AURAL HANDICAP, SCHOLASTIC APTITUDE, SAVOIR-FAIRE-A TRIPARTITE VIEW

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AN INDEPENDENT PROEJCT WORK SUBMITTED IN PART FULFILMENT OF THE FIRST YEAR M.Sc. (SPEECH AND HEARING) TO THE UNIVERSITY OF MYSORE

ALL INDIA INSTITUTE OF SPEECH AND HEARING
MYSORE 570006

1997

DEDICATED TO

MY LORD AND SAVIOUR JESUS CHRIST

AND

MY PAPPA AND MAMMA

WITH MUCH LOVE AND GRATITUDE

CERTIFICATE

This is to certify that this Independet Project entitled

AURAL HANDICAP. SCHOLASTIC. APTITUDE. *SAVOIR - FAIRE - A TRIPARTITE VIEW* *is the bonafide work done in partfulfilment for the first year Master of Science (Speech and Hearing) of the student with Register Number Mybob.*

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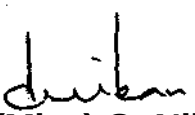

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CERTIFICATE

This is to certify that this Independent Project entitled AURAL **HANDICAP, SCHOLASTIC, APTITUDE SAVOIR - FAIRE - A TRIPARTITE VIEW** has been prepared under my supervision and guidance.

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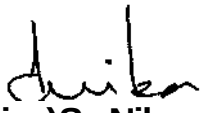

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DECLARATION

I hereby declare that this Independent Project entitled AURAL HANDICAP. SCHOLASTIC. APTITUDE. SAVOIR - FAIRE - A TRIPARTITE VIEW is the result of my own study under the guidance of Dr. (Miss) S.Nikam,Director, All India Institute of Speech and Hearing, Mysore.and has not been submitted earlier at any University for any other Diploma or Degree.

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INTRODUCTION

"Deafness by fettering the powers of utterance cheats many of their birth right to knowledge. A child born deaf cannot learn easily because he can hear nothing to imitate. How can people pickup words and weigh their value if they lack the foundation on which knowledge is built?"

Helen, Keller, On Deafness,
The Volta Review (April, 1969)

One of the main instruments by which impressions from the outer world can reach us, is our sense of hearing. Being the sense which enables us to establish contact with our fellows, this 'social sense', constitutes the basic brick of the human edifice and of communication by speech. Aural handicap, is first of all a handicap of human communication. Its major effect is to erect an unseen barrier between the deaf person and the human community of which he or she is a part. The success of the deaf person in educational attainment, in social interaction, in job achievement or in self fulfillment, depends on his breaching of that unseen barrier.

It is the absence of or retardation in langauge that marks the hearing impaired child, rather than any obvious deformity or irregularity in appearance. The language deficit in turn brings many ramifications that are both subtle and pervasive in their effects on personal social development.

Observation of an infants first attempts at words demonstrates the tremendously motivating effect of the need to produce sounds, which in the childs mind characterize the interesting toys and animals eg. 'Choo choo' (train), 'bow-wow' (dog), 'boom-boom' (car, etc.)

The child's needs for communication symbols arises from play and thus play and communication together enhance the child's degree of social participation. Deprivation of the sense of hearing forms a barrier to the development of the normal capacity for comprehension and expression of thought through words or other communication symbols. This in turn, is reflected as a serious barrier to school learning.

The education process is basically one of imparting information to children that will better prepare them for life and enable then to use their native abilities in a meaningful and constructive manner in society. When one

considers the method by which information is imparted, it becomes apparent that auditory input from teacher to pupil and from pupil to pupil countless times each day, is critical to acquiring an education as it is conceptualized by most of us.

Communication through hearing, so natural and automatic that it is taken for granted by most teachers, is available only in part or not at all, between teacher and a hearing impaired student.

School administrators assume that a child entering at age six has a rich background of receptive and expressive language (heard and spoken language), as the foundation on which the world of books will be introduced to them, imparting knowledge through the medium of the printed word. This puts the hearing impaired student at a distinct disadvantage and leads to a lag in educational achievement, reflecting the seriousness of this handicap to the imparting of the formal education process.

In pre-historic times, deafness was a baffling affliction and was permitted to remain as such. A writer in the American Annals of the Deaf in 1926 said, that the Greeks

and Romans probably had given some thought to the possibility of educating the deaf, but Aristotle, the oracle of philosophy had banned any effort in that direction with the dictum that, "the ear is the organ of education". The dictum was accepted as final, as indicated by the couplet of Lucretius, "To instruct the deaf, no art could ever reach, no care improve them, and no wisdom teach".

Now however, the trend has changed. Thanks to the indefatigable efforts of such trail blazers as Thomas Hopkins Gallaudet, Edward Miner Gallaudet (his son), Sarah Fuller, who promoted the day school for the deaf, Alexander Graham Bell, and his father Melvillae, (who among other accomplishments elevated speech to the status of a science), Caroline Yale, (who implemented many of Bell's principles), and Goldstein, (founder of the Central Institute for the Deaf, who drove home the needs of the deaf to the medical profession and who developed methods for training residual hearing), the great vision of Universality of educational opportunity for the deaf has been transformed into reality. It is because of their foresight and energy that no deaf child need be denied an opportunity for education. Education is no longer a matter of choice. It is imperative. A person with hearing-impairment (and no other problems like mental retardation, etc.), differs from a normal hearing individual

only in the sense of hearing. All other faculties and abilities are potentially equivalent to that in a normal hearing individual. Hence, any difference in abilities, must be a consequence of the sensory deprivation, and its secondary effects. In recognition of this fact, in recent times formal education of the hearing-impaired has been encouraged and implemented, in order to tap their latent potential.

Till recently, most hearing-impaired individuals received education till the high school level and then dropped out. With the advent of increased government support, job opportunities, vocation oriented courses, special educators and qualified and trained professionals to help them, more hearing-impaired individuals are coming forward to join colleges.

Most research which has compared academic performances of students with and without hearing-impairment find that students with hearing-impairment perform considerably below their chronological peers (Davis, et al. 1981), Kalay and Reed (1986). In most cases, the deficits reflect the amount of language that may be involved in the academic area.

Differences in overall skill levels apparently increases as degree of hearing loss becomes greater (Gemmill and John, 1975; Kalay and Reed, 1986). As a rule, the majority of past research studies indicate an average performance lag of 2 years, especially when appropriate audiological intervention (eg. use of hearing aids) were not used.

The inability to hear clearly can produce social and emotional problems (Meadow, 1980). A student who is deaf or hard of hearing may have difficulty in communicating with peers, developing relationships and friendships and accessing the social intercourse so critical to emotional growth and development. This affects social development and adjustment of the individual.

Johnson (1978) studied the social profile of 295 college students, at the National Technical Institute for the Deaf.

1. In terms of social knowledge, only about 13% performed at a level expected for college students, 32% at high school level and 55% at an unsatisfactory level for unemployment.

2. In terms of social decision making, 95% needed improvement, 84% needed improvement in terms of social reasoning.

3. In terms of various levels of interaction, interpersonal interaction was significantly better than group interaction, but it was still relatively low.

4. In terms of social behaviour, 66% were considered to be performing at a college level, while 34% needed improvement.

5. In terms of career development, 78% were below college level. This included performance on tests which measured work related skills and attitudes.

Thus, we see that aural handicap, has an effect on the scholastic aptitude and savoir-faire of an individual.

NEED FOR THE STUDY

If at all the aurally handicapped individual manages to swim against and across the swelling tide of myriad difficulties, complete high school and then prpceed for a college education, what are the problems they face? Are they able to cope? Has the hearing-impairment taken its toll? For after all, even if only one sense is different, the whole of the individuals life experiences are different?

Subtle changes in personality, adjustment, behaviour, etc, do they exist? If so, what are those effects of the aural handicap on scholastic aptitude and social tact? this study, is aimed at shedding light on this aspect, with a view that this will enable a better understanding of the status of hearing impairment in college students, as most studies undertaken in this regard, have been devoted to the effects in childhood or school age. In fact, the older one gets, the vider the possible gap between a person with an impairment and a person without such an impairment, because of greater demands made by society, educational performance, job, etc, and greater the feelings of inadequacy or inability to cope. During childhood, generally ignorance prevails and one does not bother much about such differences. As one gets older, one starts thinking about life in general and of oneself in particular, especially during the adolescent college years. Even the smallest of disadvantages will take on larger dimensions in the competitive rat race in this world, and prove a major set-back. Hence, to unveil these aspects in college students in India, this study is being undertaken.

REVIEW OF LITERATURE

To facilitate a better understanding of the present study on the relationship between aural handicap, scholastic aptitude and savoir-faire, a brief overview is presented of past literature pertaining to the effect of hearing loss on intellectual and mental functioning, problems faced or factors which could hinder optimum scholastic performance and also how emotions, personality, psychosocial and emotional adjustment, social interaction, etc. are moulded with respect to the hearing loss.

The topics will be discussed under 2 broad categories (1) scholastic aptitude (2) social tact.

I. Under scholastic aptitude, the aspects being-considered are :

a) Intrinsic variables

-> Mental development and intelligence
-> Memory
-> Abstract abilities
-> Age of onset of hearing loss
-> Degree of loss and potential for amplification.

b) Extraneous variables

-> Teacher/parent/peer attitudes and midsets.
-> Environmental factors.

II With regard to social tact, a psychological profile of the hearing-impaired is presented with literature pertaining to

-> The self-concept of the hearing-impaired.
-> Personality
-> Social and emotional adjustment
-> Social maturity
-> Factors which contribute to the development of the overall psychological profile seen.

I SCHOLASTIC APTITUDE

Adolescence is complex and bewildering. Deafness creates invisible, though not invincible educational complexities.

A number of road blocks must be negotiated before mainstream education of the hearing-impaired, can be elevated to a successful conclusion.

A. Intrinsic Variables

Deafness, Mental Development and Intelligence

Man matures in 3 primary ways - physically, emotionally and mentally. Pintner known as the father of the psychology of deafness first indicated a relationship between sensory deprivation and growth of intellectual capacities, in the 1920's.

