

## CHAPTER THREE

## CHAPTER THREE : A MODEL OF SCHOOLING FOR THE HEARING IMPAIRED-

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## A MODEL OF SCHOOLING FOR THE HEARING IMPAIRED

The well established theory of individual differences says that every child is special, which has a significant implication in education viz. instruction has to be geared according to the needs of each child for his/her optimum development. Individual differences, traditionally used to justify the differences in academic achievement, are presently conceived to be the effect of particular school conditions, rather than of basic differences in the capacities of our students.

This principle can be extended to children with disabilities, who have added differences pertaining to degree of disability, and the emerging problems. The general practice in their education is to identify something as missing or wrong in the student. A new conceptualization in the field is that a disabled child be seen as a learner whose potential is being thwarted by the educational mismatch, and considers a handicap as a social construct resulting from this mismatch.

Based on this theoretical premise, and silhouetted against the background of the challenges faced by India in meeting the educational requirements of disabled children, arose the queries regarding the dumbness of the hearing impaired in Gujarat. The flip outs from theses queries were two lines of thought: of overcoming dumbness and of providing an ideal but realistic system of education to the deaf; and to the study the system in practice in order to see the degree of divergence

from the ideal system.

Stemming from this perspective, the first major concern of the study has been the development of a model of schooling for the hearing impaired, built up on the past events that catalysed the historical developments of deaf education.

The central goal of education of the hearing impaired, as conceived in the model, is of facilitating their meaningful participation in the hearing world. The modalities of 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.

The sources for developing the model had been the *modus operandi* of a few of the effective institutions of the country, documented literature and outcomes of discussions with experts in the field.

The institutes visited by the investigator were Helen Keller School for the Deaf - Mysore, Little Flower Convent for the Deaf - Madras, Shruti School for the Deaf - Bombay, Akshar School for the Hearing Impaired - Baroda, C S I School for the Deaf - Kerala and St. Locies Convent for the Deaf - Madras. Different aspects of functioning of these schools were incorporated into the model. Discussion with experts was a continuous process which helped in giving final shape to the model.

The hearing impaired and their special demands stemming

from their deficient hearing was the central focus while developing the model. During the process of data collection the model did get revised in certain subtle ways to get finetuned according to the constraints and inevitabilities of the reality, these modifications not affecting the basic principles which formed the foundation of the model.

Two important facts that were not considered while developing the model were, India's economic status and the embryonic stage of development of special education in India. Keeping hearing impaired and the special demands arising from their problem in hearing as the pivotal concentration, the model was developed overlooking the constraints in the country.

This was because, education of the hearing impaired is a costly affair with its very essential paraphernalia of special equipments and services of specially trained personnel, due to which compromising on the grounds of funds would be a rather unpardonable injustice to the hearing impaired.

Another delimitation of the model which was realized during the field work was that it was not formulated from the perspective of any particular class. It was addressed to the hearing impaired in general, irrespective of which class of the society the students belonged to. During the study, it was realized that 90% of the students of the schools came from low income groups of society and that education of their hearing impaired children did not find importance in their priorities, which rendered a few principles of the model redundant in their

context like effective parent-child interactions and parent - teacher interaction. Nonetheless, these aspects were not removed from the model as they are basically significant for development of a hearing impaired child.

In the model the goals of education of the hearing impaired have been presented first with subsequent presentation of the general principles of education of the hearing impaired. The principles of the model have been substantiated by research reviews wherever possible, or have been supported by logical arguments. The researches and related literature cited in this chapter are apart from those presented in the review of related studies included in Chapter - I.

### 3.1.

#### The Perspective

Theory of individual differences is well established in the field of education and psychology which says that every child is special, that instruction has to be geared according to the needs of each child for his/her optimum development, and that uniform learning experiences for all cannot be a means to ensure success for all.

In the case of children with impairments individual differences assume greater dimensions as differences with reference to their impairment add upto the differences.

The concept of individual differences, and the one most commonly used is **inter - individual difference** that is, the



differences between people - the variability among and between members of a group. Another concept of individual difference, the one dominant in special education is the concept of **intra-individual differences**, namely the differences in the abilities within a particular child. To a teacher it is more important to know a child's unique pattern of assets and deficits than to know how those average out in comparison with other children. The teacher needs to know how to organize a programme for that particular child, what his/her discrepancies in development are, what the child can do and what is difficult for him to do, whether the child reads at the first standard level and does arithmetic at a higher level, showing a discrepancy in achievement, etc. Such a close assessment guides the teacher to organize an instructional programme of a particular child in conformity with abilities and disabilities, without regard to how he or she compares with other children.

The perspective in the model is that an impaired child becomes handicapped due to the societal response to it i.e. handicap is a social construct, created and built by an attitudinal environment. For example, the hearing impaired child is rendered handicapped if his school does not help him to get used to wearing hearing aid and to listen and perceive sound.

Thus, "instead of identifying something as wrong or missing in the student and conducing towards finding causes in terms of an impairment, the problem is seen as being a mismatch between the learner needs and instructional systems, and therefore the child is seen not as a disabled but as a learner whose potential is being thwarted by the educational mismatch".

**(Gartner and Lipsky,1990)**

Precisely, the model is based on the central thesis that every child is special, and that the most suitable learning environment and the most suitable teacher - learner interaction-strategies are to be decided from the vantage point of the learner.

Language and communication being the areas of development severely affected, due to the vital problem of deficient auditory pathway, these are the areas focussed mainly in the model.

The model does not provide prescriptions for teaching per se. Only broad outlines are presented, with basic principles underlying these broad outlines, substantiated by documented literature wherever relevant.

### **3.2.**

#### **Goals of Education of the Hearing Impaired**

The model has been developed from the basic goals of education of the hearing impaired. The goals of education for hearing impaired children should essentially be the same as those for all children namely, to enlarge their vistas of knowledge, experience, imagination, understanding and their awareness of moral values and capacity for enjoyment; and to equip them to be

active participants in and be responsible contributors to society while becoming as self-reliant as possible. In the case of hearing impaired, all the above goals are subsumed in the basic goal of integrating them into the hearing society.

Any deviation from the principle of integrating the hearing impaired into the hearing society implies the existence or formation of a deaf sub-culture with all its undesirable ramifications. Moreover, when anything less than normal participation in the hearing world is conceived as the ultimate goal, the hearing impaired are weighed down with limitations.

"It is never easy to be a hearing impaired person in a normal hearing world. The child with a hearing loss does not have to feel that he has to be the same as a normal hearing child. He cannot be, but neither does his whole life have to be circumscribed and restricted by his hearing loss. It should be the aim of education to raise his expectation level and provide a choice".

(Pollack, 1985)

From the above mentioned goal stems the demand of establishment of an easy and fluent system of communication in order that relationships with fellow human beings can be as rich as possible leading to establishment of a language foundation on which secondary language systems of reading and writing can be developed. Fluent system of communication includes receptive and expressive language skills i.e. hearing and perception of spoken language; and speech intelligibility.

The specific goals of education of hearing impaired, (apart from those for regular children) drawn from the above

principles are, that all children should develop skill of comprehension of spoken language, and speech intelligibility, and should be prepared for higher education in the mainstream, all should be trained in atleast one vocation so that the students have options of higher education, advanced vocational training, or directly settling down with a vocation, to choose from; all should develop good mental health i.e. social and emotional adjustment and positive self concept to face the world, despite their hearing problem.

### 3.3.

#### **Basic Approach to Communication.**

From the earliest days of deaf education there has been controversy over which method of communication -- 'manual' or 'oral' -- is best suited to the deaf. The debate between the two sides, 'manualists' and 'oralists' not only persists but is being argued with renewed vigour even today. The basic question underlying the issue is : given that a substantial hearing loss represents a serious and permanent handicap for deaf individuals when communicating in spoken language, should deaf children from an early age be given the right to communicate in a language in which they are, arguably, not impaired, that is, sign language ? Or should every effort be made to enable the deaf child to communicate in the language which is dominant in the wider society ? Or should they be exposed and trained in a method which involves the use of all modalities -- sign language, finger spelling, amplified sound, speech, lip reading, reading and

writing, facial expression, mime and gesture ? The stance taken by a particular theorist is determined by the goal of education of the hearing impaired as conceived by him/her and empirical possibilities.

The manualists advocate the use of sign language because deaf children, as they argue, should be allowed to learn language in a way that is easiest for them. According to them, beyond a certain level of hearing loss, a deaf child cannot attain anything like normal standards of spoken language and comprehension, speech will be grossly distorted and his/her visual clues fleeting, ambiguous, and difficult to interpret. The appropriate language for the deaf children, therefore, is the visually unambiguous language of signs. Through sign language, the deaf child can acquire a reasonable lexicon and structure of language during the crucial years of language acquisition and a means of communication appropriate to his/her age stage. Furthermore, it is claimed that through sign language, deaf children can acquire information about the world they inhabit with ease and rapidly whereas with an oral-only approach, the acquisition of language is slow and laboured.

Oralists claim that sufficient evidence has accumulated to justify and sustain considerable optimism over the capability of even very deaf children to develop a fluency of spoken language which allows them to live comfortably and efficiently in hearing society. In the past, conditions were not so favourable (which is the major reason for the empirical finding that oral method was not that successful) as they are today, to the oral

success of the profoundly deaf child. As a consequence of such things as late diagnosis, inadequate hearing aids and absence of pre-school services, teaching based on 'incorrect' assumptions of the way in which children develop language, some deaf children had to leave school not only unable to speak intelligibly or to understand speech of others but also without having achieved basic literacy. Oralists generally do not deny that sign language in many situations provides an effective means of communication. But they question the capacity of sign language to perform all educational functions that can be achieved by a conventional language. Sign language is used by a restricted number of people in a restricted range of social contexts. They argue that if deaf children are to develop spoken language effectively, it is important that their residual hearing is exploited to the full from the earliest stage. This does not mean that visual cues are insignificant. Where hearing impairment exists the auditory sense will be supported by visual communication, such as facial expression, lip movements and normal gesturing. Oralists believe, however, that the deaf child should not be directed to the extra visual information that would be provided by a separate and distinct visual mode of communication such as sign language. According to them, the early and continued use of sign language interferes with the deaf child's ability to make progress with spoken language.

