, in which students marked the picture in the booklet that they thought matched the

sentence item presented on the screen. The 30 students were tested in six groups of five with each group receiving a different sequence of presentation of the 11 communication conditions to control any differential sequential learning effects.

Results :

Significant differences were found between the two deaf groups, with the severely deaf group performing better under all communication conditions that did not involve signing. The only conditions under which the profoundly deaf students performed as well as their severely deaf peers were those that involved signing.

The above studies provide a lot of insight into the communication mode of hearing impaired students and teachers of these students although the infrastructural facilities of Indian schools have to be kept in mind while understanding such studies. These studies have been helpful in forming questions for students and teachers, and in making the observation framework, and also for analysing the data collected.

1.8.3.

Research Trends in Special Education in India

Research in Special Education in India is still at an infancy stage. It has remained in the backyard because of the fact that special education activities had been conducted outside

the mainstream of education for so long. The institutional infrastructure for research in this area has also remained quite inadequate. The present decade, however is full of promise for special education. It is during this decade that special education acquired its rightful place in the educational system, culminating in the recommendations in NPE 1986, and the Programme of Action. The Ministry of Welfare has established National Institutes for the Handicapped with an objective of promoting and guiding research.

The coverage of dimensions in research work is very limited due to the short history of researches in the field. Surveys, experimental studies, case studies, longitudinal studies, correlational studies and intervention studies covering aspects like identification, assessment, educational setting, educational programme, curriculum development, instructional management, instructional outcomes, support system and community involvement have been carried out so far.

The first doctoral research was conducted by Advani (1965) in the area of visual impairment. Fifty Seven studies (doctoral - institutional) have been recorded covering a span of three decades since then. Special education being a multidisciplinary area, studies have been conducted in different departments like education, psychology, sociology, economics and linguistics.

The yearwise distribution of researches in different disabilities, is presented in table No.4.

Table No. 4

YEARWISE & DISABILITYWISE DISTRIBUTION OF RESEARCHES :

YEAR	VI	HI	OH	MR	LD	GIFTED	MISC.
1965	1						
1968	1	1		1		1	
1969				1		2	
1970		1					
1973				2		3	
1974		1	2		1	1	
1975	2			1			
1977					1		
1978				5			
1979			1	2			
1981	2	1	4				
1982				1	1	1	1
1983			1			1	1
1984					1	2	
1985	2	1	2		1	1	2
1986	1	1	1	3			
1987	1	1		1			

IVth Survey of Research in Education.

VI Visually Impaired
HI Hearing Impaired
OH Orthopaedically Handicapped
MR Mentally Retarded
LD Learning Disabled

Across the disabilities, learning disability is the least researched area, followed by hearing disability. This imbalance has to be alleviated, as expressed in the trend report of researches in special education by Jangira and Mukhopadhyay (1991) in the IVth Survey of Research in Education.

1.8.4.

Review of Related Studies in India

Out of the documented studies in the area those that are found relevant to the present study have been reviewed in the following sections. (Table No.5).

The studies have been reviewed under the following heads :

- Characteristics of the impaired.
- Education of the impaired.
- Parents of the impaired.
- Organizational and financial aspects of institutions for the impaired.
- Educational and vocational needs of the impaired.
- Development of test of intelligence among the impaired.

Table No. 5

The Researches in India :

Category	Name	Year
1) Characteristics	1) Banerjee et al.,	1970
2) Education	2) Basavraj & Kumudavalli	1984
	3) Dharap	1986
	4) Veena & Gore	1983
	5) Rajguru	1981
	6) Sonal	1984
	7) Barr	1974
3) Parents	8) Lata	1985
	9) Padmaja & Pandya	1982, 1985
4) Facilities	10) Bala	1985
	11) NCERT - Educational Survey Unit	1968
	12) Rohidekar & Usha	1988
5) Test Development	13) Chatterjee, Mukherjee, Gupta	1987

The thirteenth study in the table No.5 of Chatterjee, Mukherjee & Gupta (1987), on test development is taken from Journal of the Indian Academy of Applied Psychology, 13(1), 1987, pp. 29-37. All the other studies are taken from the fourth

Survey of Research in Education (Buch, (Ed.), 1991).