Pintner concluded from his studies, that children deaf from early life were below average in mental capacity. He explained these findings saying that diseases causing deafness also affected the brain and caused M.R. In reality, however, the nature of the relationship between deafness, mental capacity and intellectual functioning is more complex.

Generalisations regarding the intellectual capacities of this group cannot be made only on the presumption of relationship to etiology only on the basis of exogenous and endogenous factors.

Many workers have emphasized the importance of stimulation and experience in the mental development of children with normal sensory capacities. Schilder (1942),

Soddy (1956), Kanner (1957), and Bowlby (1952) have shown relationship between early life experiences and intellectual behaviour.

Piaget (1950) especially, has stressed the significance of hearing, vision and symbolism as the foundations of intelligence. The child having deafness from infancy lacks auditory experience and verbal symbolism.

Presumably, non-verbal auditory experience is of importance in mental development.

A philosophical position commonly held is that without language, there is no thought and inferentially, there is no intelligence of the type associated with the human being. This implies that, if language development is precluded, mental development will be affected.

If normal language development is necessary for normal development of psychological processes and learning, then the mental growth and intellectual functioning of the deaf child will not parallel that of the hearing child. On a broader basis, even the pre-verbal experience of the child, deaf from infancy, is different from that of the hearing. His experience does not include audition. Hence, his non-verbal

behaviour, such as perceptual processes, is established and structured differently, and one cannot hence avoid the probability that such a handicap might preclude actualization of true intellectual potential.

One important consideration is the way in which mental ability is tested. Non-verbal or non-language mental tests must be used especially with those who are prelingually deaf and also those who are post lingually deaf, if their language level is not good enough.

In some instances, although the hearing-impaired secure the same test scores as the hearing, they require specialized interpretation. A common example is the lower correlation between intelligence test scores and academic achievement for the deaf as compared to the normal hearing peers. Apparently, the individual with marked language limitations solves the test problem by different psychological processes even though he earns the same score, and the mental task becomes a different problem on the basis of the abilities available for solving it. This means that the assumptions of the test derived from its standardization and use with the hearing do not necessarily hold when the same tests are used with the hearing-impaired. This generalization seems to

apply to both verbal or non-verbal tests. Therefore, psychological tests should be standardized on the deaf and the hard of hearing, to be most effective.

The range of the intelligence levels of the hearing-impaired does not differ from that of the normal hearing individual. There are brilliant, average, dull and mentally retarded deaf and hard of hearing individuals, just as in the population of the normally hearing.

An extensive survey of mental and educational capacities of hearing-impaired children, was done by Pintner and Reamer, (1920). The study included 2172 children of 26 schools for the deaf in the US. The foremost conclusions were, that deaf children on the average, are 2 years retarded mentally and 5 years educationally, (of which 2 years can be attributed to mental inferiority and 3 years to language handicap resulting from deafness with onset early in life).

A number of early workers used a single test such as the draw-a-man test to appraise the intelligence of deaf children. Varying results are however reported.

Zeckel and Vander Kolk (1939) used the portEus Maze test in a study comparing the congenitally deaf with the normally

hearing. They concluded that deaf children were mentally retarded and that deaf girls were more inferior than boys. Their explanation was that deafness from birth had an impact on psychological processes in general and that the narked language limitation resulted in a permanent effect on mental development. It is interesting that these early workers emphasized this conjunction between deafness and intelligence. They did not say that both inferior mentality, and deafness were present, but attributed the intellectual deficit to a reciprocal effect of the deafness itself. This is significant in view of more recent work in which this type of relationship seems predominant.

Gradually, it became clear that although the deaf child may be quantitatively equal to the hearing child, significant qualitative differences in his mental functioning had to be considered.

Deaf children fall below average mainly on tests which require a type of abstraction and reasoning process.

Treacy (1952) administered Thurstone's primary mental abilities test on deaf and hard of hearing children. The factors measured were verbal meaning, spatial ability,

reasoning, perceptual speed and number ability. The results showed that the total intelligence quotients for the deaf and hard of hearing were slightly below average, but were within the normal range. But on verbal meaning and reasoning, there were significant differences between the deaf and hard of hearing as they had acquired more language facility and hence higher level of verbal meaning.

Under normal circumstances, the left hemisphere is considered to be uniquely specialized for speech and writing and to be dominant for other language skills as well as for analytic, serial and time dependant processing. In contrast, the right hemisphere is considered to have a greater role in visuo spatial task performance, musical patterning in holistic or gestalt processing. One of the theories offered for left hemisphere specialisation of language skills is that the left hemisphere is a serial processor and that spoken language is primarily a serial skill (Gordon, 1974, Tallal, 1981).

Those whose hearing is significantly impaired, regardless of their preferred communication mode, miss out on a major portion of the highly sequential and temporal input that is conveyed auditorily and instead, rely more on visual sources that are inherently less sequential than the auditory

mode. One hypothesis, especially for the congenitally hearing-impaired, is that early deprivation of sequentials stimuli may decrease development of the left cerebral hemisphere and also, the compensatory dependance on visuospatial stimuli may potentiate right hemisphere development. Thus, a hearing-impaired person might become quite asymmetric in cognitive processing of information, relying heavily on the right hemisphere and neglecting the left, even for language tasks.

Craig and Gordon (1988) evaluated the performance of hearing-impaired adolescents on tests of specialised cognitive functioning. Results indicated that cognitive function was below average for the verbal and sequential skills associated with the left hemisphere, but above average for the visuospatial skills associated with the right hemisphere.

Deafness and Memory

Virtually all behaviour especially, learning, entails memory. Memory is the ability to associate, retail and recall experience. The individual with deafness lacks not only a channel through which to receive and record

experience, he lacks a sensory avenue through which to associate and thereby to recall experience.

Although it appears that deafness affects memory, certain aspects of memory develop normally. Because of the sensory deprivation, memory functions may vary in quality and nature. Because alerting mechanisms and perceptual organization are different, specific memory functions may be superior as compared to those with normal sensory capabilities.

Hiskey (1956) found the deaf child inferior to the hearing on memory abilities. He explained this as a limitation in symbolic behaviour. He observed, that hearing children who were studied, often verbalised the names of colours or of numbers while performing memory tests. Presumably, such verbalising which the deaf children could not do, enhanced their performance on this task of memory.

However, on a memory task in which verbalisation is difficult or impossible, but which can be performed solely through visual observation, e.g. The Knox Cube Test which measures an individuals ability to observe, organize, retain and reproduce patterns of movement, the deaf were superior. This may be because, the individual with deafness from early

life is of necessity dependent on visual cues which are irrelevant when hearing is normal. Therefore, his visual perceptual processes develop differently according to his organismic needs i.e. they may develop to an extent not required when sensory capacities are normal. However, this alteration of visual perceptual behaviour indicated by use of the Knox Cubes Test, does not transpire unless deafness is profound. Binet, in 1916, first used memory for designs as a test of intelligence. It was studied on deaf children by Blair (1957); using the Graham Kendals Test. He found that, the deaf were superior to the hearing. Also, he observed that, while the hearing attempted to make associations such as "This looks like a box", etc., the deaf simply observed and reproduced. The hearing apparently found it necessary to try to generalize to past experience while the deaf performed the task without such attempts. Perhaps this is why the deaf exceeded the hearing in such mental functioning. It may be presumed that the deaf performed the task more concretely, their performance being at a more perceptual level.

These results provide additional evidence that deafness from early life does influence mental development and the use of intelligence.

Fuller (1959) used a test of motor memory to study the growth of intelligence in deaf children, which consisted oi raised mazes which the subject traces with his finger while blind folded. The examiner assists him in tracing the correct pathonce, then the subject must retrace it without assistance. He found the deaf superior to the norm for hearing children. This study indicates that deaf children rely more on tactual motor organisation psychologically anc hence, perform at a higher level of ability as compared to the hearing.

Both Blair and Fuller noted an unusual characteristic of the performance of deaf children on the digit span test - the deaf did almost equally well on digits reversed as they did on digits forward and the mean score on digits reversed was even better (Blair, 1957). The normal individual remembers digits forward substantially better than digits backwards. It seems that the processes of 'recording, organizing and retaining might be different neurologically and; psychologically. The close relationship between memory and learning suggests that the implications these findings bear on the psychology of learning in students having deafness from early life, are of importance, though not very clear right now.

Deafness and Abstract Abilities

There is general agreement that man's ability to behave abstractly is one of his unique achievements.

McAndrews (1948) studied concrete abstract functioning in deaf, blind and normal children and concluded that the deaf engaged in more concrete behavior than either the blind or the normal.

Templin (1950) also studied the abstract reasoning processes of deaf children and found then to be significantly inferior to the hearing. However, it is not possible to generalise to the extent of saying that deafness influences all types of behavior. Rather, the type of abstraction becomes a critical consideration.

Halstead (1947), Reitan (1955), have shown that certain psychological functions correlate with specified areas of the brain. Psychological functions requiring language i.e. psycholinguistic abilities are localized in the left cerebral hemisphere for right sided individuals. Moreover, psychological functions such as spatial perception and other non-verbal abilities are localised in the right hemisphere,

making it possible for some psychological processes to function irrespective of verbal function. Nature seems to have differentiated neurologically in terms of verbal and non-verbal processes. In the normal person, both are used interchangeably and supplementarily. Deafness in infancy impedes development of language and thereby limits the verbal reasoning processes characteristically localized or the left cerebral hemisphere. Such a handicap would not directly preclude development of the nonverbal psychological processes characteristically localized on the right hemisphere. This might explain some of the findings of abstract behaviour in deaf persons.

Implications of Deafness for Education, Learning and Adjustment :

It can no longer be assumed that the structure of intellect is determined completely by heredity. This is demonstrated by sensory deprivation because if stimulation and training do not take place, intellect itself is formed differently. The extent to which mental operations are determined by heredity and through training is not known even for the normal.

While it is apparent that deafness has an effect an intellectual functions a generalised effect is not suggested. Deafness affects specific mental operations more than others. The presumption is that those aspects of intelligence, those mental operations which are not affected adversely should be capitalized through training and education.