A third approach, what is called 'total communication', combines manual and oral techniques. It is claimed that a deaf child can make use of all his sensory mechanisms to

develop language and to acquire a means of communication. Total communication makes use of residual hearing through whatever hearing aids are available, but the highly visual language of signs can reinforce and clarify the minimal clues available through lip reading and audition. Total communication, it is claimed, is thus multi-dimensional, with each dimension enhancing, reinforcing and enriching the others and exploits every aspect of a child's communication ability.

Manualism was the preferred method until the middle of the nineteenth century, when oralism started to gain popularity. Oralism then predominated until the late 1960s and early 1970s, when the total communication approach gradually gained prominence. The major reason for such a shift especially in USA was the publication of the Babbidge Report in the USA in 1964 and the Lewis Report in England and Wales in 1968 which reported persistently low educational and spoken language attainments amongst the deaf school population. The survey undertaken by Gallaudet College in 1982-83 (Cited by Lynas et al, 1988) indicated that sign language was used in the education of 87% of profoundly deaf children. This compares with the situation in the 1960s when the majority of the deaf children were on oral-only programmes. This change in approach undoubtedly reflects a well-intentioned effort to improve standards in deaf education. But, unfortunately, the educational attainments of U.S. deaf children have not risen. The Gallaudet College Survey reported on the reading attainments of 55,000 deaf children and revealed not only no improvement in reading standards but rather a

significant decline in the 20 years or so since the publication of Babbidge Report. Lynas, et al (1988) also cites several other studies which showed that significant numbers of deaf children taught in total communication programmes, achieved 'Lamentably' low standards of expressive language in every modality, low standards of speech intelligibility, and even inadequate standards of manual and simultaneous communication. As a result of the realizations regarding the problems and limitations of both manual and total communication approaches, and also due to the advancements in knowledge and facilities in early identification and assessment, and in teaching methodology, researchers, have started rethinking about the possibilities of adopting oral approach.

One of the fundamental problems regarding oral option is whether or not all deaf children, however deaf, can in principle and practice, be taught to talk and understand speech. Are there, in other words, deaf children who, no matter how powerful their hearing aids or no matter how enriched their spoken language environment, will inevitably fail to develop oral language and communication ? Recent empirical evidences do suggest that this need not be the case. For instance, the Greater Manchester Study (1985, cited by Lynas et al, 1988) suggests that even extremely deaf children can develop oral language. It is certainly true that deaf children vary in their rate of progress of oral language. Even the slowest deaf child was using meaningful vocal communication by the end of the period of the study, which clearly suggests that it would be extremely



unwise to 'write off' a deaf child as incapable of developing oral language even though progress is slow. Hence, oral success is a realistic goal for all deaf children.

Is sign language more natural, as some theorists argue, for deaf children? To start with, unconventional gestures of deaf children should not be confused with a conventional sign language. Further, as van Uden (1977) observes, hearing as well as deaf children switch over from mainly gesturing to mainly verbal behaviour at some time in their childhood, provided they are exposed to a speaking environment and are provided with sufficient oral help.

It has been argued by some advocates of signing that if residual hearing is not exploited to the full during the early years, then a deaf child cannot at a later stage develop oral language: the critical years for the oral development have been missed. Such a child must be offered a readily accessible form of communication, and this, according to some, ought to be sign language. But there is evidence to suggest that the early years, though very important, may not be as 'critical' as is often thought. There is documentary evidence from U.K. of deaf children, late diagnosed and 'silent' at the age of five years, who by the age of ten were communicating comfortably in spoken language (Clark, 1985, cited by Lynas et al, 1988). Studies generally show that while early detection offers the deaf child the best opportunity for minimising the adverse effects of a severe hearing impairment, late detection need not preclude the development of spoken language at a later stage.

If a deaf child is to develop spoken language during the early years, it is important that the child's hearing is stimulated. It follows that, during the early years, the focus should be on oral training, rather than sign language. Further, the acquisition of a sign language has little value as a preparation for formal schooling and that

"there is no evidence that learning a sign language, of itself, offers the developing deaf child the best opportunity of acquiring language"

(Lynas et al, 1988)

Research evidence on the educational attainments of deaf children provides support for the oral option. The many, mostly American studies, which have investigated the effects of communication methods on the educational achievements of deaf children, all indicate that deaf children taught by consistently oral-only methods achieve superior attainments to those taught by manual-visual/total communication approaches (Lynas et al, 1988). The study of Pintner et al, conducted as early as in 1918, indicated that oral deaf student out-performed manual deaf students on all measures of attainment and that the superiority was marked at the upper ages, that is, after the age of 14 years. Much more recently, Geers, Moog and Schick (1984) used a language test designed to evaluate the correctness of the grammatical utterances for comparing the attainments of 327 deaf children from 15 total communication programmes and 13 oral communication programmes. The finding of superiority of orally taught children strongly challenges the assertion made by total

communication advocates that total communication hastens the deaf child's language development.

Markides (1976, cited by van Uden, 1977) compared 5 classes of a combined school (where both signs and speech were used) with 5 classes of an oral school, both groups of 30 adolescents matched according to prelingual hearing loss, intelligence and learning ability, to period of education, and to the expertise of their teachers. He found that the combined group was lagging behind the oral group in the written vocabulary, composition work, and the intelligibility of spontaneous speech. He also observed that the communication in the combined class was slow and laboured in comparison to the natural pace in the oral classes. In U.K., Huntington and Watton (1984), studied the language patterns of 134 very impaired children. Significantly, it was those children exposed to the oral-auditory approach who generated longer sentences, used more complex and extended languages than those who adopted some form of total communication.

Oral-auditory approach is found to be superior not only to the immediate language acquisition; but it also helps for achieving a successful future life. Ogden, for instance, who studied in retrospect, 637 ex-pupils of three oral schools of U.S.A., found that in comparison with national data for normally hearing people, a higher percentage of his subjects were in professional and managerial occupations. Approximately 31% of them had completed at least four years of college education which is again above the national average for the hearing population.

The respondents attributed their success to their development of oral English resulting in good communication language skills. Ogden (1979, cited by Lynas et al, 1988) concluded that :

"Orally trained children achieve high levels of educational and vocational success and participate substantially in general society."

Empirical evidence, in general, offers firm support for an oral-only approach in the education of deaf children. Total communication approach, which has more common-sense appeal, seems to depress rather than raise academic and linguistic attainments. More researchers are arriving at the view that presenting two different forms of language, oral and manual, is beyond the capacity of the human brain and, therefore, intrinsically unmanageable. To speak an utterance and at the same time produce on one's hands the corresponding signs with the correct tense markers, inflections and finger spelt words is just too difficult and complex a process for any one to do effectively and logically results in what is known as 'cognitive overload.' Lynas et al (1988) cites several studies which clearly indicate that deaf children cannot process speech, lip movements and signs all at the same time. Hence, the meaningful decision would be to choose oral approach instead of total communication.

When we consider integration into hearing society as the goal of educating hearing impaired, the option of sign language is highly inadequate. Sign language limits the scope of larger societal interactions. Along with this major drawback, there are several other limitations: There is no universal sign

language ; it has less number of words than a conventional language ; there are strictly no parts of speech in sign language (Stokoe, 1972); each sign is an aspect of its own meaning with too little relation to other signs or words ; signs require a special temporal order which is not congruent to that of words ; there is no way of showing emphasis through sign language other than by putting the word to be emphasised into the first position; in general, due to limited number of signs, many omissions occur during communication using sign language, etc.

It follows naturally from the above discussion that the oral - auditory approach is the most meaningful option for educating the hearing impaired children. The oral approach is realistic, feasible and the option most likely to promote linguistic development. For optimal effectiveness of the approach, the impairment should be detected early; an appropriate hearing aid should be used from an early stage; and, of course, oral-only approach should be followed from infancy onwards. The investigator shares the position taken by van Uden, Lynas and many others, and strongly advocates the use of an oral-only approach in the model for the education of the hearing impaired. The principle is that there can be no compromise because, once emphasis is placed upon visual cues, there will be divided attention, and vision, the unimpaired modality, will be victorious.

### 3.4.

#### Basic Structure of Education

"Conceptionally, the deaf child's development corresponds to the stages outlined by Piaget for hearing children (Furth, 1966). The level of the child's language development will however influence his access to the body of knowledge recorded in the written world and his facility in stringing ideas together to form complex information systems (Chomsky, 1967). The teaching of language therefore should be one of the major priorities in the education of the hearing impaired".

(Becker, 1981)

When a hearing child enters school (1st standard) at 6 years of age, it is generally assumed by their teachers that they have had a rich background of heard and spoken language as the foundation on which the world of books can be introduced on them, imparting knowledge through the medium of printed world. By 6 years, the average child comprehends more than 2500 words, has a spoken vocabulary of nearly the same extent, speaks in complete sentences using all the parts of speech. On the other hand, the extent of language facility, both comprehension and expression, will be dependent on a number of factors; the severity of the hearing impairment the hearing opportunities already had, and the use of hearing aids. For many, language constitutes at best a basic gesture system that has been developed as the only means of communication within home.

It is this basic difference between hearing and hearing impaired in the levels of language facility at the time of admission to school, that demands a revision in the basic structure of education.