- Studies pertaining to personality characteristics of the disabled :

i) **Banerjee et. al., (1970)** Studied the interest patterns of 62 boys and 38 girls in the age range of 14-18 years, who were deaf, by comparing with normal children. Significant difference was found in the interests of the 2 groups although the deaf children were born and brought up under similar environmental conditions as those of the normal children :

The above study on the characteristics of disabled students was helpful as it provided basic idea about the disabled, and have indirectly contributed in formulating the tools of the present study.

- Studies related to education of the disabled :

i) **Basavraj and Kumudavalli (1984)** hypothesised that teachers can identify 75% of the children with hearing impairment and will not raise false alarm for more than 10% cases. It was found that teachers show a high probability of missing the problems.

ii) **Dharap, (1986)** investigated the problems of the education of the mentally retarded children in the special schools of Maharashtra and some of the neighbouring states. The findings were that apart from anxiety of the parents of the children, they also had unrealistic expectations about

their children, there were misunderstandings between the teachers and the parents and that the society at large lacked awareness about the mentally retarded and the possibilities of rehabilitation of these children.

iii) **Veena and Gore (1983)** tried out a modified version of the comprehension assessment test in Kannada to compare the results on hearing impaired subjects 20 each from 5-6, 6-7, 7-8 and 8-9 years. They found significant difference in performance on the 2 versions of the test, being proper in case of modified version, and also that the difference was the highest in the 5-8 age groups.

iv) **Rajguru (1981)** Studied the knowledge of Gujarati grammar of 50 school going hearing impaired students, mostly of grades VIII,IX and X. He found out that normal children were better than the hearing impaired in the knowledge and use of the 5 grammatical categories included in the study and their error responses were more in the category of hearing impaired than among normal children.

v) **Bhuta Sonal J. (1984)** Studied a group of 82 hearing impaired students attending a special school, to find out child-related and family-related variables affecting educational performance. She found that age, sex, birth order, standard in which studying etc., as family-related variables affecting the educational performance of students.

vi) **Barr (1974)** studied auditory perceptual disorders in children with reference to language learning. His experimental group consisted of 30 children with language

problems and found out that syntactical complexity rather than auditory memory per se was the critical factor for correct sentence repetition.

The above studies pertaining to education of the disabled students have specifically helped to give shape to the observation framework for collecting data on the classroom activities in the different schools for the hearing impaired.

– Studies related to parents of the disabled children :

i) **Lata (1985)** studied the impact of parental attitude on social, emotional and educational adjustment of 75 normal and 75 handicapped students. She found out that the parental attitude did not differ for normal and handicapped students, that hearing impaired children showed a significant difference from the normal in adjustment-emotional, social and educational, and that parents' attitude did not affect the adjustment of normal students where as it affected the adjustment of handicapped girls and did not affect handicapped boys.

ii) **Padmaja (1982) and Pandya (1985)** studied the attitude of parents to their disabled children and found out that there is a need for developing a creative/supportive attitude in parents towards disability and also towards need for prevention of disability.

The above studies have been helpful in the present work in studying the perception of parents regarding the education and development of their children.

The following researches are concerned with facilities :

1) **Bala (1985)** carried out a comparative study of the mental make-up and the educational facilities for physically handicapped and normal children of age between 12 and 18 in Haryana state. Deaf, blind and orthopaedically handicapped children constituted the 500 strong sample. The findings were that there was significant difference between the normal, and the handicapped children as far as personality traits and values were concerned, and that all the handicapped were reserved, stiff, detached, emotionally less stable, submissive, serious, withdrawn, dependent, more shy and apprehensive, and that the facilities available in the institutions for handicapped children were quite inadequate as compared with those provided in the schools for normal children.

ii) **The Educational Survey Unit (NCERT, 1968)** Conducted a survey of the institutes for the physically handicapped - deaf-mute and dumb. The survey was taken up to study the institutions involved in educational and vocational training, and studied the organizational and financial aspects.

Following are the major findings :

i) Almost all schools (48 out of 68 were managed by private organizations getting aid from different agencies) gave some orientation programme at the pre-primary schools which was followed by a course of instruction in general education; in majority of the cases this course was

equivalent to primary school standard.

ii) 48 schools (out of 68 that responded) had group hearing aids, 12 had individual hearing aids and only 18 schools had audiometers.

iii) Private aided schools got 48% of their income through government aid and the balance was contributed by managements, donations and fees from the pupils.

This study provided a general idea of the schools studied, and was helpful in the present study, particularly with respect to analysis of data.