The factor theory of intelligence and factor analysis technique can be used to classify the impositions and implications of deafness in relation to intelligence. This theory holds that there are unique mental abilities and that an individual might be high on certain of these and low on others.

Guilford (1959) classified factors of intelligence into 5 types of mental operations - cognition, memory, convergent thinking, divergent thinking and evaluation. They may be defined as follows:

1. Cognition - ability to recognise and to see relationships.
2. Memory - ability to retain and recall.
3. Convergent thinking - ability to see the best and logical order in a given sequence, to see relationships of given information.

4. Divergent thinking - ability to elaborate from given information, trial and error thinking, originality and variety in associations.
5. Evaluation - judgement of goodness, adequacy, suitability and adaptation of the given and familiar to new and unusual purposes.

Divergent thinking and evaluation ability both appear to be affected by deafness. These mental functions entail use of experience more broadly, with fluidity, flexibility and generalizing ability playing a significant role.

There are nonverbal aspects in all mental operations, understanding the behavior of others and of ourselves is largely non verbal in character. Many problems of the divergent thinking type and many judgemental problems are nonverbal and there is clear indication that specific training in these functions should be given to those having deafness from early life.

Categories of activities can be outlined. Certain training procedures now used with deaf children emphasize given to the child's need for training in memory abilities, such as memory for digits, dot patterns, and word sequences

because correlation statistics indicate that if these types of intellectual behavior could be improved, there would be a concomitant increase in all verbal behaviour, especially in reading.

Other intrinsic variables which affect an individuals scholastic performance include -

1) Age of onset of deafness

Hearing loss which is congenital or prelingual, in onset, poses a greater disadvantage to academic excellence, due to lesser auditory experience.

Severity of Deafness and Scope for use of Residual Hearing :

Differences in overall skills apparently increases as the degree of hearing loss becomes greater Gemmill and John (1975); Kalay and Reed (1986). This is because the greater the degree of hearing loss, the lesser the residual hearing and hence the lesser the effectiveness of amplification. This is especially true in areas of vocabulary and reading comprehension, which are so essential for formal education.

This is probably why most research which has compared academic performances of students with and without hearing impairment find that students with hearing impairment perform considerably below that of their chronological peers. (Davis et al, 1981; Kalay and Reed, 1986) . As a rule, the majority of past research studies indicate an average performance lag of 2 years, especially when appropriate audiological interventions (eg;- use of hearing aid) were not initiated.

Extrinsic Variables

In addition to the intrinsic variables, there are a number of extrinsic variables which greatly affect the hearing impaired individuals scholastic performance. These relates to classroom situations, teacher's teaching style, rate, attitudes motivation, peer/classmate interaction, etc. According to Gjerdingen and Manning (1991), adolscents, even those with the most profound hearing impairment can be successful in mainstream education with other normal hearing individuals.

Three parties are involved in this process:-

a) The adolescent with developing abilities, interests and limitations.

b) The family as a supportive group that stimulates, rewards and appreciates the student's learning.

c) The school as a specialised agency that directs focuses and accelerates learning by providing selected materials, experiences and skilled teachers.

Many of the challenges adolescents face in mainstream education stem from the lack of knowledge people have about hearing impairment. On the one hand, professors in regular colleges have very little first hand experience with hearing loss. They simply do not understand what students with hearing loss hear or do not hear. This leads to confusion about the effects the hearing loss has on a students ability to communicate and learn in a regular classroom. Stereotyped ideas and expectations abound, forming the basis for academic, social, and psychological misunderstandings that impede the normal educational process.

Hearing-impaired students themselves often don't realise or properly understand the effect their disability has on communication, why education can be difficult for them, or why their social life is not more satisfying. This in turn can lead to the development of a poor self image and to needs and concerns which they might not be able to express clearly.

The amount and pace of work

Most hearing-impaired students report that they struggle to keep up with the volume of information in their classes. More importantly, they say that this prevents them from having time to learn the material well, which frustrates them because they vant to more than just get by.

For this problem, it will help to place students on an academic level at which they will be challenged, yet provided with supportive and informed teachers, and also one-to-one tutoring by a person who is experienced with the subjects on that particular academic level.

Classroom discussions

Classroom discussions that move rapidly and involve many people are very difficult for a hearing-impaired student to follow. The pace is too rapid and also many hearing students do not practice good public speaking skills, making direct peer to peer communication almost impossible.

For this problem, reading ahead, making use of a note taker and studying with another student may help. The hearing-impaired student should be seated at a vantage point

which enables a clear view of both the teacher and all the classmates so that he can see them properly.

Teaching techniques which help are, outlining, repeating, paraphrasing, etc. An interpreter will help eliminate the need for the student to scan the class to locate the next speaker and due to its instantaneous and on going nature, the interpreting allows the student to feel more a part of what is happening in the classroom.

Social Isolation

Social isolation is one of the greatest challenges faced by the hearing-impaired student in a mainstreamed educational set up. It results from lack of knowledge the hearing people have about deafness; the relatively low level of skill students with impaired hearing exhibit in communication encounters and a lack of understanding among the students, of ways to cope with social interactions.

For this problem, the hearing-impaired students can improve their talents and then interact with hearing peers in extracurricular activities where they can display their abilities.

For success in education, the adolescent must possess the basic learning skills that are prerequisites to processing information that hearing classmates will be required to learn. They should have good preparation in the medium of instruction (language) - reading and writing skills in particular. Since most deaf students do not have a strong language base to build on, many of them do not read as well as their hearing peers.

Prior to placing the hearing-impaired student in a course, the student must be prepared academically and have at least standardi2ed academic test scores that are well within the range of those with whom placement is to be made. eg. Although a 10th grade reading level is not necessary in order to succeed in the 10th grade, a III grade reading level will definitely be detrimental in an academically challenging 10th grade class i.e. unless the hearing-impaired are academically prepared for it, such students are better served in specialized educational institutions or in settings geared to their individual skills. The adolescent must also be emotionally and socially prepared.

Muller (1986) said that prior success predicted continued success more than any other variable. It leads to a positive self-image. Too often, when dealing with a

disability, the emphasis is on what students cannot do rather than what they can do. So, if the hearing-impaired adolescent has at least one area in which he is as good as or preferably, better than peers, it will lead to greater self-esteem and the feeling of being in control and able to complete.

- There is a saying "People tend to live upto, or down to your expectation of them". It is very true with respect to the hearing impaired. A study done by White (1990) shows that teacher's expectations have a powerful influence on the speech development of the hearing-impaired child. High expectations increase efforts and empower them. Low expectations depress efforts and negatively affect the student's perception of their own abilities in this area.

According to Maxon and Brackett (1983), regular education classroom teachers, especially those with no prior experience with hearing-impaired children, tended to underestimate the degree and amount of difficulties that their hearing-impaired students were experiencing. Teachers reports about the hearing-impaired student are often based on different, less strict classroom success criteria than for the normals.

In a national study by Allen (1989), approximately one half of the deaf students leaving high school graduated with a diploma. One of every 5 did not meet the academic requirements for the diploma, but exited with a certificate.

Possibly, lower standards or laxer criterion for performance was used for the deaf. All this is bound to have an effection the students approach to academics and the goals, standard or level of attainment he wishes to achieve and his motivation.

Walker (1993) did a study on a highly successful unit of profoundly prelingually hearing-impaired students with a wide range of academic potential. They say that the excellent results which have been obtained by the hearing-impaired students of average intelligence at this hearing unit suggests that given high expectations, dedication by the student, exposure to the life of a regular school, parental commitment to education, intelligent support by competent teachers and well-planned programmes, a hearing-impaired student could expect to follow similar career paths to his normal hearing peers.

Geers and Moog (1989) did a study on 100 profoundly hearing-impaired adolescents. Results of their study support

the view that, children with profound hearing-impairment who have a combination of favourable factors including at least average nonverbal intellectual ability, early oral education management, auditory stimulation and middle class family environment, with strong family support, have a potential for developing much higher reading, writing and spoken language skills than reported for hearing-impaired people in general. They said that it is possible for profoundly hearing-impaired students, by the time they are 16 years old, to achieve reading skills commensurate with those of normal hearing students. They said that the primary factors associated with the development of literacy with their hearing-impaired adolescent subjects, was good use of residual hearing, early amplification and educational management, and above all, oral English language ability including vocabulary, syntax and discourse skills.

Nober, Nober and Murphy (1980) studied a mainstreamed program for the deaf students, initiated by the California State University (CSUN). The program provided deaf students enrolled in regular college classes with notetaking services and interpreters and guidance and vocational counselling at no cost. The program also included conducting assistance seminars, courses on teaching sign language and orientation

for both instructors and hearing students. Studies done on the academic achievement of the deaf students there, in terms of grade point average report scores were relatively equivalent to hearing peers. They concluded that the 2 groups were equal in their academic success. This is perhaps due to the training program for the teachers of the special services and help given to the deaf. Some of the instructors made use of the following to help their deaf students.

1. More visual aids
2. More black board work.
3. Objective examinations
4. Personal interaction with the student.
5. Special assignments
6. Emphasis on subject content and less on syntactical structure.
7. Reviews/recaps after some amount of teaching.
8. Take home examinations.
9. Use of interpreter - however, problems like interpreter absenteeism, conveying misinformation, conflict of interest, etc. arose sometimes when interpreters were used.

Saiur, Layne and Lawrence (1981, 1986), identified a number of barriers to active classroom participation. They

include a lag in the interepreted message and varying rates of class discussion and numbers of speakers taking part as well as language and cultural barriers. They said that instructors can help students surmount these barriers by practicing effective classroom management.

Sour, Poppstone, and Lawrence (1987) studied hearing-impaired college students. The study dispelled 2 stereo types of mainstreamed hearing-impaired students.

Stereotype (1) - Those who are successful are the ones who have least amount of hearing loss (i.e. those with mild rather than profound loss.

They found that, past achievement, rather than speech ability and degree of hearing loss shows the strongest positive influence on this classroom achievement.