In order to reach up with the language skills and vocabulary of hearing child gained before joining school, the hearing impaired should have a longer pre-school period of 5 years before they start the regular syllabus of the hearing children. What is important is that they should be brought at par with the hearing children after Xth standard even if it demands spending more number of years. Thus a hearing impaired should be 3-4 years (completed) when she/he joins school but not older, so that she/he can start the regular syllabus by 8-9 years of age. Upon this basic firm grounding should the 10 years of education be built up, as in the regular schools, with objective of preparing them for mainstreaming after the 10 years.

### **3.5.**

#### **Curriculum**

The objective of education being integration into the hearing society, the curriculum should logically be the same as that followed in the regular schools. But the inadequate language exposure in the period of early stages of development, prior to school intervention, has to be compensated for, in order to bring the hearing impaired children at par with the hearing children, who already have a vocabulary of roughly 2500 words, understands spoken language, and speaks intelligibly before they join school. The plight of hearing impaired children when they seek admission to a school generally is that they would be almost silent with at the most a few sounds that make no sense, would be not in a position to understand anything spoken to them nor able to express anything. It is this plight

of the hearing impaired that necessitates a special curriculum to bring them to a level comparable to that of hearing children before they start the regular course of the hearing children.

It flows out from the foregoing discussion that the goal of a specially formulated pre-school curriculum for the hearing impaired should be development of speech comprehension and ability to speak, and vocabulary comparable to that of hearing children, all of which are acquired by the hearing children during the initial years of development through communication with people around him/her in a very natural, unconscious way.

#### **Broad Outline of a Special Pre-School Curriculum**

The curriculum proposed in the model is to closely follow the way the hearing children learn communication skills and language - initially being exposed to auditory stimuli in the environment when being spoken to and also by overhearing others talking, to be followed by getting initiated into more and more complicated structures. Thus, the first year is to be devoted entirely to providing a field of speech and sound to the child not forcing him/her to speak although he/she should be positively reinforced if any attempt to speak is shown.

The second year should be devoted to speech training and auditory training which should progressively be developed in the third year.

Reading and writing are to be introduced in the



4th year (roughly equivalent to the KG I of the regular schools, when reading and writing are also introduced). During the 4th year along with language development through speech training and auditory training, basic arithmetic should be introduced like the course of KG classes. 5th year course should be only a continuation of the 4th year without any additional course.

Language development, especially in pre-school education should be facilitated through meaningful experiences well knitted into the curriculum, to avoid any decontextualization of language.

Details of auditory training and speech training are given in the relevant section as the model is presented.

The underlying principle of curriculum of the hearing impaired, all through the school education is that auditory training and speech training be teaching methods that cut across all subjects, especially language ; and that visual experiences be an integral part to compensate for the deficient auditory function.

### **3.5.1.**

#### **The Necessary Conditions for Oral Education**

In all the literature regarding oral mode of education, there are a few conditions which are nearly taken for granted in the West, which are still fresh lessons to be learnt in Indian

context. These are :--

- o early detection of the hearing problem and diagnosis.
- o assessment to rule out any impairment other than hearing loss.
- o adequate intervention as soon as the hearing deficiency is assessed which includes :--
  1. Schooling to start latest by 4 years of age.
  2. Fitting of appropriate hearing aids and training to use them continuously and regularly throughout the working hours.
  3. exposure to auditory stimuli as soon as pre-school education starts.
  4. speech training to start after adequate auditory training.

These principles are discussed in the following sections supported with relevant research studies wherever applicable.

Among these the first condition of early detection and diagnosis that the child is hearing impaired, is the responsibility of the parents, and remains by and large out of the responsibilities of the school system. Early detection depends a great deal on the awareness of parents about the possibility of such a problem with hearing, and their sensitivity to their child's responses. Orientation to parents in terms of such awareness and sensitivity can be a part of state sponsored

rural and urban development schemes. This being outside the purview of the school system is not discussed in the present model.

### 3.5.1.1.

#### Early Intervention

In this section, only early intervention is discussed with supportive research studies. As has been mentioned in the previous paragraph, early detection and diagnosis being outside the purview of the school system has not been discussed here.

The major principle for education of the hearing impaired is that primary language acquisition occurs during the early years (2-5) and hence adequate intervention strategies have to be started during the sensitive period of 2 to 5 years of age of a child.

"Functional capability of certain neurons involved in auditory sense pathway is greatest in the early phases of maturation, but diminishes progressively during later stages of ontogeny (Jacobson, 1975). Studies on effects of maturation on neuronal plasticity (specilization for and localization of, specific neurological functions in the central nervous system) suggest that during the critical period, the neurons subserving linguistic functions undergo progressive loss of plasticity, atleast through adolescence (Milner, 1976; Selinger, 1978)"

(Ling, 1976)

These findings support the urgency of intervention in the case of hearing impaired before the natural neuronal plasticity of the system hardens, and before the aberrant communication system develops such inertia that all training in the world will not change it significantly.

"Primary language acquisition in many hearing impaired individuals generally appears to be suppressed to the point where native like proficiency in English, if not achieved in childhood. (Bochner, 1982 ; Lenneberg, (1967). The studies by Brown, (1973); Dale, (1976); Gleitman & Wanner, (1982) ; Maratsos,

(1983), all pointed to the interval from birth to about 5 years of age as period of exceptionally rapid language development in which a large portion of primary acquisition occurs, especially between the ages of 2 and 5."

**(Bochner & Albertini, 1988)**

Language cannot be learnt in the absence of language input which is true in the case of a hearing child as well. Hence it is imperative that a hearing impaired child has to be exposed to maximum possible language inputs during the critical period of 2-5 years of primary language acquisition. This brings us to pre-education programme.

By the age of 3-4 years the child should start pre-school programme of a special school for hearing impaired. The foremost step to be taken is assessment of hearing sensitivity. (See appendix No.2 for details of assessment). This has a significant implication that schools should be strict regarding upper age limit of 3-4 years, as a criterion for admission to pre-school programme. It is also important to include the clause that the hearing impaired child does not suffer from any other impairment.

#### **3.5.1.2.**

##### **Assessment of Hearing Sensitivity**

"Puretone audiometry (see appendix No.2) commonly used, depends on reactions of the subject, to the test, although consistent results in serial tests on the same subject. The method obviously depends on the subject's ability to understand what is required of him, and hence children need a number of sittings (2 to 5) to get used to the instruction and mode of testing. Moreover, it is difficult for a child to concentrate for long on the test, but responses to a few frequencies of sound can be obtained and the whole audiogram can be slowly built up with subsequent sessions. Hence a thorough assessment spread out over a few sessions (2 to 5) is required to assess the

hearing sensitivity of each child".

(Whettnall and Fry, 1971).

### 3.5.1.3.

#### Audiogram

Audiogram is a graphic representation of the hearing sensitivity of a child (see appendix No.2.1) for samples of audiograms). An audiogram is useful in indicating the approximate frequency range over which a child's responses to sounds are present and the minimal level at which the sounds of speech must be presented, in order for them to be audible. This is a useful basis for deciding on the hearing aid to be used by the child. Audibility though is necessary a condition for speech reception, is not sufficient a criterion for comprehension of what is spoken.

"The audiogram indicates the dividing line between hearing and not hearing. It does not help to deduce a child's ability to distinguish one frequency from another, to judge one sound as louder or quieter than another, nor does it indicate a child's level of tolerance for amplified sound. For these (and many others) it is possible for several children with identical pure tone audiograms to differ greatly in ability to use residual hearing and to discriminate speech. Even after repeated testing that labels the children as profoundly deaf, children could be found to be better at hearing when tested later. Thus functional deafness need not be a corollary to audiometric deafness and labelling the children as 'deaf' on the basis of audiogram is baseless".

(Sanders, 1976)

Audiogram is thus most useful as a guide to decide how powerful a hearing aid will be needed by a child. It is useful as a reference for teachers as it gives a general orientation to

them regarding the hearing sensitivity of the child. But it is to be understood that personal attention and familiarity in dealing with the child can inform the teachers regarding more specific aspects of sensitivity at different frequencies of sounds.

#### 3.5.1.4.

##### **Tapping of Residual Hearing**

"Total deafness, complete inability to hear any sound at all, is extremely rare, perhaps non-existent, in deaf-born children. Edith Whetnall, in an experience with several thousand children was not convinced that she had ever seen a child totally deaf. Some appeared to be totally deaf when first tested, but after auditory training they were found to have some islands of hearing, so called 'residual hearing'"

(Whetnall, & Fry, 1971)

It has been again and again reiterated by research findings that children found to be deaf in the initial assessment, started responding to auditory stimulation with the use of hearing aid over a period of time. (Sanders, 1976,; Doreen Pollack, 1985 ; A van Uden, 1977). The difficulty is that a child who is born hearing impaired, does not respond to auditory stimulation very fast. He/she needs adequate exposures to auditory stimulation before his/her hearing sensitivity can be decided.

These facts point to the folly of labelling a child as deaf on the basis of his/her audiogram. Audiogram only tells about the hearing not perception. The role of auditory system in the comprehensive process of total perception is important, not

the hearing per se. An audiogram does not tell us how speech sounds when it reaches the brain nor how the brain will process those sounds. Above all, it does not tell us what we can educate the brain to do with amplified sound. It is not the peripheral mechanism that is educated, but the perception of the sound by the mind.

"Precisely, what the hearing impaired is able to perceive should be a greater concern than what he/she can hear, which implies that criterion for the measure of auditory function must be communicative behaviour, not just pure-tone audiometry"

(Sanders, 1976)

Hence, audiological assessment done at intervals and feedback from communicative behaviour of the child inside and outside the classroom should together be considered as guidelines to decide the instructional programmes so that both hearing and listening, (the latter, a learned behaviour) are accounted for.

#### 3.5.1.4.1.

##### Amplification

If the residual hearing level does not permit the hearing impaired to hear the intensity level of the spoken voice, early identification followed by effective management that includes hearing aids to bring the sound of speech within audible range offsets much of this natural disadvantage. Only the effective use of amplification, coupled with a pragmatically designed programme of language stimulation can lead to achievements that belie the audiogram.