2) **Rohidekar and Usha (1988)** studied the educational and vocational needs of the physically handicapped children in Karnataka - blind, deaf and orthopaedically handicapped. Assessment of extent of school facilities and vocational training available, understanding the nature and extent of services by voluntary organizations working for the welfare of the physically handicapped, assessment of extent of the awareness of parents regarding facilities and incentives available for their wards, and identification of problems related to the educational and vocational needs of the physically handicapped children as perceived by different categories of individuals and agencies engaged in the welfare of the physically handicapped, all constitute the objectives of the study. 19 institutes were covered in the study.

The findings are as follows :

i) Integrated schools are not favoured. The respondents are in favour of special schools.

ii) As for subjects, the same syllabus as for the normal is suggested with additional subjects such as orientation and mobility training, braille, scripts, lip reading, auditory training etc.

It has been suggested that academic load especially in the case of deaf needs to be reduced with exemption in second and third languages but with compensatory work in additional crafts and such subjects as typing, music, photography, theatre work, etc.

iii) By and large residential schools are favoured, but a considerable number have suggested partially residential and day schools. iv) The teacher pupil ratio in special schools should not exceed 1 : 10.

v) Examinations should be more of practical work than theory and performance in actual work should be the criterion for promotion.

vi) The handicapped children need to be initiated into vocational training right from an early age during schooling days so as to give them adequate competence to be absorbed in handicrafts and in small scale industries.

This study has direct relevance to the present study ; with reference to the objectives and analysis of data.

- The following study pertains to development of test :

3) **S.Chatterjee, M. Mukherjee, and R. Gupta (1987)** developed

a non-verbal intelligence test for deaf children. Non-language Test of Intelligence, draw-a-man and Draw-a-Woman Test, Raven's Progressive Matrices were all used for the test development. They were administered on 334 hearing impaired children within the age range of 6-17 years belonging to Bombay, Calcutta, Delhi, Hyderabad, and Madras. To find out the applicability of the newly developed, non-verbal test over different age levels, children from different age groups were included in the sample. The conclusion was that on the whole, the non-verbal test seemed to be quite promising to serve the purpose for which it was developed and it was necessary next to develop norms of the tests for different age groups of the hearing impaired children so that these can be used to ascertain the intelligence level of a child.

This study throws light on the important point that hearing impaired children are at par with hearing children in intelligence, and that their difficulty is with verbal expression, and hence the relevance of non-verbal intelligence tests for these children.

1.8.5.

Overview of the Researches Reviewed

The areas covered by researches reviewed in the foregoing section are :

- Characteristics of the impaired.
- Teachers' identification of children with impairment.

- Problems of education of the impaired.
- Comparison of original and modified version of comprehension assessment test among hearing impaired children.
- Child and family related variables affecting educational performance.
- Auditory perceptual disorders and learning.
- Impact of parental attitude on social, emotional and educational adjustment of normal and hearing impaired.
- Attitudes of parents to the impaired children.
- Organizational and financial aspects of institutions for the impaired.
- Educational and Vocational needs of physically handicapped children.
- Development of non-verbal intelligence test.
- Time engaged in reading and type of teacher interactions in relation to reading ability.
- Metacognitive knowledge about school related reading.
- Ability to understand text.
- Correspondence between spoken and signed English.
- Receptive communicative abilities of deaf students under oral, manual and combined methods.

The important inferences that one can make from these reviews are :

- Most of the studies focus on specific aspects of the impaired taking a small sample of impaired persons.
- There are only few studies which bring out a profile of a

whole state - (Dharap 1986, Bala, 1985, Educational Survey Unit, NCERT, 1968, Rohidekar & Usha, 1988).

These inferences from the review of researches led the investigator to take up a macro level study of hearing impaired covering educational and vocational rehabilitative aspects, so that a profile of the state machinery serving the hearing impaired could be drawn, with a critique on the system along with suggestions to improve.

1.9.

Present Study

1.9.1.

The Conceptual Framework :

Equality in education has traditionally been equated with equality of opportunity, not equal outcomes for all, regardless of aptitude or prior learning. The reality of individual differences was expected to extend to the achievements of students, i.e., only a small percentage would learn to some mastery level and a certain percentage would fail with the rest in between the two limits. In other words, good learners would learn the complex and the abstract ideas in a school subject and poor learners would learn only the simplest and most concrete ideas. Thus learning ability has been regarded as a highly stable or permanent trait of the child. In this event, what gets equally distributed are the learning experiences, irrespective of the individual capacities and deficits, thus rendering 'equalizing educational opportunity' a meaningless rule of the game (**Sailaja**

and Sasidharan, 1991). It was assumed that the causes of success and failure in school learning lay outside the schools or the teacher's responsibility. Thus equality of opportunity was taken care of by which each individual was given the same learning conditions, but the differences in learning were attributed to the differences among the students in utilizing the given opportunity.