Stereotype (2)- Hearing-impaired students are passive or unresponsive in the regular classroom.

They suggest that lack of participation is more a function of the communicative situation rather than that of the students themselves (interpreter lag and other difficulties discourage participation).

In 1987, the U.S.Congress created the commission on the education of the deaf (COED), to identify issues involved in educating students with hearing impairment. The commission identified 210 factors to consider when designing the individual education plan for any student (COED, 1988; pp. 20-24) for ensuring success in the mainstream. the 10 factors, are :

1. Communicative needs and the preferred mode of communication.
2. Linguistic needs
3. Severity of hearing loss and potential for residual hearing.
4. The child's academic level and style of learning.
5. Social needs.
6. Placement preference
7. Emotional needs
8. Individual motivation
9. Cultural needs
10. Family supports

Many hearing students resented hearing-impaired students getting special attention from teachers (Lynas, 1986). They felt that some help should be given, but not too much and

that it was not fair on the normal hearing students. Additionally, they felt that hearing-impaired students got away with things such as failing to complete homework, with no repercussions. This differential status led to some alienation of the hearing-impaired students from their hearing peers,

This was reiterated by Brown and Foster (1989). They reported that, in the standard college classroom, environment, some hearing students felt jealous of the extra attention that hearing impaired students seemed to receive in the form of notetakers, etc.

In the competitive atmosphere of a college course, any perceived advantages accorded to only a few students could be viewed quite negatively by the other pupils, and not accepted socially. For promoting social acceptance or encouraging positive interaction, according to Allport (1954) participants should have co-operation and not competition with each other; the participants should be of equal status; there should be supportive institutional norms; and no perceived dissimilarity between the groups to reduce prejudice.

At a higher level of education, the problem for the hearing handicapped is that, the content material becomes so great. A strict oral presentation of vocabulary and sentence and paragraph meaning cannot possibly be acquired by the deaf except in a few exceptional cases. Therefore, professional courses which lead to occupations which require hearing, intelligible speech or fluent language, present obvious barriers.

The gap between the reading and to a lesser extent, mathematic level of many deaf students and their hearing peers has been documented by many (Allen, 1986), and is one which puts young deaf persons at a serious disadvantage in the competition for professional, better paying jobs. Until the acadmic gap betweent hearing and deaf students is bridged, the latter will remain at a distinct disadvantage in the competition for jobs.

There is often a double language obstacle, one that is Tightened when home language is different from the English speaking and reading world of basic business, work and post-secondary educational programme. The question, what role should schools play in vocational preparation of deaf students, entails a variety of philosophical and practical

concerns. Educators must decide whether vocational training is in the best interest of their deaf students. Placement in vocational courses reduces the proportion of instructional time available for academic instruction. Thus, many deaf students, arrive at high school with reading levels comparable to those of hearing students in the III grade. The reduced emphasis on academic instruction implies that substantially increasing the literacy levels of deaf youth is not possible. Jobs of the near future will require higher levels of literacy and mathematics. Therefore, placing students in vocational tracks where reading and mathematics are deemphasized, may prove to be barriers to these students by limiting their opportunities to acquire important academic skills.

At the same time, a basic tenet of vocational education is that schools have a responsibility to contribute to a students preparation for the work place, often by providing training in specific skill areas.

Older students, especially those enrolled beyond the age of 18 years, are more likely to be in prograns where they received all or mostly vocational training, i.e.. Educational programming increasingly focuses on vocational preparation,

with less school time spent in pursuit of remediation of academic deficits.

Also, the types of vocational courses taken up by deaf students tends to follow social stereotypes. According to studies done by the centre for assessment and demographic studies (CADS, 1989), in the U.S. E.g.

Males - Construction and computer related courses are the most frequently reported.

Females - Office work and home economics

Thus we see that the hearing-impaired students' scholastic performance is affected markedly by their hearing loss. Their thought processes, and intelligence develop qualitatively differently, their abilities vary depending on the type, degree and age of onset of loss, and if there is a great severity of hearing loss, amplification is not very useful for learning and listening to speech. Even if amplification is used, extraneous noise in and around the class can be amplified and interfere with the teacher's message. The student, especially the one with greater degree of hearing loss has to rely on speech reading to understand lectures and if visibility is hampered by poor lighting, or

if the teacher turns to the board etc. and still speaks, much information will be lost, resulting in gaps in comprehension, so the continuity will be lost and the student may be unable to follow. Also, if the teacher is too fast and if more than one person speaks during class discussions where there is rapid exchange of information, the student will have difficulty, as by the time he locates who is speaking, another person may have started to speak. This can be reduced by proper class organisation and management by the lecturer people standing up and facing the hearing impaired student and speaking, adequate lighting, seating the student in a place which enables viewing of the teacher and the students, sitting next to a hearing student so that he can see lecture notes, etc.

The hearing-impaired student also has poor linguistic skills which is a handicap, especially at higher levels of formal education.

All this, coupled with prejudices, lack of understanding by teachers and peers as to his problems, low expectation levels, and a laxer criterion for performance, make the hearing-impaired student develop feelings of frustration and have lower motivation for academic excellence.His scholastic performance is thus on the average, below par.

II SOCIAL TACT. (PSYCHOSOCIAL, EMOTIONAL AND BEHAVIORAL EFFECTS)

Adolescence is a process of complementary and interweaving developmental phenomena, the most important of which are qualitative changes in physical growth, emotional and social maturation, intellectual development and sexual identification. All of these interact with cultural forces imposed by society.

According to Ginot, (1969), Adolescence is a period of curative madness, in which every teenager has to remake his personality. He has to free himself from childhood ties with parents, establish new identification with peers, and find his own identity. This transition, from the dependence of childhood to the self sufficiency of adulthood, requires significant growth in physical, intellectual, social and emotional areas.

Just as the population of hearing adolescents, the population of deaf adolescents also varies in potential and demeanor. The fact that they have a common defect does not level all of their other attributes. Some will be able to cope with the disability with greater success than others because of individual differences in other areas.

Each deaf person should be encouraged to manoeuvre through life to his or her best advantage. However, it is reality that few prelingually deafened persons comfortably socialize and identify with hearing people.

Effects of deafness on Social and Emotional development:

Social and emotional development results from communication, by means of which the values and mores of the community are imparted to the person by means of which the feelings and experiences of the person are given some shape and by means of which the person learns, by manipulating verbal symbols to manipulate his own thoughts, feelings and overt behaviour. Emotional and behavioural control are learnt through human communication no less than any other aspect of human life, and so, the handicap of deafness intrudes here as well.

The deaf baby does not hear the baby talk, the cooing of his mother; he does not hear himself of others laugh, or cry. He does not hear the inflectional and intonational meanings which often convey more significance than the words themselves. Presumably, it is through intonation and do that biases and prejudices usually are passed from father and son.

While scientific evidence is lacking, experienced educators of the deaf have observed that people deaf from early life often do not acquire the same biases and feeling of taboo that characterize the normal population. Perhaps they do not acquire these feelings in the same way because they do not hear the innuendos and other unverbalized meanings which are so much a part of daily conversation.

The question arises as to the significance of not hearing the myriad non-vocal sounds which we call noise, eg:- it is only if the dogs bark is heard that it causes feelings of fear. A basic aspect of personality development, is identification. Identification refers to the unconscious development of feeling and attitudes similar to those of the peers, especially of the same sex group. eg:-Personality disorders may arise of females identify with males and vice versa.

Myklebust (1957) and Mowrer (1950) have emphasized, that identification seems fundamentally related to language acquisition itself. More broadly, audition must play a significant role in the total development of feeling of identification.

Conversely, it is more difficult to develop such feelings when the many sounds which enhance interpersonal relationships are not heard. When identification is restricted, it is reflected especially in ego development, personality development, etc. (Bowlby, 1952; Spitz 1959; Goldfarb, 1945; Ribble, 1943.}. They have stressed that preverbal experience is consequential to later emotional well being. They have revealed that isolation, lack of stimulation and lack of interaction between the infant and his parents might have a disintegrative effect on the emotional growth of the child. The child having deafness from infancy, according to Pellet (1938), has a long pre-verbal period. While he learns to use gestures, he is largely non-verbal for a period of a few years. Yet, he, must identify learn to conform, dress, feed himself and to maintain adequate emotional relationships with his environment. Although deprived of an important avenue through which to learn about society's demands and expectations, he must make an adjustment between his environmental circumstances and his inner needs.

Isolation is an important factor in the emotional adjustment of the hearing impaired. (isolation resulting from a hearing loss) the antennae like distance sense is

impaired. There are many psychological ranifications, Audition not only provides information about external happenings, it provides a mean for monitoring our thoughts an feelings. Hebb, (1958), stressed the importance of this function through experiments with artificial sensory deprivation. When the normal individual is isolated, deprived of sensory stimulation and removed from other people, he becomes disturbed and hellucinated. He no longer has the means to where by he can monitor his own feeling and ideas. A fundamental criterion for maintaining emotional stability is being able more or less continuously to compare one's thinking and feeling with others. This type of monitoring seems essential to maintain a firm hold on reality so as not to escape into autistic behaviour. Deafness, especially sustained in early life, makes monitoring of one's feelings, attitudes and ideas more difficult. The individual naturally is more isolated with the implication that he must be more detached and autistic. Most persons having hearing loss, even when the extent is moderate, must achieve monitor is and realistic contact by other means, notably through vision and taction.

The use of hearing aids lessens, but doesn't eliminate this problem.

Deafness can result in isolation in various ways. Intimate contact with families of deaf children discloses that its difficult to keep the hearing-impaired child informed of daily occurrences and circumstances. There is a deficiency of total experience, which forms the basis of feelings, attitudes and personality per se.

It has been hypothesised that a relationship exists between deafness, personality development and emotional adjustment. Deafness alters experience, causes an imposition on monitoring and forces detachment and isolation. Language is viewed as a significant factors in the development of personal social contacts and interaction. Language is assumed to be the primary means whereby experience is internalised crystallized and structured. Hence, when language is limited, there might be a reciprocal restriction in ability to integrates experience. The personality might be less structured, more immatures, less subtle and more sensory motor in character.