In the West, early amplification is taken for granted in all educational programmes for the the hearing impaired. A nation wide survey by Karchmer and Kirvin (1977, cited by Hallahan & Kauffman, 1988), found that 79% of hearing impaired students used hearing aids atleast some of the time in the classroom and 67% used it all the time in the classroom.

Early amplification is cardinal to speech and language development of the hearing impaired as that is the only way to tap the residual hearing. For best results, the young ones have to be given training to wear hearing aids as soon as the assessment is completed. They have to be trained to get used to the feel of this extraneous machine on their body. In the initial stages they tend to feel it as an encumbrance and tend to remove them complaining of irritation etc. It depends a lot on the skill of the teachers to help the students get used to it. The young ones should be helped by providing interesting auditory stimuli so that they are motivated to listen and gradually are helped to get used to the machines.

"It is only by early amplifaction that they develop awareness of the function of sound in their environement. If not introduced early, they may have a great difficulty in adjusting to the aids, as the sounds that they hear for the first time may seem so overwhelming that they learn to tune them out"

(Sanders, 1976)

Wearing hearing aid as such does not serve any purpose - but daily monitoring of its function and effectiveness is absolutely vital. In the pre-school years the teachers have to take this responsibility and have to orient the parents of the

children to take care of this job at home. In case of hostlers, the concerned people should be oriented. As the child grows, he/she should be trained to monitor the functioning of the aids although the teacher should also keep a check. The monitoring includes, checking if the battery is live or not, whether the machine is switched on, whether the ear mould is blocked, and whether it is properly adjusted to avoid the 'squeal'.

Just as acoustic information is the primary sensory input required for hearing infants to learn to perceive speech, the same opportunities must be provided to the hearing impaired through amplification and instruction from the earliest possible stage; and even though the hearing impaired child suffers from restricted sensitivity that reduces the linguistic cues available to her/him, constant amplification of abundant meaningful auditory experiences can compensate to a great degree.

All these inferences support the thesis that using hearing aid can be of significant help to a hearing impaired child, the effect depending upon the degree of hearing loss, but that the more significant principle is the presence of some usable hearing in all hearing impaired which has to be exploited by amplification through continuous and regular use of hearing aids. Therefore, it is imperative that all schools for hearing impaired make it a practice to train the students to wear suitable hearing aids, as soon as the child's hearing is assessed.

### 3.5.2.

#### **Auditory Training (Training to listen and perceive speech)**

The approach adopted in the model is acoupedic approach which emphasises upon learning through hearing aids, without formal instruction in speech reading or any form of manual cues (as put forward by Pollack, 1985). The two basic techniques are :--

1. Unisensory training to develop hearing perception.
2. Use of the auditory feedback mechanism to develop speech.  
(use of hearing aids is assumed).

All the training is to be concerned with awareness and interpretation of sounds heard through hearing aids which are worn throughout the child's waking hours. Visual cues are to be totally avoided because any opportunity to depend on visual cues (other than natural speech reading that all hearing people also depend on) leads to an overdependence on this unimpaired modality discarding the sense of hearing which is deficient. The reason for oral failures in the United States, has been attributed to a visual approach to oral speech acquisition, by Pollack(1985).

During the first year of training the emphasis has to be on providing auditory stimuli, all in meaningful situations and related to daily experiences of the child, to facilitate comprehension, which is close to the way a hearing child is exposed to language in the early years'.

"The growing infant spends the first year or more receiving and processing, with increasing complexity and accuracy, the acoustic

signals of speech. Not until he is into his second year does he have a sufficient understanding of the generative rules of language to begin to make them work for him. Not for further two years will he have mastered all the grammatical forms of adult spoken language."

(Sanders, 1976)

The emphasis is on the acquisition of language as a generative function and not an additive function.

In case of the hearing impaired sense of hearing being not used earlier to schooling (in most of the cases) the initial attempts should be only to provide interesting auditory stimuli so that the children are motivated to listen and feel that listening is pleasurable. e.g. : producing (either mechanical reproduction or manual imitation) animals' noises along with showing visuals of the animals, mimicking their movements, etc. These should be followed by training to locate different sounds like that of instruments or animals. The next exercise should be discrimination of different sounds. Only after these should speech per se be introduced for the child to listen and understand in meaningful situations.

During these sessions, there should be no emphasis on imitation, but only stimulation, through input i.e. feeding the sounds into the aids so that the child will develop a strong auditory image and will develop the ability to discriminate or perceive differences between sounds. There should be no insistence on imitation remembering that normal-hearing children do not imitate at our command, but store the sounds until they are motivated to use them. What has to be remembered is that the

child has normal speech mechanism, and once she/he perceives a sound, she/he will imitate it correctly within the limits set by her/his motor development and degree of aided hearing.

#### **3.5.2.1.**

##### **Use of Group Hearing Sets.**

Group Hearing Sets are as functional as personal hearing aids and even more powerful. Like in the case of personal hearing aid, the children have to be trained to get used to them right from the initial days of schooling. They are inevitable for auditory training which starts from the first day. It demands unremitting and consistent efforts from the teacher to train the students to get used to listening through these aids. It is more effective, as the unnecessary sounds that also get magnified while listening through personal hearing aids, can be avoided while listening through group hearing aids, and the students can concentrate on only the speech of the teacher.

#### **3.5.3.**

##### **Speech Training**

The principles of speech training presented in the model closely follow the Maternal Reflective Method (MRM) put forward by A van Uden. (1977) (explained under language developoment).

A hearing child develops language skills through conversations with his/her parents in the beginning where the child is presented with all forms of language simple and

complicated, and detects the language forms mainly himself/herself according to innate capacities and also by relating to the meaningful situations. Smallest unit of language that is meaningful is conversation, and speech development (and language acquisition) should be by way of conversations as in the case of a hearing child.

In such an approach the progress of the child in speech production would be very slow. In the initial year the child would be even silent, but that should not be taken as inability to speak, but should be considered as a period of auditory processing of the environmental stimuli. Gradually, the child will start uttering. Hence, patience and perseverance are the watchwords during this period.

#### **3.5.3.1.**

##### **Use of Speech Trainer**

Speech training is greatly facilitated by the use of a speech trainer. Use of the trainer should be a practice right from the initial days of speech training of second year. Every child should get atleast a few minutes (5-10) with the trainer every day.

#### **3.5.3.2.**

##### **Rhythm of speech**

While talking to the students, while seizing their utterances and moulding their forms, and while making the students speak, rhythm of speech has to be emphasised. This

principle is explained below.

As hearing impaired child cannot encode visual codes into auditory patterns as hearing children, their memory is poor (Conrad, 1965; Locke, 1973; Hoemann, 1974, Snijders Oomen, 1958, all cited by van Uden, 1977). They have difficulty in memorizing verbal material not only in spoken but in written words and sentences too. Often it seems that they have forgotten at the end of a sentence how the sentence started. When spoken rhythmically the memory is improved. Van Uden found in many hearing impaired children with a good rhythm of speech, a short term memory of 8 or 9 words in spoken sentences, 3 more than in hearing impaired taught mainly by means of writing or signs (1977).

Rhythm is movement of the articulatory organs (tongue, lips and jaws) and hence in principle teachable to the hearing impaired. Examples of rhythm of movements are marching, dancing, twiddling the thumbs and fingers and so on. Hearing impaired have a great and basic need for a total rhythmic education from childhood.

The rhythm of words and the rhythmic groupings of the words, detected easily by normally hearing children, are not detected spontaneously and early enough by hearing impaired. They have to be trained throughout, right from first day of speech training by means of the 'sound perception method'. As soon as the child starts speaking two words, he has to be trained to speak them as a rhythmic sing song.

ball -- ball .... bowow..

bowow - ball. bowow. etc.

(Such structures can be formed in any language.  
eg. in Gujarati)

પાપા પાપા આપા  
આપા પીપી આપા

This early training is an introduction to the speech of phrases, eg. in-the-cupboard, not-today, wait-a-moment, etc. A child has to know exactly how many syllables a word has, which syllable has the accent and how that syllable must be pronounced e.g.,

'Fisherman' has 3 syllables.

(accent on the first syllable, by lengthening -sh-)

The children have to be taught when to put a pause in the stream of speech, and where not. eg.

"he puts his / message over",  
(1) (2) (3) (Wrong way)

"he puts / his message / over".  
(1) (2) (3) (Right way)

They should thus learn about accent groups and pauses. The last sentence above has 3 accent groups (1), (2) and (3) and 2 pauses.

Rhythm of speech is also important as a grammatical linguist form. In the example below,

"Ram", said the man, "is a cheat".

Ram said, "the man is a cheat".



Though the order of words is the same, the rhythmic clustering makes the difference in meaning.

Children have to be trained from the beginning in the rhythmic syntagmata i.e. phrases, spoken in a quick, good tempo, each unit being repeated joyfully 5 or 10 times. Starting with words, progressing to phrases and sentences such exercises help to expand short term memory more and more.

Mistakes in the correct rhythm of the sentences and phrases, tempo included, are as big mistakes as articulatory slips. They are even more dangerous, not only because speech intelligibility depends on the rhythm but also because of importance of rhythm to language acquisition.

Any device that aids grouping, no matter how inane, may aid the acquisition process. Thus a singsong or melodic reading of items, a rhythmic accenting of every third or fourth item etc. help to a considerable extent. It can be safely said that a school for hearing impaired, cannot be called an oral school if it neglects rhythmic structure of language, because then the most essential aspect of the spoken language gets neglected.

#### **3.5.4.**

##### **Speechreading**

Speechreading, as conceived in the model is not something to be taught formally but is developed by watching the visual aspects of speech by the child, in situations in which meaning can be easily illustrated and understood, similar to

conditions under which language is normally learned by hearing children.