The more recent thesis, is that under appropriate learning conditions, students differ only in the rate at which they can learn and not in the level to which they can achieve or in their basic capacity to learn. Studies have shown that

"as many as ninety percent of the students can learn the school subjects upto the same standard that only the top ten percent of students have been learning under usual conditions."

(Bloom, 71)

Special learning conditions have been understood which are conducive to bringing learning and rate of learning more or less to be at same level from student to student. These conditions include developing suitable instructional methods to suit the needs of each child, providing enough time for each child to learn at his/her speed, simplifying the content to make things clearer etc.

"That is, there is growing evidence that much of what we have termed as individual differences in school learning is the effect of particular school conditions rather than of basic differences in the capacities of our students".

(Bloom, 71)

In the case of disabled children, there is an added dimension of individual difference, namely the degree of

impairment, and the resultant problems. The general practice in special education is to operate on a deficit model, that is, to identify something as wrong or missing in the student. When a student has a learning or behaviour deficit, the current model conduces towards finding a cause in terms of an impairment of the child. The new conceptualization frames the problem in a different context. It sees the problem as the result of a mismatch between learner needs and instructional or management systems, and,

> "therefore will see child not as a disabled person, but as a learner whose potential is being thwarted by the educational mismatch".
>
> **(Gartner & Lipsky, 1990)**

The central thesis is, every child is special, demanding special attention. In order to help him/her develop to the maximum extent possible, the provisions with respect to teaching - learning, have all to be carefully and painstakingly chosen; and effectively used.

Institutions for the handicapped children are set up with the goals of facilitating the development of the children to the maximum extent possible. In order to achieve this goal, the thesis of special needs and matching the provisions in the institutions with these special needs has to be adhered to. It is on the basis of this stand point that the present study attempts to assess the educational institutions and vocational rehabilitative institutions for the hearing impaired in the state of Gujarat.

1.9.2.

Need and Significance of the Study

A comprehensive picture of the system of rehabilitation of hearing impaired of any state does not emerge from most of the studies done so far. There has not been sufficient effort to answer fundamental questions like :

- is the system of education for hearing impaired achieving its goals ?
- is the vocational training for this section functioning satisfactorily ?
- to what extent are the co-ordination and co-operation of the two mutually supportive organizations - (educational and vocational) effective in helping the children in rehabilitative endeavours ?
- how are the teachers for the hearing impaired trained ? and to what extent are the teacher preparation programmes effective in achieving their goals ?
- to what extent are the parents aware of the possibilities of education of hearing impaired ?
- at what age are the children generally enrolled in schools?
- what is the retention and drop-out rate in the schools?
- how many complete school education and how many gain economic independence ?
- if there are problems hampering the progress of the systems of educational and vocational rehabilitation, what are they ?

In short, educational and vocational rehabilitation systems have not been monitored. Evaluation and monitoring are essential tools for identification of weaknesses and strengths of any system, and to evolve means to redesign the programme. This is very relevant in the case of systems for hearing impaired.

Moreover, in order to build up sound information system at national level, data base is the basic requirement. It is only when the system of rehabilitation of the hearing impaired be studied can such data base be built up, and it is only from comprehensive and exhaustive data base that identification of specific areas which need to be researched into, be carried out. The need for data base studies has been voiced through PoA'86 -

"Research in education of the handicapped in the Indian socio-cultural milieu is to be taken up immediately by NCERT, ICSSR and UGC and the National Institutes should promote research. The data base regarding education of the handicapped is very weak. Steps will be taken for strengthening the information system."

It is quite evident from the review of studies in India that compared to other areas, area of hearing impairment has only few studies.

"It goes without saying that the number of studies in hearing impairment is really very small as compared to studies in mental retardation, physical impairment, and visual impairment...."

(Jangira, 1986).

In the light of the above arguments the investigator ventured to take up a macro level study of the system of educational and vocational rehabilitation for the hearing

impaired in the state of Gujarat.