In the study of the psychological consequences of deafness two of the most critical variables are

1) The age of onset
2) The degree of impairment.

Degree of loss

Variations of involvement can be expected according to at least 4 levels of hearing loss.

1. A loss of 30-40 dB HTL.

This is a moderate loss, affecting mainly the scanning and background functions of hearing. It is also the point at which conversation becomes difficult without amplification. Psychologically however, it is the impaired awareness and the environmental detachment which are of most importance.

At this level, the restriction imposed on communication can be alleviated by getting closer to the speaker and by the use of amplification. Thus, not socialization, but basic awareness and monitoring suffer the most.

2. A loss of 45-65 dB HTL.

* Social interaction is clearly affected.
* Background-foreground use of audition is essentially precluded.
* Because the. scanning function of hearing is largely eliminated, the individual responds only in is foreground

manner; whenever he hears, he scans, then treating all sounds at it first reaches his threshold as a sound requiring direct attention.

* Conversation is readily possible with use of amplification, but because he must give all sound equal attention, conversation is essentially limited to one person or to a small group.
* The individual experiences considerable detachment and seeks social relationships with others having a similar degree of deafness.

3. A loss of 65-80 dB HTL.

* Use of amplification on though effective for maintaining social interrelationships, is less satisfactory than for those in group.
* Both personal-social and general environmental contact is difficult. There is need for considerable reliance on other systems for monitoring, particularly on vision and taction. Feelings of identification are impeded and personal-social relationships are most satisfying when they are with others having deafness, usually to a similar extent.

4. A loss of 80-100 dB HTL

* Profound loss. Use of amplification is effective mainly in maintaining intelligible speech and focussing attention to loud environmental sounds. The use of vision and taction as mandatory in maintaining homeostatic equilibrium.
* Personal-social interaction with the normal hearing is arduous.
* Most social relationships are with others having profound deafness.

This classification is given as an indication of the importance of the degree of loss, psychologically. However, behavioral reaction to deafness, like all human behavior, is complex, and other factors like age of onset should also be considered.

Eg. Degree of involvement at level 4 (profound), sustained in infancy will have greater compact on all aspects of behavior than of it occurred in adulthood.

Age of onset

1. Prenatal or before 2 years

This group has the greatest effect on ability to communicate, with implications for impact on personality and

emotional adjustment. Basic psychological processes such as identification are disturbed. When deafness is profound, isolation is more apparent than in any other group. Reliance on vision and taction may be marked. Specialized educational training is required.

2. 2 to 6 years

There is evidence that if a child hears normally for the first 2 years of life, he not only has some benefit verbally, but the psychological effects of his hearing loss may be lessened. This is true, particularly the later the onset occurs before 5-6 years of age. After 5 years, there is a noticeable advantage verbally, with concomitant advantage to personality development and structure.

3. School years

Language function is well retained for inner language purposes and in other ways. The greatest effect is on personal and school adjustment; often special education is necessary.

* Friendships and identification with the majority group are difficult to maintain, but ego development and general emotional growth are less affected than for groups (S) and (I). They often before leaders in the deaf community.

4. Early adulthood (18-30 years)

Except for those deafened by diseases like meningitis, degree of deafness is often moderate.

* Basic personality patterns are not altered, although undesirable traits may be accentuated.
* Disturbance of social relationships, including marital plans, educational programs, and vocational choice often is severe.
* Attitudes and patterns of behavior may be characteristic.
* Choice of friends and social contacts may shift to others having impaired hearing.

5. Early to late adulthood (30-60 years)

* Marital adjustment may be affected.
* Common problem is occupational status. A complete shift of career may occur.

* Change of friends and social group also occurs frequently, with the possibility of characteristic attitudes developing on the basis of sensory deprivation.

6. Later life (Presbycusis)

Basic effect more in terms of increased withdrawal and isolation, increased in security and emotional stress rather than an effect on personality per se. This is the age group that is threatened with mandatory retirement, lack of employment, and the need for assistance with a gradually developing problem in self-care. In society, they often feel useless and unwanted. Hearing loss can be a significant factor in this matrix of factors, precipitating anxiety and depressive episodes. Usually, the isolating effect of the inability to maintain social contact auditorilly can be readily recognized.

Thus, the greater the extent of impairment and the earlier the onset, the more a characteristic personality pattern seems to emerge.

Also, because a given culture has patterns such as typical ages for marriage and for beginning an occupation, a hearing loss has critical implications for each group.

Prevalence of psychosocial and emotional problems among the deaf.

Rawlings and Trybus (1978) reported that there were 1482 hearing-impaired children of school age with severe social emotional behaviour in the US.

Moores (1978) - stated that approximately 28% of the school age population with hearing problem consistently exhibit one or more asocial behaviors.

Self-concept/self-perception of the hearing-impaired adolescents

Self-concept may be defined as the sum total of the perceptions an individual has of him or herself, composed of unique attitudes, beliefs, evaluations, and behavioural tendencies (Burns, 1982; Felker, 1974; Warren and Hasenstab, 1986; Wylie, 1978).

A positive yet realistic self-concept is associated with optimal development. Intuitively, it is liKely that the self-concept of hearing-impaired adolescents will be particularly vulnerable.

The way hearing-impaired adolescents perceive themselves and define their identities has ramifications for the way they live their lives. Their serse of self-worth and confidence in dealing with personal environments in the realms of family life, school, work and socialisation, emanate from their identities, perceptions and interpretations of the various activities of their lives. These in turn impact subsequent life events in a rather circular fashion. Hence, these are crucial components in the process of individual adjustment.

As Hartup (1989) notes, evidence from recent studies suggests that effectiveness in dealing with the social world emerges largely from experiences in close relationships. These experiences also give rise to language development and a repertoire for coordinating ones actions with those of others, self-knowledge and knowledge of the world.

Salient relationships can be vertical with individuals with more knowledge and power like teachers, parents, and horizontal i.e. peers.

The presence of a handicapping condition can modify the individual view of himself/herself and result in a poor self image (Roessler and Bolton, 1978).

One of the negative outcomes of limited social expectations and experiences is poor self-concept. Sussman (1973) found that most of the deaf people in his study had negative self-concepts and the perceived hearing people having negative attitudes, toward them because of their deafness.

Being told and/or indirectly shown that one is inferior can lead to acceptance of that view point. This in turn can be a self-fulfilling prophecy. Eg. Self-concept of academic ability has been found to be more of a limiting faction than IQ around deaf adolescents for educational achievements. In other word, if deaf people are given the idea and accept the idea that they are somehow inferior and should be treated as inferior, then it is unlikely that they will seek to acquire the attitudes, skills and knowledge that could enable them to adjust to changing situations, so as to become adjust to changing situations, so as to become effective participants in society at large.

Leigh and Stinson did a study in (1991), on self perception of the hearing-impaired.

The subjects were divided on hearing status, age and gender.

a) As age increased, subjects perceived themselves as less frequently.

1. **Verbally expressing emotion as (probably because they are** less able to translate feelings into abstract linguistic forms).
2. Using physical aggression.
3. Participating in co-operative tasks or efforts.
4. Needing help from others.
5. Needing assurance from others about the quality of their performance on tasks.

b) Hearing-impaired people perceived themselves as having

- Less
- Verbally expressing emotions
- Engaging in acts of verbal aggression.

More

- Engaging in non-verbal interaction.
- Engaging in acts of physical aggression.

c) **Females are more likely to report that they were**

- accepted by peers and adults.
- considered themselves integrated within the school.

They reported that they less often

- felt isolated
- would give up in the face of adversity.

d) Isolation - Male subjects reported that they felt isolated more often.

Personality of the Deaf

In the course of research using personality test, assuming that test findings are as authentic in their personality portrayals of the deaf persons as they are assumed to be for the non deaf for whom the tests were originally designed, a stereotype of 'the' personality of the deaf, has emerged. Its principal features are :

* Emotional immaturity
* Adaptive rigidity
* Socio cultural impoverishment
* Narrowed intellectual functioning

Several professional workers with the deaf do not agree with this stereotype and are outraged to find that not even lip service is given to the high heterogenity known to exist within the deaf population. All deaf persons are stamped with a common personality label. No one would argue, that it

is just as ridiculous to talk of 'the personality of the hearing', as of the personality of the deaf. However, the stereotype persists.

Nonetheless, as the same findings are obtained over and over again after decades of research by different workers in different settings using different tests, it must be recognised in the face of such sustained deviation, that there must be something wrong.

Deaf children seem to be somewhat poorly adjusted, rigid, immature and neurotic than their hearing peers. Better adjustment seems to be related to living in a non-residential setting and having other deaf members in the family.

Levine (1956) investigated the personality of 31 deaf teenaged girls, using the Rorschach test and said the personality pattern of the deaf girls was characterized by

1. Pronounced underdevelopment in conceptual forms of mental activity.
2. Emotional underdevelopment

3. A substantial lag in understanding the dynamics of interpersonal relationships as well as the world around.
4. Highly egocentric life perspective
5. Markedly constricted life area
6. Rigid adherence to the book of etiquette code rather than inner sensibility as standards for behaving and even for feeling.
7. Had limited interests
8. Were emotionally immature compared to the hearing.

Levine (1963) suggested that the studies of personality patterns and traits of the deaf indicate weakness and deficiencies for dealing effectively and knowledgeably with the complex problems of life. She explored the theoretical possibilities of psychocultural determinants in personality development. She found that personality differences are associated with divergence in verbal capability among groups of deaf persons. She specifically looked at enculturation, environment and language deprivation as psychocultural components that might affect healthy social development. She said that deaf people suffer from educational and psychological malnutrition, otherwise called cultural deprivation. Informative input has not been provided in tune with maturational requirements for interpersonal intrapersonal, group and societal adaptation. The result is

educational and psychological malnutrition, otherwise known as cultural deprivation. Such cultural deprivation is believed to be an outcome of failure on the part of parents, teachers, peers, etc, to provide information and experiences necessary for human development (Levine, 1976).