"Lip reading is a poor substitute for hearing. Only a few speech sounds are easily visible, such as vowels, and consonants, P,B,M. and less easily T,D,N, and C and even these are ambiguous."

(Reed, 1984)

"Intensity with which words, syllables and phonemes in a sentence are expressed, cannot be understood by speechreading; the pitch of a speaker's voice, and the intonation pattern used are invisible, and several speech sounds such as p,b, and are homophenous i.e. look alike on the lips, marking them difficult to be discriminated. Nitche (1930) considered 40% of speech to be homophenous ".

(Ling, 1976)

"Speech reading is EXHAUSTING. I hate having to depend on it, writes Cheryl Heppner, a deaf woman who is the executive director of Northern Virginia Resource Centre for Deaf and Hard of Hearing Persons, although she is a speechreading virtuoso. For an average deaf person, speechreading is even less rewarding. In tests using simple sentences, deaf persons recognize perhaps 3-4 words in every ten. One British study found, for eg. that the average deaf person with a decade of practice was no better at speechreading than a hearing person picked off the street"

(Dolnick, 1993)

Research studies shows that there are 36 different sounds in English and only 30% of them can be detected by speechreading. Even very good speechreaders in face-to-face conversations many understand only about 25% of what is spoken (cited by Ling, 1976).

All the above citations support the principle that speechreading cannot be much of a use for speech perception, apart from the natural support it can give to hearing perception. Hence training to speechread does not find a place in the model.

### 3.6.

#### Development of Language

Language development of hearing impaired described in the model is deduced from psycholinguistic principles of van Uden (1977). These principles are :--

- The archetype of language is conversation.
- Rhythmic speech is fundamental to full human communication.
- Without sufficient frequency of language use, it is impossible to learn a language - hence the importance of developing reading skill.
- Hearing impaired should learn to discover, as much as possible, the linguistic structures for themselves.

#### 3.6.1.

##### Conversation

The teacher has to play a double part like how a mother converses with her baby, the method called by A Van Uden, as Maternal Reflective Method (MRM) (1977), explained in the following paragraph.

Spontaneity of learning is one of the most striking characteristics of the mother tongue. A hearing child learns as a child by trial and check through imitating others, by being conditioned, by finding and following analogies. Enormous frequency in receiving and expressing language makes possible the process of finding and following analogies in language structures. These analogies are rhythmically modelled and the

intonations help for correct groupings and flexions, with attractive melody too. This spontaneous process, that happens continuously between a mother and her child, is misunderstood, if it is thought that the mother does not teach. The natural way of teaching followed by the mother includes and presupposes trial and error play. It makes the child search and think. This is in essence the maternal reflective method.

From our observations (van Uden 1955-57) and the admirable research of Brown (1964) we know how a mother continuously interacts and corrects the language of her child, kinds of reactions of the Mother are :-

1.     **Expansion :-**     The mother repeats the child's utterance by adding the parts she thinks are missing.  
                          e.g. :  
                          Child : "Papa.., toffee,"  
                          Mother : Papa is bringing toffee.
2.     **Modelling**       The mother comments on everything said by the child, eg.  
  
                          Child : 'Papa Car'?,  
                          Mother : 'Papa is not coming by car, he is coming by bus.'
3.     **Prompting**       The mother puts a question asking the child for an answer, eg.  
                          Mother : 'Where is your bag?'  
                          Child : 'I have lost it'.

4. **Echoing** "what the child says, to aid memory"

(van uden, 1977)

3.6.1.1.

The 'seizing method' of the Mother and her 'playing of a Double-part'

It is a common place observation that mothers generally interpret the expressive movement of her baby. In later stages, the mother seizes the faint utterances of the child and clothes them with language thus playing a double part. The mother generally makes herself understood through the situation. She starts her work immediately after birth, before building up any vocabulary. She finds, led by nature, the crystallization point of languages, conversation.

Playing a double part can be understood from the following example :

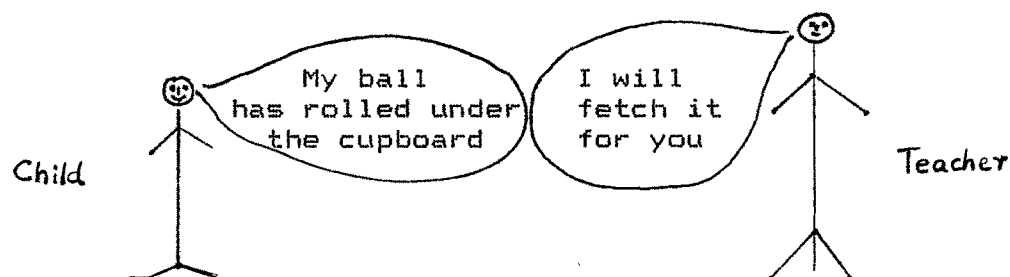
"There (pointing) ....ball...!"

The teacher seizing this utterance, says,

'Has the ball rolled under the cupboard ?

I will fetch it."

Such conversations should be put into speech balloons (as under) and used as reading material because the student will be able to relate with it easily.



The speech balloons indicate that the conversation between the child and the teacher is 'playing double part' by the teacher. A teacher of the deaf has to follow these stages of maternal reflective method (MRM), listening to the hearing impaired child seizing his/her utterances and giving them back in their right linguistic forms. This makes the children themselves more and more attentive to the teacher : this spark off exchange of ideas, and thus conversation is born. Listening is an indispensable aspect of conversation. It is not possible to enter into conversation with the hearing impaired unless a teacher continuously listens to what they want to say, what they think, and what they desire. A good pedagogue has to always be a good listener.

### 3.6.2.

#### Rhythm of Speech

This has been discussed under speech training.

### 3.6.3.

#### Pauses in Language (This is also relevant in speech training.)

A study by Suci (1967) revealed that -- phrases with pauses are better memorized than those without pauses.

Eg.

'Let us go by bus / because / it is raining cats and dogs.'

will be memorized better than

'Let us go by bus because it is raining cats and dogs'.

Fodor and Garrett (1967) found the same in sentences containing 'pincer constructions' (self - embedded sentences).

For eg.

- The man / the dog bit / died.  
better memorized and understood as  
'The man the dog bit died'.  
(cited by van Uden, 1977)

Consequently, pauses are a real lawful tool in expressive and receptive language. They are living element in the total rhythmic structure of a sentence. Therefore, every teacher of hearing impaired should emphasise the pauses in expressive and receptive language of the students.

#### **3.6.4.**

##### **Polarity of Meanings**

An important phenomenon in semantics is the polarity of meaning, in which we have the basic principle of linguistics and psycholinguistics, i.e. opposition. We form our meanings mainly by interference and interaction between meanings. An important consequence of our didactics is that of teaching children concepts mainly by polarities. If we have to teach wooden chair, distinguish it from steel chair, dwarfs to be distinguished from giants, pilots from drivers etc. When concept of 'tall girl' is to be taught it has to be distinguished from 'short girl', 'fat boy' from 'thin boy', 'dirty' from 'clean' etc. Giving opposites helps to get meanings of words registered more easily.

### **3.6.5.**

#### **Reading Lessons**

Exposure to language includes exposure to printed language apart from auditory inputs. A hearing child learns to receive language at a younger age than he learns to express it. In case of a hearing impaired, because of the very reason of deficient auditory reception, all the enormous arrears of frequency in receiving spoken language can only be made up by reading. Reading must give them the source and ground from which expressive language can grow. Myklebust (1964, cited by van Uden, 1977) observes that perhaps one of the most beneficial and effective ways to improve the level of written languages is to raise the level of read language.

#### **3.6.5.1.**

##### **The Didactics**

The important consideration should be that the children are provided with reading material with which they are already familiar viz. all the words and structures should be already discussed in the class. In order to achieve this, the teacher has to maintain a diary of each student, where daily conversations are penned down. This reading material would facilitate 'ideo-visual reading' (Van Uden, 1977) because the idea is already known, and they read what they know.

The second step is 'receptive reading' - children start reading from the diaries of their classmates and friends, language of atleast part of which is unfamiliar. They now start



a kind of 'visuo-ideal reading' (van Uden, 1977) i.e. get new ideas from the visual graphic forms. The same principle applies to reading a letter from home. The child thus starts receiving ideas more or less unknown to him.

Hearing impaired need much more training in reading than hearing children. Making the child read aloud does not tell anything about their comprehension. Ofcourse, in higher classes the content can be discussed and thus comprehension can be checked as it is done with hearing children. But in pre-school to IIIrd standard this is difficult.

One way of training to read is :--

After reading a sentence the child can be asked to select the suitable picture to match the sentence, or select a picture possibly belonging to several sentences. It can be also a series of pictures to build up a whole story. The students can be asked to find sentences (written down in strips) belonging to dramatizations presented by the teacher or peers. Inversely, the children can be made to read and dramatize the event.

A less visual lesson is the 'who - says - what game' (Van Uden, 1977). The speakers in the reading lessons with their pictures with empty speech balloon is drawn on quotations of the speakers are written down on separate pieces of paper. Students are asked to put the right 'say -sentence' into the appropriate speech-balloon. To do this rightly, a certain extent of reading with comprehension is a pre-requisite.

Another way is through scrabble game. Students are

asked to put the shuffled paper strips with sentences of a reading lesson in order to reformulate the original reading lesson with which the children are familiar.

"Normal hearing children are generally made to read aloud piece by piece, in turn, which very often reveal their difficulties in pronunciation and understanding. The same exercise holds good for hearing impaired as well and this can be done through group hearing systems. One child can read and others can follow in their own books. 'Even the deafest children are able to follow this by rhythm'

(Van Uden, 1977).

#### 3.6.5.2.

##### **Contextual Meanings of Words**

Children have to be trained to decipher meanings of words from the content rather than by depending singularly on the learned meaning of the word.

For eg.

"Your table is not complete..."