In order to critically assess the educational and vocational rehabilitative system for the hearing impaired in Gujarat, a logical model was developed by the investigator which served as the reference point.

1.9.3.

Statement of the Study

Critical Appraisal of Structural and Functional Aspects of Organizations for Hearing Impaired in Gujarat.

1.9.3.1.

Explanation of the Terms

Structural aspects :— Background of the schools with the human and material resources, are included under structural aspects.

Functional Aspects :- The processes that are geared to achieve to the objectives are included under functional aspects.

Organizations :- The special schools for the hearing impaired of Gujarat form the main focus of the study included under organizations. Teacher Education Centres (TEC-s) of teachers of the hearing impaired and the Vocational Rehabilitation Centres (VRC-s) of the state are aslo studied, from the perspective of the schools i.e as supportive organizations, working in an integrated fashion for the development of the hearing impaired. Thus under organizations are included both educational institutions and vocational rehabilitative institutions.

Critical Appraisal :- The educational and vocational institutions have been critically appraised on the basis of a logical model conceived and evolved by the investigator

(explained in detail in Chapter II and III).

Hearing Impaired :- This phrase refers to those students who have problem in hearing and hence study in special schools for the hearing impaired. (The word 'deaf' has been used in the text as a synonymn to 'hearing impaired'.

1.9.4.

Objectives of the Study

1. To evolve a model of schooling for the hearing impaired.
2. To evolve interpretative discussions on the structural and functional aspects of the schools for hearing impaired in Gujarat.
3. To critically assess the adequacy of supportive institutions viz. Teacher Education Institutions, and the Vocational Rehabilitation Centres.

1.9.4.1.

Elaboration of the Objectives

Objective I

The model of schooling was evolved from reviews of research, theoretical formulations, modus operandi of effective institutions of the country, and from discussions with academicians and practitioners in the field.

Objective II

Structural aspects of the schools studied ie. background and resources available, both material and human :

1. Management
2. Syllabus
3. Strength of the school
4. Background of the students
5. Standards offered
6. Levels of Vocational Training offered
7. Staff Composition.
    a) Teaching Staff.
    b) Special Assistants
    c) Consultants.
8) Teacher-pupil Ratio.
9) Figures of Enrolment and Dropout
10) Financial Resources.
11) Building
    a) School
    b) Hostel
12) Equipments
    a) Audiometer
    b) Personal Hearing Aids
    c) Group Hearing Aids
    d) Speech Trainers
    e) Loop Conduction System.
13) Teaching Aids

Functional aspects of the schools studied were as follows :--

1) Admission procedure
2) Assessment of hearing sensitivity.
3) Guidance and counselling of
    a) students.

b) Parents

4) Vocational training

5) Hostel functioning

6) Instruction **

a) use and monitoring of hearing aids.

b) development of communication skills.

c) teaching of language

d) general aspects of teaching (Common to all subjects)

8) SSC Programme

9) Mainstreaming

** Instruction was studied with focus on language as this forms the pivot of the education of the hearing impaired.

Objective III

i) Functioning of Teacher Education Centres was studied with reference to :--

a) theory and practice inputs included in the course.

b) perceptions of the trained teachers working in the schools regarding the adequacy of the course.

c) perceptions of the teacher educators of the centres.

d) perceptions of the teacher trainees of the centres, regarding the course.

e) inferences drawn by the investigator regarding the method of teaching from observations of teaching.

ii) The Vocational Rehabilitation Centres was studied to see how far they were supportive to the school system i.e. to what extent these centres were able to provide vocational

training and employment to the hearing impaired who get educated in the schools of the state. On this premise, the functioning of VRC-s was studied with reference to :-

a) strategies to encourage enrolment of students from schools

b) guidance and counselling carried out in schools by the VRC-personnel to encourage enrolment.

c) strategies to prevent drop-out of students.

d) percentage of enrolment and rehabilitation of school students.

1.10.

Chapterization

The detailed account of how the study was carried out, including the sample, population, development of tools, data collection and mode of analysis has been presented in chapter two : Methodology. Chapter three presents the model of schooling for the hearing impaired, which forms objective number one of the study. Chapter four : Analysis and Interpretative Discussions includes analysis of findings regarding the school for the hearing impaired, teacher education centres and vocational rehabilitation centres of Gujarat, along with their interpretative discussions. Formulation of the study, conceptual framework, review of related studies, methodological details, and major findings with a few suggestions have been presented in the last chapter - chapter five : Summary.