The early investigations into the personality of the deaf employed such techniques as questionnaires, inventories and rating scales, most of which had been standardized on the normally hearing.

Personality of the deaf as Revealed by Personality Tests

Pintner, Fusfeld and Brunschwig (1937), used the Bernreuter Personality Inventory in a study of deaf college students and other adults. They found the deaf slightly more neurotic, more introverted, and less dominant that the hearing.

Neyhus (1964) used the Rorscharch Psychodiagnostic, MaKe - a - Picture Test (MAPS), Rotter Incomplete Sentences Blank and the human figure drawing test.

The personality of the deaf as revealed through performance on the Rorscharch, was

* Restricted in breadth of experience.
* Rigid and confused in through processes
* characterized by an inability to integrate experiences meaningfully.
* Language facility was found to be a significant factor in achieving normal scores in those areas of performance related to the basic intellectual affectual aspects of personality functioning.

The Make-a-Picture Story test pointed up the individuals difficulty in forming inter relationships. Relationships which are formed are limited in scope and number. There is less ability to relate to more than one individual at a time than exists among the normally hearing. The males are apparently less able to interrelate with others than the females.

Rotter Incomplete sentences Blank - Results fell within the normal range, but a substantial numbers of subjects were found to be maladjusted on the Rotter, perhaps indicating that verbal facility permits fuller expression of feelings of insecurity.

Analysis of results of the human figure drawing test indicated that distorted perceptions were still apparent, but somewhat diminished in adulthood, suggesting a delayed period of maturation in the deaf.

Investigators like McAndrews (1948), who used the Rorscharch psychodiagnostic and the'make-a picture story test with children or adolescents also agreed with findings similar to that of earlier researchers that.

. The deaf were rigid and concrete in their thinking.
. Neurotic, ego-centered and immature in their emotional adjustment.

Goetzinger et al, (1966) did the Rorscharch test on 24 deaf adolescents. The deaf manifested

. More aggression
. Behavioural consistency
. Non conformity
. Less co-operation
. Anxiety

However, the Rorschach test is highly dependant on verbal facility and can used only often adequate language has

been acquired. The better the language, the more normal the personality pattern. This relationship must be considered when tests of this type are used with deaf persons. Moreover, deaf persons often give substantially fewer responses than the hearing. And it is difficult to secure enough responses to assure validity and reliability forced to use the words he knows rather than words which actually describe what he sees.

The subjective judgements and Multiple Minnesota Personality Inventory (MMPI) results show the adjustment pattern to be one of -

. Lack of apprehension, worry and concern with oneself, and
. The manifestation of obliviousness in regard to the true circumstances.

It was seen that the scores were peaked on the Schizophrenia scalein the MMPI. This might be due to the inherent isolation resulting from deafness, rather than from true mental disease. That particular scale, is a measure of feelings of detachment, lack of empathy and inability to understand reality. If one has normal capacities, high scores on this scale could be interpreted to mean serious

emotional disturbance. On the other hand, if one has deafness, he actually night be isolated and detached from interpersonal relationships with others, without having mental illness. Thus the Schizophrenic scale, in fact, seems to be an effective means of measuring the isolation that ensues from deafness.

Psychological Profile of the deaf:

The presence of a hearing impairment affects the entire life of the individual, not just his/her ability to perceive auditory cues. A great number of them have serious Psychological problems. The Psychological profile of the more severely hearing impaired adult, compiled from Schlesinger and Meadow (1972); Levine (1976); Bolton (1976) and Schein (1978), is :-

1) They tend to be immature.
2) They tend to withdraw, especially from communicative situations.
3) They tend to be less flexible than a normal hearing adult.
4) They tend to adhere rigidly to a set routine.
5) They tend to demonstrate a negative self image.
6) They tend to have a narrow range of interests.
7) They tend to show a lack of social judgement.

8) They tend exhibit a lack of regard for others feelings.
9) They tend to be more naive than the hearing adult.
10) They tend to be more dependant than the hearing adult.
11) They tend to be irresponsible.
12) They tend to be impulsive.
13) They tend to be passive and over accepting (especially if the loss occurred early).
14) They tend to be depressed (especially of the loss occurred later).

However, it should be stressed that a description of the typical psychological profile of a hearing-impaired adult is impossible. Psychological characteristics of a hearing-impaired population are not due to the hearing loss, but rather due to the environment into which the loss places the individual.

According to studies done by Heider and Heider (1941), Myklebust (1964), Goetzinger et al. (1966), deaf children tend toward greater egocentricity, rigidity, neurosis, introversion and immaturity.

Goetzinger (1978) suggests that psychological problems may develop as a consequence of others reactions to the

hearing-impairment rather than as a result of the hearing loss itself. The tendency to over protect and provide excessive attention to handicapped children may result in some of the personality traits identified by the researchers.

Social Profile of the Deaf

Increased attention to social skills is especially important for categories of handicapping conditions that have traditionally focussed on linguistic and cognitive deficits, in particular, hearing-impairment (McGinnis, Orr, Freutel, 1980), as there has been a tendency to focus overly on cognitive and linguistic factors, sometimes to the exclusion of affective factors.

A number of studies suggest that,

* Social development
* Social attitudes
* Frustration tolerance of the hearing-impaired are adequate.

However, a larger number of studies suggest that hearing-impairment is associated with (1) psychotic reactions (Myklebust, 1960), (2) Neurotic tendencies, (3) Immaturity and (4) Withdrawal tendencies. When compared with their normal hearing peers, the hearing-impaired have been

described as having (5) Poorer social adjustment, (6) Poorer empathy development (Bachara, Raphael and Phelan, 1980), (7) greater impulsivity, (8) Poorer accuracy of self concept (9) Other behavioral problems (compiled from previous studies by Hummel-Schirmer, 1984).

Investigation into the quality of social interaction between normal hearing and hearing-impaired children, has been limited.

Antia (1982) found that the hearing-impaired students interacted less frequently with peers and more frequently with teachers than normal hearing children.

Fusfeld (1955) notes that the deaf, on the whole, present a satisfactory social picture, establish hoaes of satisfying standards, hold a successful place in the occupational world when given the opportunity, have a strong group consciousness, manifest a zest for life, an in recreation and travel, achieve well in art and make good citizens. Individual differences and the influence of a myriad of interdependent variables probably preclude use of vast generalizations in the area of psychosocial status of the deaf adult.

McCrane (1980) stated that hearing-impaired children were shy, withdrawn, poorly motivated and dependent. Furthermore, they acted in a manner that was similar to aggressive or unco-operative normally hearing children.

According Meadow (1980), characteristics of hearing-impaired students are :

* Lack of social/emotional maturity
* Lack of self-confidence and initiative
* Difficulty in peer relationships
* Desire to please others
* Physical aggression.

Kennedy, Northcott, McCauley and Williams (1978) described mainstreamed hearing-impaired children as feeling like outsiders with respect to their normally hearing peers.

Johnson (1978) studied the social profile results of 295 college students -

(1) In terms of social knowledge, about 13% performed at a level expected for college students, 32% at high school level and 55% at an unsatisfactory level for employment.

(2) In terms of social decision making, 95% needed improvement, 84% needed improvement in terms of social reasoning.

(3) In terms of varying levels of interaction, interpersonal was significantly better than group interaction, but it was still relatively low.

(4) In terms of social behaviour, 66% were considered to be performing at a college level, while 34% needed improvement.

(5) In terms of career development, 78% were below college level. This included performance on tests which measured work related skills and attitudes.

As with psychological factors, these characteristics must be considered only as general trends.

Peer interaction plays a major role in the social development of adolescents by presenting a different perspective on the social world. "Just being together", was cited as the most important reason that adolescents wanted to spend time with each other. Most describe 'understanding'

each other as what they gained in peer association. Also the sense of freedom, lack of constraint, the possibilities for spontaneity, and the openness which is possible with peers. This is attributable to hearing-impaired adolescents too. Very few maintained primary identification with the normally hearing. While many deaf people can establish adequate socialisation patterns in the hearing world, very few deaf adults really find it possible or enjoyable to totally integrate their lives with their hearing friends. Almost all found it necessary to develop a basic identification with others who had impaired hearing. This highlights the feelings of isolation which occurred, with the need to shift social contacts, friendships and affiliations. Apparently, even when deafness is sustained in adulthood and verbal facility is at a high level, it is difficult to maintain normal social relationships with the normal hearing group. The shared attribute of deafness serves as a strong binding force to foster relationships among deaf adolescents and actually sometimes might serve further the separation between them and their hearing families. Deaf students attending mainstream educational institutions may be successful academically, but for the rare exception, are lonely, lack involvement in the social milieu of the school, and lack the avenues of energy release and identity experiences so crucial at this stage. Deaf teenagers need peers with whom they feel

comfortable. In most cases, the peers too will be deaf. Those involved in the social development of the deaf should therefore ensure that the individual has social competencies needed to move freely within both the hearing and the deaf communities.

One of the ways in which social information is conveyed is through social cues. Studies by Schiff and his associates (1973) indicates major differences between deaf and hearing adolescents, in social perception of non-verbal cues. Hearing subjects were frequently able to extract far more information and make fewer errors in social perception than their deaf counterparts (Schiff, 1973). Since many of the fine situational adjustments required of adults depend or correctly identifying subtle communications, such differences could be of major importance.

Anomalous experience is another source of difficulty in socialization for deaf people (Nehaus, 1964). In addition to not hearing the world around them, deaf social environment and experiences. Often, it results from parents and others being more protective of a deaf child than they would be if he or she were a normal hearing child (Mindel, 1972).

Experience is a necessary ingredient to social competence. Practice a variety of social situations affords a person a well differentiated background and the ability to play many roles (Meyerson, 1971). If people are restricted in their background, and if such restriction are uncommon in the prevailing culture, then it is likely that as adults, these people will have fewer skills to draw upon in accommodating change in social roles. This deficiency could be a critical problem in adult socialization, especially among individuals such as deaf adults who must try to overcome social barrier.

Stigma is one of the major barriers to social participation by deaf adolescents and adults (Safilios-Rothchild, 1970; Schears and Jensema, 1969).