Here, table does not mean a piece of furniture but it means multiplication table. This can be understood by reading further. This feedback from the sentences that follow (context) are instrumental to revise the interpretations.

#### 3.6.5.3.

##### **Tempo of Reading**

Tempo is another very important aspect of reading that has to do with short term memory. Hearing impaired have difficulty in understanding as they generally read at slow tempo.

Example,

"You have cut your finger, what should you do ?"

A hearing impaired read this as follows :-

"You (2 seconds) have (1.7 seconds) cut (1 second) your  
(2.4 seconds) finger (4 seconds)".

i.e. More than 11 seconds for this short sentence. Then I  
covered the page and asked.

'What did you read?'.  
'

The child did not know ! (Van Uden, 1977)

"Experimental studies have shown that when exposed to speech rates of less than 40 words per minute, our comprehension starts to break down. For the hearing children reading rate average was calculated from experiments to be 64 words per minute, whereas for hearing impaired it was 24 words per minute, to read the same material. It therefore appears that it is highly unlikely that a hearing impaired with poor expressive and spoken language can make much sense out of text read half at the minimal rate of 40 words per minute"

(Wood et al, 1986)

Conclusion for teaching : we must train the memory for language, by training to speak and read in good tempo and by training to read more and more words in less and less time.

### 3.6.6.

#### Teaching of Grammar

The principle, that a hearing child learns the basic system of language (his or her mother tongue) by reflecting on the language by which he/she is surrounded with, is followed in the model. A hearing impaired child has to be exposed to optimum language inputs in meaningful situations to facilitate their

reflection on language. The difference is that in case of hearing impaired, reflection should be mainly conscious even in the beginning. Slowly what has been learned in reflections will become automatized more and more through a lot of feedback operating cybernetically through the process of conversations.

A teacher of grammar has to repeatedly use the newly learned structures in meaningful situations to help the children get used to the usages in conversations, and also revise it in the prose lessons. This has to be augmented with reading matter in the diaries, for repeated revision at home/hostel, and in the class.

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### 3.6.7.

#### Writing and Reading

Listening should precede reading and writing i.e. as already explained, it should start from the first day itself. Reading and writing should start by the second year of schooling (4-4.5 years) after speech training already begun. First reading should start, followed by writing.

Listening and speech should be far ahead of reading and writing, so that the children can speak all the words that they can write. The principle is that oral functioning is kept in the forefront to ease language development as in the case of hearing children.

As a general conclusion, it is important to note here that the stages of development in a hearing child are to be closely followed in the case of hearing impaired as well.

### 3.7.

#### Teaching of Other Subjects

Teaching of subjects like Science, Social Studies, and Mathematics are to be carried out as they are done in regular schools. Two principles that have to be always borne in mind are, auditory training and speech training have to be integrated into the teaching, and that visual aids should be used to optimum degree.

### **3.8.**

#### **General Principles of Teaching**

The general principles of teaching that are researched and established and integrated into our fund of knowledge are all applicable in the case of hearing impaired, assuming much greater dimensions owing to the special demands necessitated by a deficient hearing, specially noteworthy is the principle that teaching should be geared to ensure success and mastery for each and every student. In addition, there are many more principles which arise from their special needs. These principles of teaching have been briefly mentioned in the following paragraphs.

#### **3.8.1.**

##### **Individual Attention**

The hearing impaired have all the individual differences akin to those of hearing students. But the problems are compounded with additional differences viz. the degree, type and cause of hearing loss, age at which hearing loss was detected, age at which medical help was provided, age of starting school education, age of starting to use hearing aids, whether parents are hearing impaired, whether siblings are hearing impaired and also whether the child is a hostler or a day boarder. A teacher has to have a complete understanding of all these details of each child and has to match her teaching strategies to the needs arising from the background of the students.

### **3.8.2.**

#### **Providing Audio Visual Experiences**

The importance of audio visual aids in teaching is an established fact. It becomes all the more pertinent in the case of education of the hearing impaired due to the inefficient auditory function.

A combination of audio and visual aids are very relevant in the lower classes during auditory training and speech training sessions, where different sounds can be used for sound localization, recognition, discrimination, coupled with corresponding visuals.

Teaching of all subjects of all classes should be systematized to be closely integrated with relevant and effective use of visual aids like models, charts, real things, experimental settings, experiences of mimicking and dramatization. In addition, short outings in order to provide educational experiences should augment the classroom experiences. These exposures have to be decided on the basis of the age group and stage of linguistic development of the students.

#### **3.8.2.1.**

##### **Project on Preparation of Visual Aids**

Use of teaching aids being extremely vital in the education of the hearing impaired, a project of preparing visual aids is proposed in the model.

Every school should have an ongoing project of

preparing visual aids like charts, models, flash cards, albums with news paper or magazine cuttings etc. on different topics of relevance. Many more could be added to the list depending on the resourcefulness and creativity of the staff. This project should be done with full involvement of students however little that would be because such activities turn out to be educative and pleasurable experience for the students which also help to boost up their self confidence.

### **3.8.3.**

#### **Student - Talk**

A teacher has to be alert and resourceful to not miss any opportunity which can motivate the children to express ideas both in written and oral mode. The teacher has to catch on any event in the class or any experience of the student to enter into dialogues with the students and to motivate them to talk. The teacher also has to create interesting situation by which the students feel the urge to talk, and also take care that speech corrections do not curb this urge.

### **3.8.4.**

#### **Lesson Plans**

Planning of a lesson is an important function of a teacher as a systemist, in order to achieve the instructional objectives set forth by her/him. In case of hearing impaired, use of visual aids has a virtue of which planning in advance assumes greater importance. Only if a lesson is planned in advance can the teacher get the visual aids ready in case they



are not present already. Needless to say apart from getting the visual aids ready, lesson planning helps the teacher to prepare the lessons more thoroughly. Thus it goes without saying that planning lessons well in advance is an important activity that a teacher of hearing impaired should be habituated to.

### **3.8.5.**

#### **Maintaining a Diary for Each Child**

A diary has to be maintained for each child by the teacher until the children can manage it on their own. Such a diary should have daily lessons, including deposits of conversations and new words learned. This should be used as reading material for the children for which the children have to be given practice in the initial years.

### **3.8.6.**

#### **A Record of Daily Progress**

The teacher should maintain a record of progress and problems of each child for feedback for self. This record has to be maintained all through the years so that this can help the teachers to take decisions of mainstreaming the child, at the end of the year apart from gearing daily teaching programme.

### **3.8.7.**

#### **Evaluation**

Objective of the schools being mainstreaming, the pattern of questions for the terminal and annual examinations should be equivalent to those of regular schools. There should

be monthly tests to monitor the progress of the students closely, apart from the terminal and annual exams. Besides, the formative evaluation by the teacher recorded regularly in his/her notebook should be considered a valuable measure to know the children's stage of development.

All through the classes, oral skills should become an important aspect in the examinations for which conversations should be the method whereby speech intelligibility and speech reception should be tested.

### **3.8.8.**

#### **Remedial Coaching**

There has to be time slot of atleast 2 or 3 periods in a week where the special problems of children which demand pointed individual instruction, are dealt with. During this time the other children who do not need such extra care should be engaged in meaningful activity whether academic or co-curricular. One of the important sources of information to decide on remedial coaching should be the note book of the teacher, where day to day events are recorded. During the classes of remedial coaching students should be dealt with on a purely one to one basis.

### **3.9.**

#### **Co-Curricular Activities**

The importance of co-curricular activities in a school programme need not be justified. The very definition of education, overall development of the child subsumes the

importance of co-curricular activities in a school programme.

In the case of hearing impaired children, there are many activities which are not tried out at all like singing, or dramatization, especially in India. The basic attitude of any school should be that every activity be tried out and only then declared as difficult rather than discarding any possibility of trying out an activity, because of the prejudice that 'after all they are deaf, how can they be expected to do all these'.

Annual - day and Annual Sports celebration should be closely knitted into the school programme, along with participation in inter-school sports and cultural competitions. Through all these events, the hearing impaired should be given ample opportunities to exploit their potentials to the maximum.

### **3.10.**

#### **Vocational Training**

The objective of schools for the hearing impaired as mentioned in the beginning of the model is to integrate the students into the hearing society, and more specifically, 15 years of schooling should equip the students for higher studies in regular schools. Vocational training should not in any way dissuade the students from studying further, but should only provide alternatives to those students who are not ready for mainstreaming even after all the trial and coaxing.

Vocational training is proposed at 2 different levels one is, along with the main academic programme, which is the pre

vocational training programme close to the socially useful productive work run in different regular schools. The other is advanced vocational training of 2 years duration for those students who complete SSC and are adamant about joining vocational training.

### **3.10.1.**

#### **Pre-Vocational Training**

From standard V to X (regular) students should be trained in vocations befitting their age, hearing ability, and standard without underestimating their potential. Commercial arts, pottery, candle making, cutting and tailoring, typing, carpentry, knitting and embroidery, repair of electrical gadgets, etc. should be included in the programme. Students should be exposed to different vocations so that their choice of vocation in the advanced course would be based on concrete reasons.

### **3.10.2.**

#### **Advanced Vocational Training**

The advanced Vocational Training Course should be for a period of 2 years where indepth training in any one vocation befitting each trainee should be given. This course should be recognized by the government so that the trainees can get government jobs.

One important aspect is that before admitting each student for a course thorough assessment should be carried out so that he/she can develop to the maximum extent. The tests should

include all the following.

- o Assessment of hearing sensitivity.
- o I Q test.
- o Psychological Assessment-personality and Aptitude tests.
- o Apart from these, a thorough study of his/her family background should be done to help him/her select the best suited vocation.

The underlying philosophy for vocational training adopted in the model is that the hearing impaired can be equipped for different vocations regularly opted by hearing children if the provisions given are matching to their needs. Hence underestimation and prejudices should be avoided and the leading spirit should be to try out different vocations before declaring that the trainee is incapable.

For example, typewriting is a vocation that is generally opted by hearing students. This definitely demands a certain degree of linguistic competence from the part of a trainee. It is the responsibility of the school system to equip the students with necessary language skills to make them ready for vocational training in typewriting.

#### **Follow-up**

An extremely significant point is that the responsibility of the system should not be taken as over at the

point of completion of the programme by the trainee.

The follow-up programme, till the hearing impaired trainee gets rehabilitated, is as vital as training programme itself, if not more so. It is the responsibility of the training person to see that the trainee gets employed in an institution or gets self employed.

It is essential that the staff maintain a record of

- i) different institutions where the trainees could be absorbed,
- ii) different schemes like bank loan for self employment to give funds
- iii) schemes of the government for funds,
- iv) details of voluntary organisations that would help these trainees.

It is also imperative that the trainees are given necessary guidance and counselling to shape their future apart from providing them with varied information that they require. guidance and counselling is dicussed in the following section :-

### **3.11.**

#### **Guidance and Counselling of Students**

The need of guidance and counselling of the hearing impaired arises from the very nature of these children. Due to deficient hearing sensitivity, they tend to be suspicious of hearing people, lack emotional stability, and have low self esteem and tend to be withdrawn. The problems are compounded if

they are hostlers. Thus every teacher has to be a good counsellor for any age group of children, with the basic goal of helping the children to build up self esteem and to set targets high.

The needs of the children vary according to the developmental stage at which they are. Role of the principal/teacher as a counsellor starts at the time of admission. The students have to be oriented regarding use of hearing aids, and care of ear and ear moulds. The demands would increase as the students grow. Many times young students show reluctance to use hearing aids and they need to be properly guided. They need effective counselling to tackle emotional problems associated with low self concept, and suspicion regarding the society's attitude to them. Small children would need more of love and emotional security than others and an adolescent would need more of assurance and acceptance as an individual. Students who are low achievers academically, who remain continuously absent and also who fail repeatedly, need counselling and guidance to cope up with the situation and emerge successful. Another important juncture at which guidance is crucial is the time of mainstreaming when the students have to be oriented about the general school environment and their role therein. If they find general school education difficult and are withdrawn to join back in special school, they require in-depth counselling and guidance to help them put up with reality and to keep up their self concept. At the time of completing schooling they need vocational guidance to select a suitable vocation and need

counselling, for joining for higher studies. Moreover, a school would be mainstreaming capable students in different standards, and these students need effective guidance and counselling to be ready for integration.

Apart from all these, problems in studies or other areas have to be looked into by every teacher as a counsellor, whereby students would be reassured and motivated to continue. Being away from parents, hostlers would need extra love and care irrespective of their age and hence teachers and hostel staff would have to constantly bear this in mind.

In order to provide effective vocational guidance, every teacher would have to be well informed about the courses and their prospects at different institutions like VRC-s, ITI-s, and should also be aware of the schemes of the government to give financial help to the disabled.

Thus, it can be said that the teacher of the hearing impaired has a much more crucial role to play than a regular teacher.

(Guidance and counselling of parents very relevant in this section is presented under 'Parental Involvement')

### **3.12.**

#### **Mainstreaming**

Mainstreaming renders the vital principle of immersing the child in a field of speech, a reality in total sense and offers the child a model for personal/social/communicative



behaviour. There is positive reinforcement of attempts to talk while in the midst of hearing peers. It adds a verbal mediating link between the action of play and cognitive development for the hearing impaired child through the presence of highly verbal unimpaired peer group. The regular school environment also offers opportunity for increased comprehension and rich internal language stored for later incorporation in self-expression through speech. Through all these processes, the linguistic skills are developed at much faster pace than if continued in a scheduled environment of hearing impaired people.

The model of schooling presented is based on the important goal of mainstreaming all students for higher education after the fifteen years of schooling. But a school has to also mainstream those students who are absolutely equipped to be mainstreamed, after the minimum of 5 years of basic training in the special school. In other words mainstreaming should be the objective of every school possible at 3 different levels :-

- i) after completion of the 5 years of pre-schooling, if the students are absolutely ready.
- ii) if any student is ready at the end of a year, right from Ist to the IXth standard.
- iii) after completing SSC.

This means that every school should have a regular annual programme to screen the students and mainstreaming those who are absolutely equipped.

The decision of mainstreaming has to be taken after

thorough evaluation procedures. The basis of deciding should be the formative evaluation done by the respective teachers across the years and the annual examination results. The record of progress maintained by the teacher has to be an important support for the decision. The specific criteria to be considered are, the ability to comprehend spoken language, ability to speak (general requirement for mainstreaming into any class), vocabulary of atleast 2500 words (if mainstreamed into 1st standard) fluent writing and reading skills (if mainstreamed into higher classes).

The responsibility of the school does not end by taking the decision about mainstreaming. In fact it is the only first step towards mainstreaming. There are certain points of importance, to be considered in the whole process of mainstreaming.

After deciding on the school, the principal and the concerned teacher have to be consulted, and through proper discussions they have to be prepared to admit a hearing impaired in their school. A full background of the student with his/her potentials and weaknesses have to be provided to them in writing, for their reference.

The teacher has to be given adequate information on monitoring the use of hearing aid. The teacher has to be instructed to orient the students of his/her class regarding their role in cooperating with, and encouraging the hearing impaired student and above all to not to use signs to

communicate, but to talk with him/her.

The hearing impaired student and his/her parents should be prepared to meet the challenging situation. The student needs to be reassured and be helped to build up self confidence to be part of a hearing world.

The teacher has to accompany the hearing impaired student during the first few days to the regular school, so that the student is at ease with the new environment.

There should be arrangement for the hearing impaired student to consult the teacher from the special school in case of any difficulty in the regular school. Moreover, the special school should have arrangement to directly monitor the progress of the child closely and give him/her academic and emotional support atleast in the first year of mainstreaming.

The school system has to be open about mainstreaming a child. On close monitoring of the developments of the child in the regular school, if need be, the child should be withdrawn and admitted back to the special school after adequate counselling of the child and parents if required.

To conclude, mainstreaming, especially during the ten years of education, is a great responsibility and if the decision to mainstream a child is not taken after thorough screening procedures, and if proper follow up is not carried out it can be a traumatic experience for the hearing impaired which could be very damaging to his personality and future life in

general.

### **3.12.1.**

#### **Mainstreaming after SSC**

The school system has to take the responsibility to see to it that the students join higher education classes after passing SSC, the modalities being the same already described, viz. establishing a link with the concerned institution, orienting the staff regarding their role in rising to the needs of the hearing impaired, and guidance and counselling of the student and parents. The modalities should be tuned to suit the age level of the students as, by the time of completion of SSC, they would be 18.

### **3.13.**

#### **Parental Involvement**

A baby's communication starts at home, especially with the mother. By the time it reaches the school at the age of 3-4, it would have already have a vocabulary of 2500 words. Generally, the case of a hearing impaired is very different, especially in India. Due to the ignorance of parents, they generally stop talking to their child after he/she is suspected to be 'deaf' and hence the child would be silent, without any receptive or expressive language skills.

The optimum condition for successful language learning is a continuous and affectionate relationship between parent and child manifested in frequent and appropriate communication. The

reciprocity of the interaction is the essence of language learning. This interaction at home has to be a continued process and should evolve into supportive system to the school programme.

It is only when the child is admitted that the school has any link with the parents. Hence, whatever be the conditions before school admission, there has to be a close link between the parents and the school programme from immediately after the admission of the child. This has to start with an appropriate orientation of the parents regarding their role in supporting the activities of the school, right at the time of admission.

#### **3.13.1.**

##### **Guidance and Counselling of Parents**

In order to give regular and timely orientation to the parents, there has to be well organized guidance and counselling programme for parents, integrated into the school programme.

The foremost task of such a programme will be to get the parents to attend the guidance and counselling programme organized in the school. Adequate strategies will have to be planned to achieve this goal.

The aspects to be discussed in the guidance and counselling programme are presented in the following paragraph.

It has to be driven home that their child has some residual hearing which can be utilized by using hearing aids and by being exposed to speech. They should be convinced about the usefulness of hearing aid and should be oriented about the

monitoring of the same. Parents have to be helped to procure hearing aid with proper guidance regarding the make of the machine, place of purchasing etc. In case of financial constraints the school has to help. It is one of the most important duties of the parents to see to it that their child wears the hearing aid all through the waking hours while at home, hence this point has to be focussed in the programme.

It should be made very clear that the parents should take care to communicate orally with their child as much as possible, in meaningful situations, so that the child understands what is spoken to him/ her. The parents should give the child enough auditory exposure before expecting the child to speak and hence they should be advised to keep patience.

Parents have to involve the child in all functions of home, talking to him/her all the while building on his/her vocabulary. Giving outdoor experience whenever possible is yet another valuable lesson in language development, provided the parents are sensitive to seize the perhaps unclear and unintelligible speech of the child and to give it a mould of language. These roles of the parents have to be put across to them by teachers of the child.

Above all, the parents should be advised to treat their child as normal, without underestimating him/her, and without having low expectations from their education. They should be made thoroughly convinced about the possibilities open to the hearing impaired in terms of varieties of vocations offered in

vocational training programmes, reservations of seats in government offices, schemes of bank loans at low interest for handicapped etc.

### 3.14.

#### Hostel

In the present model, the hostel is envisaged to be a closely knitted integrated system functioning to further strengthen the activities of the school geared to all round development of the children. The roles of parents outlined in the foregoing section are relevant in the case of hostel staff. The vital principles are, the children should be treated as normal beings, they should not be sympathised or underestimated, they should be always 'spoken' to, thus reinforcing the strategies going on in the school. Meaningful activities, in small and large groups should be organized in leisure time including cultural and academic activities to facilitate language development. Apart from all these, monitoring the use of hearing aids by all children all through the waking hours is a very important responsibility of the hostel staff, which also includes training the young ones to take care of the hearing aids.