According to Goffman (1963), a person possessing an attribute that is discrediting in ordinary social interaction, is stigmatised and by definition, disqualified from full social acceptance.

A person who is deaf and who lacks just like any one else may be expected to act just like any one else. For eg. in a normal hearing person may expect to be able to communicate but discover that he cannot. Depending on social

psychological position, with respect to the disability situation, Wright (1966) suggests that normal hearing persons may then revise their expectations downward. Studies done at the Rochester Institute of Technology and NTID lend support to the notion that hearing people often lower their expectations after meeting deaf people. In some situations, perhaps these expectations are more realistic. In other situations, they become artificial limitations on deaf people. Deaf adolescents and adults need skill and experience to manage the strained interaction in order to establish themselves as individuals before these limits are set unnecessarily low.

Deafness and Social Maturity

Social maturity as an aspect of human behaviour, refers to the attainment of independence. The goal of maturation, is adulthood-physically, mentally and emotionally, or adulthood as a socially competent individual.

i.e. - Our primary concern is with social maturity which directly indicates the extent to which he has attained independence from parental assistance, and can effectively manage himself according to the demands of the culture in which he lives.

Doll (1953) defined social maturity as the ability to cure for oneself and to assist with the care of others. He developed the social maturity scale to measure social competence.

i.e. *The* person's total attainment in terms of social performance, what he does with his capacities, his ability to care for himself and to assist with the care of others.

Doll arrived at 6 major attributes of social competence -self help, self direction, communication, locomotion, socialization, occupation.

Thus for example, the crippled would fall low in the area of locomotion, and also on self-help skills; the self direction scores will be low for the mentally deficient, and communication scores will be low for the deaf.

One of the most significant aspects of any handicap is the extent to which it causes greater dependency on others. Perhaps, this is the inherent meaning of 'handicap'. If a deviation does not cause increased dependency, there is no reason to assume that it should be defined as a handicap.

It is not anticipated that the involvement of any significant handicap can be completely overcome. It is essential for the educator. Psychologist and rehabilitation worker to recognise the limits beyond which efforts towards alleviation are unrealistic, and should be replaced by efforts which encourage acceptance. Pintner found that deaf children chose immediate satisfaction rather than greater rewards which were delayed. From this he concluded that deafness resulted in emotional immaturity.

There are indications, that those whose deafness dates from early life attain the first 2 levels of social competence ie., self help and self direction but they have difficulty in attaining the third, i.e., ability to assist with the care of others.

A hearing impaired child, like his normally hearing peers, begins life with the potential for achieving personal and social maturity. His hearing impairment, however, often limits his contacts with those experiences which help a normally hearing child progress through stages of growth towards personal and social maturity. A hearing impaired child's contact with his peers and family often doesn't provide him with adequate information about others as complex individuals. His perceptions may remain egocentric, his

thinking and behaviours rigid. He needs the opportunity to develop personal maturity, competent skills and a basis for constructive social interactions.

Studies report that children deaf from early life are inferior in social maturity to the extent of approximately 10% upto the age of 15 years.

Until 15-18 years of age, social maturity entails mainly achieving competence in .self help and self direction basically learning to care for oneself and attaining the level of responsibility required for self direction. Gradually after 18 years, social maturity entails assisting in the care of others, providing for the future and assuming responsibility for the general welfare. This is adulthood the age at which one is expected to have energies and capacities over and above thou required to care for oneself. Studies indicates that it is this level of social maturity which is difficult to achieve when profound deafness is present from early life. These results have important practical implications for psychology, education and rehabilitation. The average social quotient of the deaf adult can be raised to 80 or 85 through the efforts of intensive training. Many writers have suggested that deaf

people often appear to be socially naive or immature, and that they frequently encounter personal and social difficulties in daily life (Rodda, 74; Glass 74}.

Psychosocial adjustment is of paramount importance, because only a well adjusted individual can be expected to function at his or her full potential. Psychosocial adjustment doesn't imply a trouble free life. Adjustment is an ongoing process, whereby individuals confront situations, meet stress and cope or adapt to it (Roessler and 3olton, 1978).

Studies frequently find less adequate adjustment among deaf subjects, as compared with normal hearing subjects. (Schuldt and Schuldt, 1972) Included among these characteristics are emotional instability, egocentricity, impulsiveness, poor self-concept and tactlessness,

Neyhus (1964) found that the emotional maladjustment in young deaf persons, was found to continue despite favourable socio-economics circumstances, superior educational achievement and above average intelligence.

Educators have stated that those who was deaf from early infancy have better emotions adjustment because of their lack of awareness of what it means to hear.

Hard of hearing versus the Deaf

Another opinion is that the hard of hearing have greater emotional disturbance because they are in an ambiguous position of being neither deaf nor normally hearing. They seemed largely unaware of deafness as a handicap. They lacked in sight into the significance of hearing.

The hard of hearing who had long experience with normal auditory faculties estimated deafness to be a greater handicap and showed more depression concerning their disability.

Males vs Females - studies report that, socio cultural circumstances make a hearing loss more debilitating for males or they develop feelings of greater loss from their sensory deprivation. The males irrespective of the age of onset and the degree of involvement, showed more personality disorders than did the females.

The deaf young people are also seen to lack idealistic thinking and action. This maybe due to the overprotective environment that their parents create. There is a lack of exposure to social concerns.

Williams and Sussman (1971) suggested that the devaluative attitudes of society toward the deaf and paternalism or overprotection could be the cause for some of the social restriction of the hearing-impaired.

Many parents, teachers and others treat deaf children as less competent, less responsible and less adequate in general than their hearing agemates. Often, parents as well as other adults feel compelled to lookafter every need of the hearing impaired child. Combined with the linguistic impoverishment of deafness this has resulted in different life experiences of deaf children, which in turn seems to account for much of their differing personal and social adjustments (Meadow, 1976}.

Despite such an upbringing, deaf adults are expected to assume productive contributing roles. According to Schlesinger and Meadow, 1972, experiencial deprivation, differences in social environment and upbringing of deaf and hearing children, leads to socialisation deficiencies in the deaf.

A parental reactions to the child's deafness and the subsequent actions or inactions constitute an important factor in the development of emotional disorders in deaf children.

These reactions run the gamut from shock, surprise, and disbelief, to guilt, despair and rejection, often within the same person or parental couple. The consequent inadequacy, misinformation, hostility, smothering, overprotection, and other behavior patterns can play a major role in engendering or maintaining in appropriate unproductive thoughts, feelings and behavior in the deaf child. Some parents collapse in the face of problems and thus ensure the 'fact' that the deaf child will always be a seriously deficient member of society. Others refuse to face or accept the fact of deafness and attempt to mould the child as a hearing person by various intervention.

A majority of deaf have normal hearing parents who probably had little or no contact with or understanding of the problem can affect the social development and adjustment of the individual. If they constantly dominate over every aspect of the child's life, in dependance, self-confidence and self control may never develop.

According to Pintner, deaf children from homes where there were other deaf persons, such as deaf parents, were found to be better adjusted than other deaf children.

Thus, the persona of the deaf, is a complex blend of all these interweaving psychological, social emotional, behavioural and environmental factors.

The following, is a list of terms used in professional literature, to describe those who are deaf, which may provide no an insight as to the feature seen of the deaf individual.

Source : adapted from "Is there a psychology of the deaf?' by Lare, H. (1988), Exceptional children, 55, 9, in Introduction to Special Education II Ed. Ysseldyke, J.E., and Algozzine,B. (1990), Houghton Miffin Company, New Jersey.

Cognitive

- Cannot think clearly
- Conceptualizes poorly
- Concrete
- Doubling
- Egocentric
- Externalizes failure
- Internalizes failure
- Icapable of introspection
- Incapable of language
- Lacks self-awareness

- Language poor.
- Mechanically poor
- Mechanically inept
- Naive
- Reasoning restricted
- Shrewd
- Unaware
- Unintelligent

Social

- Asocial
- Clannish
- Competitive
- Credulous
- Depends on admiration
- Disobedient
- Conscience weak
- dependant
- Immature
- Irresponsible
- Isolated
- Morally undeveloped
- Rigid
- Shy
- Submissive

- Suggestible
- Unsocialized

Emotional

- Depressive
- Easily frustrated
- Emotionally disturbed
- Emotionally immature
- Explosive
- Irritable
- Lacks anxiety
- Lacks empathy
- Moody
- Neurotic
- Paranoid
- Passionate
- Psychotic
- Serious
- Temperamental
- Unfeeling

Behavioural

- Aggressive
- Anrogynous

- Conscientious
- Has few interests
- Hedonistic
- Immature
- Impulsive
- Lacks initiative
- Possessive
- Rigid
- Shows slow motor development
- Stubborn
- Unconfident

METHODOLOGY

The psychology of deafness is primarily based on the answer to the question, 'what is the effect of the variable of deafness on human development and behaviour?[1]. If environmental influences are major determinants of personality structure, it follows that a condition such as profound hearing loss that drastically alters a person's perceived environment, will have significant psychological consequences.

The present study, is an attempt to evaluate some of these aspects and its effect on education of the hearing-impaired at the collegiate level.

Subjects :

Experimental Group - Fourteen hearing-impaired college students of whom, ten were male and four females. They had an age range of 16-23 years with a mean age of 19.5 years.

Control Group - Fourteen normal hearing college students of whom ten were males and four females. They had anage range of 11-21 years with a mean age of 18.86 years.

Criteria for selection

1. All the subjects should be college students.
2. Hearing status

   Experimental Group - should have at least a moderately severe degree of hearing loss i.e., 55 - 70 dB HTL in the speech frequencies.

   Control Group - Hearing should be within normal limits at all the frequencies tested i.e., -10 to 26 dB HTL (ISO, 1964).

3. Physical status

   Experimental Group - should have no physical problem other than hearing loss and should possess normal general health

   Control Group - should have no physical abnormality and should possess normal general health.