Celebrations of as many festivals as possible should be on the regular agenda of the hostel, each occasion being used for developing language in the children. These celebrations have to be planned and organized involving the senior students of the hostel. Short outings in small groups should be organized which

are educative experiences for the hearing impaired.

Only when all such activities are planned and organized can hostel be a supportive system to endeavours of the school system. Thus, the perspective of the model is to see school and hostel as inter-related, inter-dependent parts of a system.

Apart from all these the hostel warden has to be an effective counsellor to look into every day problems of the hostlers, and be very loving to give them emotional security.

#### **3.14.1.**

##### **Orientation of Hostel Wardens**

If a hostel has to provide conducive environment for the development of a hearing impaired child, the warden has to be well oriented about the very significant role that he/she has to play as a warden which is as important as that of a teacher. An orientation programme is proposed to meet this need.

An orientation programme for all the newly appointed wardens has to be organized in the beginning of each year at state level with state initiative. The main aspects to be included in the orientation programme are ;

- i) the nature of the hearing impaired,
- ii) the special needs that arise from these peculiarities,
- iii) the demands from hostel environment viz. emotional security, academic support, an environment of 'speech',
- iv) special emphasis on monitoring of use of hearing aids by students,



v) counselling of parents.

It is important that all these responsibilities percolate down to all the personnel of the hostel under the guidance of the warden.

### 3.15.

#### **Supervision by the Principal**

Any school programme cannot be successful without the leadership, co-ordination, and supervision of the head, especially a school for the hearing impaired with all its added responsibilities including a link with regular school system.

The principal has to supervise classroom process regularly with and without prior notification, and give adequate feedback to the teachers. The school programmes should be planned and organized well in advance through timely meetings of all staff members. The weekly lesson plans of teachers have to be checked and approved by the principal. The principal should have an idea of what goes on in every class. He/she should check and monitor the personal hearing aids of the students occasionally in order to make sure that teachers are regularly keeping vigil on them. Use of other equipments like group hearing systems, speech trainer and audiometer has to be supervised off and on.

The principal should keep a record of the family background and personal details of each student and extend help to teachers to solve special problems of students when required.

He/she should have regular meetings with staff members where such cases are discussed.

Mainstreaming is an activity of the school which has to be closely monitored by the principal, right from the time of screening of the student for deciding about mainstreaming, to discussing with teachers and principal of the regular school to counselling the parents and the student, and also in the follow-up phase.

Hostel functioning should be well covered under the field of supervision and control of the principal so that all the endeavours of the school are reinforced in the hostel. Hostel warden and the principal should work hand-in-hand for realizing the goal of integrating the hearing impaired into the hearing world.

So far in the model, the functional aspects have been discussed. In order to keep all these processes going on effectively human and physical resources are inevitable. These have been discussed in the following paragraphs.

### **3.16.**

#### **Resources**

It has been reiterated many times that education of the hearing impaired demands specialized techniques and methods, as against education of hearing children. Right from assessment of hearing to teaching - learning to vocational training to mainstreaming to vocational rehabilitation, all the

responsibilities of the school are highly demanding. These processes can go on effectively only if the appropriate resources are available in the schools, which include both human resources and material resources. These have been discussed as under :-

### **3.16.1.**

#### **Personnel**

##### **3.16.1.1.**

#### **Teaching Staff**

The relevance and significance of one-to-one relationship between teacher and pupil, and of individual attention that each child gets in a class have been already discussed. These principles demand maintenance of teacher-pupil ratio at 1:10 or 12 but not more. When the children are more in number the quality of teaching-learning would naturally suffer. Thus, a school should have sufficient number of teachers.

##### **3.16.1.2.**

#### **Audiologist**

From the section on measurement of hearing sensitivity, and utilization of residual hearing and use of hearing aids, the role of an audiologist in educational programmes for hearing impaired is obvious. If maximum possible benefit of residual hearing, however minimal it may be, has to be tapped, the service of the audiologist, the resident expert in hearing, measurement, and utilization through appropriate amplification is a must. To

facilitate a systematic delivery of service, an audiologist could be either a part-time or a full time member of the school system as decided by the authorities.

#### **3.16.1.3.**

##### **Personnel for Vocational Training**

Vocational training being an important element of education of hearing impaired, trained staff for vocational training, be it pre-vocational (Standard Vth to Xth) or advanced vocational training are essential. Moreover, these personnel have to be also oriented as to the importance of adhering to oral mode of communication with the students. Only if all the staff members co-operate can an environment of speech be created in the school. No staff members, be it a vocational trainer or a hostel warden, should indulge in using manual mode. Therefore, these staff members should have proper orientation in this regard.

#### **3.16.1.4.**

##### **Technician**

Hearing aids, audiometer, speech trainer, group hearing systems are all integral parts of the programme. These are all machines which would go out of function due to various reasons including wear and tear. Hence, a resident expert in these mechanical repair works is indispensable. His services should be available whenever required so that the school programme can go on without much of a hurdle, even when these machines go out

of order.

#### **3.16.1.5.**

##### **Hostel Warden**

It is obvious that there should be a hostel warden to manage the boarding and lodging of the students. He/she has to be a qualified person who is fully aware of his/her responsibilities to give full support to the school system.

#### **3.16.2.**

##### **Physical Facilities**

#### **3.16.2.1.**

##### **Building**

Hearing impaired children rely on the use of hearing aids for their development. This dependence on hearing aids demands best environmental acoustic condition and therefore consideration must be given to the classrooms whenever a new school building is constructed. The surface should be made as rough as possible to absorb echo of sound to enhance the quality of sound. The rooms in which there will be more 'talk' are the most important ones for acoustic treatment, and this may be less relevant for art and craft rooms.

It goes without saying that both school and hostel buildings should have sufficient supply of water and electricity and proper sanitation.

#### **3.16.2.2.**

##### **Library Room and Reading Material**

Deficiency in exposure to spoken language has to be compensated through exposure to language in print for the hearing impaired children. Hence, story books and other books of educational value suitable to the potential of the children should be procured regularly. Books are inevitable for a school although not a library room. Even if a library room is not present, books can be preserved in class room and distributed as needed.

#### **3.16.2.3.**

##### **Class Rooms**

Having stressed the need for individual attention and small teacher - pupil ratio, it goes without saying that adequate number of classrooms is necessary in a school so that there is no over-crowding in any classroom, and that each child will get adequate attention. Each classroom should have a wall to wall blackboard the location of which should take care of the essential requisite that maximum possible light would fall on the black board and that glare would be avoided.

Teaching aids are indispensable for effective teaching. Hence there should be arrangement for displaying teaching aids, on all the three sides of every classroom. (Like soft boards, or thermocol boards)

#### **3.16.2.4.**

##### **Seating Arrangement**

The seating arrangement has to be different from that of regular classrooms. The seating arrangement has to be semi-

circular, so that the teacher is visible clearly to all the students.

#### **3.16.2.5.**

##### **Furniture**

Every classroom should have sufficient furniture to accommodate all students comfortably. In order to fit the group hearing sets appropriate wooden furniture (desks) have to be procured.

#### **3.16.2.6.**

##### **Teaching Aids**

The added significance of teaching aids for effective teaching-learning in the context of hearing impaired has been discussed already. There should be regular procurement of teaching aids in every school. Purchasing of aids from the market and preparation of teaching aids by teachers with involvement of students should be part of the regular activities of the school.

#### **3.16.2.7.**

##### **Audiology Room**

Assessment of hearing sensitivity has to be a regularly organized activity of a school, which means that unless there is a separate room for this assessemnt, teaching learning of the class in which this assessment is carried out will be disturbed. In order to obviate such disturbances it is essential that

separate room is present.  
3.16.2.8.

#### **Equipments**

- i) **Audiometer :-** A school has to have an audiometer so that assessment of hearing sensitivity can be carried out whenever decided,
- ii) **Speech Trainer :-** Speech trainer is obviously yet another inevitable aid in the educational habilitation of the hearing impaired, which gives auditory feedback along with a visual cue when a child speaks and it is one of the very useful aids for individualized training.
- iii) **Group Hearing Sets:--** These are aids that facilitate auditory training of the students through amplification of teacher's speech simultaneously to all students. These are naturally indispensable in the classrooms. Although, ideally they should be present in all classrooms, they are utmost inevitable in the first 5 years of education, during which the communication skill development is the main focus.
- iv) **Personal Hearing Aid :-** Every school should make use of the funds available for procuring personal hearing aid through the scheme of Ali Yavar Jung National Institute for the Hearing Handicapped, Bombay. Department of Social Defence (State Government), and voluntary organizations apart from mobilizing funds from individual donors and the trust. Whatever be the means of fund mobilization, it has to be seen to, that all students are fitted with suitable hearing aid as early as possible after



hearing assessment.

### 3.16.3.

#### Funds

From the foregoing sections the requirements of a school for the hearing impaired can be well understood. In order to procure all these resources financial resources are but essential. It is a simple truth that education of hearing impaired in a special school is a costly affair due to the very nature of deficient hearing sensitivity which demands a paraphernalia of special equipments, special teaching methods, special furniture, and specially trained staff. Unless enough funds are available these requirements cannot be fulfilled and school cannot run effectively. Therefore, all possible channels of fund mobilization have to be efficiently exploited to procure and maintain the resources.

### 3.17.

#### Concluding Remarks

It is delineable from the forgoing pages that the model proposes a school system in which children with hearing impairment are helped to overcome most of their difficulties and are equipped to be integrated into the hearing world. An oral-only approach as against manual mode or total communication, has been staunchly advocated as a realistic and humane means to achieve this high goal. Unremitting efforts by school staff, parents, and hostel staff, supported by positive government

policies are inevitable for rendering the model feasible and successful.

A chart showing the salient features of the model is presented in the following page.