4. The subjects should all be enrolled in a comparable academic program.

The hearing-impaired subjects were students of a polytechnic college, 12 of them are enrolled for diploma in computer science and 2 for architecture. Hence, students of a polytechnic college, enrolled for computer science were selected as control group.

i.e., The experimental group and control group were matched and differed only in hearing acuity.

Tests Administered

1. Hearing Evaluation

   a. Pure tone audiometry
   b. Impedance audiometry
   c. Reflexometry

2. Intelligence evaluation - Standard form of the Raven's Progressive Matrices (1983 edition).

3. Personality evaluation - 16 personality factor test (Cattell, 1962) Form C.

4. Adjustment evaluation - The Bells adjustment Inventory (Revised - 1962) - Student Form (Bell).

5. Questionnaires

   a. For the hearing-impaired (Experimental group)
   b. For the normal hearing (control group)
   c. For the lecturers of the hearing-impaired students.

Procedure

I Hearing evaluation

A hearing evaluation was conducted to determine the degree and type of hearing loss in the experimental group and to ensure normal hearing in the control group.

a. Pure tone audiometry

Instrument used:

A clinical audiometer (Madsen Orbiter 922), equipped with earphones (TDH-39) with noise excluding head set (ME 70) was used for air conduction testing, and bone conductor (B71) was used for bone conduction hearing testing.

The pure tone thresholds were tracked at the following frequencies.

250 Hz through 8000 Hz at octave intervals for air conduction threshold tracking and 250 Hz through 4000 Hz at octave intervals for bone conduction testing.

Instructions

The subjects were instructed as follows "I am going to place this (earphones) on your head. You will hear a sound from it. Whenever you hear the sound, raise your finger and put down your finger as soon as you stop hearing the sound. Raise your finger even for the faintest sound that you can detect. Raise your right hand when you are hearing in your , right ear and your left hand when hearing in the left ear".

The earphones were placed over the ears of the subject. Testing was started with the better ear, or if the hearing was comparable, with the right ear. Testing was initiated at 1000 Hz, at an intensity of 70 dB HL at 1000 Hz, at an intensity of 70 dB HL for the hearing-impaired subjects and 30 dB HL for the normal hearing subjects. The modified Hughson Westlake procedure was adopted i.e. if the tone was heard, at the initial presentation level (70 dB HL or 30 dB HL) the intensity was decreased in 10 dB steps, till he stopped hearing the sound. The intensity was then raised in 5 dB steps till the subject could detect the sound once more. This was repeated three times. The threshold was the lowest intensity at which the subject heard a tone 50% of the time.

Threshold is tracked in a similar manner at 2 KHz, 4 KHz, 8 KHz, 500 Hz and 250 Hz, in that orders.

b. Immittance audiometry

Instrument - The Hand tymp, a portable battery operated immittance meter, designed for quick and precise screening of the basic functions of the middle ear was used.

Instructions - "Please sit comfortably. Do not move, talk, yawn or swallow. You do not have to indicate any response, but you have to take care to sit still", as movements can affect the test results".

(a) Tympanometry :The ear is first examined to ensure that it is free from wax. Depending on the size of the external auditory canal of the individual patient, an ear-tip was placed on the probe tip and it was gently place in the ear of the patient and pressed against the auditory meatus for proper seal, and the testing was done and the readings noted.

(b) Reflexometry was done following the tympanometric measurement, at 500 Hz, 1000 Hz, 2000 Hz and 4000 Hz. The presentation level was 95 dB HL.

II. Intelligence test - Standard fora of the Raven's Progressive matrixes - Section 3 (Raven, Court and Raven, 1983 edition)

The standard progressive matrices, is a test of a person's capacity at the time of the test to apprehend meaningless figures presented for his observations, see the relation between them, conceive the nature of the figure completing each system of relations presented and by so doing, develop a systematic method of reasoning. The scale consists of 60 problems, divided into 5 sets of 12 each. In each set, the first problem is as nearly as possible self evident. The problems then become progressively more difficult.

The test was given as a group test. A person's total score provided an index of his intellectual capacity. The consistency of a person's work can be assessed by comparing his total score with a table of expected scores given for that total. A deviation more than two from the expected indicated an inconsistent or unreliable predictor of that person's intellectual capacity. The test took intellectual capacity. The test took approximately 45 minutes to complete.

III Personality Test - 16 Personality Factor Test (16 P.F.) Form C {Cattell, 1962).

Cattell regarded traits as units of personality that **had** predictive value. He defined a trait as 'that which defines what a person will do when faced with a defined situation'.

He termed readily apparent traits of people as 'surface' traits and hidden patterns which were the underlying determinants of personality as 'source' traits.

16 PF has 16 sub-scales, each purely loaded on one underlying source trait of normal personality. Thus 16 dimensions of an individuals personality are covered by the test.

- Instructions

Read each question carefully. For each question, 3 options are given. Wherever possible, try to give a clear answer i.e. 'yes' or 'no' only of this cannot be done, tick the middle answers like 'occasionally' or 'sometimes'.

- There is no time limit.
- Scoring

Each answer is gives a score of 0, 1 or 2, as per a scoring key and these raw scores are converted to sten scores which are provided and the sten scores are interpreted as given in the Appendix-IV , for each personality factor, giving an idea of the personality traits of an individual.

IV Adjustment Test - The Bell Adjustment Inventory, student Form (Revised) - **Hugh M Bell (1962).**

The Bell Adjustment Inventory is a self-report of the individuals life adjustments, as they have been experienced by him. At the core of every self, are the hates, the loves and fears of the individual. The inventory assesses these feelings by means of word symbols.

The 1962 revision of the inventory, which was used, provides 6 measures of personal and social adjustment.

a. Home Adjustment : Individuals scoring high tend to feel their home relationships have been unsatisfactory. Low scores indicate satisfaction with regard to home adjustment.

b. **Health Adjustment** : High scores indicate unsatisfactory health adjustment, low scores, satisfactory adjustment.

c. Submissiveness - Individuals scoring high tend to be submissive and more adjusting or more accommodating in their social contacts. Individuals with low scores tend to be self confident assertive and aggressive.

d. Emotionality : Individuals with high scores tend to be unstable emotionally and those with low scores tend to be emotionally more secure.

e. Hostility - Individuals with high scores tend to be hostile and critical in social relationships, while those with low scores tend to be more friendly and accepting of people.

f. Masculinity-feminity - Females who score high tend to have strong masculine interests, while Males who score low tend to have strong feminine interests. Males who score high tend to be strongly masculine in their interests and males who score low tend to have the interests of females.

- The examiner may only help interpret the meaning of words. The interpretation of the question itself, has to be done by the examinee himself.

Instructions

"Read each question carefully, and tick yes/no in the answer sheet provided.

As far as possible, try to tick either the 'yes' or the 'no' answer. Only, if this is not possible, may you tick the '?' indicating 'doubtful'. You may clarify any doubt regarding the meaning of the words, with one. Do not omit any question".

Scoring:

- The answers are scored according to the response sheet provided with the test material and classified under each of the six categories and totalled; to give a prediction of the individual's adjustment.

- The scores obtained by the experimental group and the control group, are compared for each test, to give an idea about the intelligence, personality and adjustment differences between hearing-impaired college students and normal hearing college students.

V Questionnaires

3 sets of questionnaires were used in the study (Given in Appendix I, II and III) .

1. **For** teachers of the hearing-impaired subjects.
2. **For** the hearing-impaired subjects.
3. For the normal hearing subjects.

RESULTS AND DISCUSSION

The present study was conducted to ascertain the effect of hearing loss on scholastic aptitude and social skills of hearing-impaired college students.

The data was collected as per the methodology given and the results were manually scored and tabulated. To analyse the data, the mean and standard deviation values were calculated of the scores obtained, and from this, the level of significance was computed (Garret, 1979).

1. The Raven's Progressive Matrices **(RPM)**

On the Raven's Progressive Matrices, the hearing-impaired subjects had a 0.64 advantage in the mean raw scores, but the scores were not significantly different between the 2 groups. There is however, greater variability in scores among the hearing-impaired group, as indicated by the greater standard deviation scores.

When converted to percentile, both groups fell in the 50th percentile and are classified as grade III+ which signifies that they have average intelligence as per the norms given in the RPM manual (1983) for the age group of 13-25 years.

Table-1: Showing the scores of the hearing-impaired group (Control group) on the normal group on the RPM (Experimental group)

	Hearing-impaired	Normal
Mean score	47.64	47
Percentile score	50	50
Grade	III+	III+
Standard Deviation	6.26	4.58
Range of scores	37-56	40-54

't' value = 0.31 (Garrett, 1979).

Therefore, the values of the two groups are not significantly different even at 0.05 levels.

II Bell's Adjustment Inventory

The two hundred questions in the Bell's Adjustment Inventory are structured to elicit responses pertaining to -

a) Home adjustment

b) Health adjustment

c) Submissiveness/Assertiveness

d) Emotionality

e) Hostility/Friendliness

f) Masculinity/Feminity

The answers were scored and the values under each category are as shown in Table-2. The mean scores were also compared

with the norms for college students given in the manual of the Bell's Adjustment Inventory (1962).

Table-2: Showing the mean scores obtained by the normal hearing group on the Bell's.

		Hearing-impaired	Normals	"t' values
A	M	16	11	2.81*
	SD	2.63	5.9	
B	M	16	9	5.15**
	SD	4.19	3.3	
C	M	14.6	16	0.64
	SD	3.07	7.2	
D	M	18	12	2.14*
	SD	6.38	7.9	
E	M	16.3	13.5	1.59
	SD	3.58	5.58	
Male	M	16.3	18.6	3.43**
	SD	1.28	1.58	
Female	M	15.4	12.66	0.87
	SD	2.3	4.36	

Key:
M = Mean score
SD = Standard deviation from mean score
* = Difference significant at 0.05 level
** = Difference significant at 0.01 level.

(A) Hone Adjustment

The mean score for home adjustment is 16 for the hearing-impaired group and 22 for the normal hearing group. The groups differ significantly at the 0.05 level in terms of home adjustment (Garrett, 1979). Comparison of the mean scores with descriptive norms showed that while the normal hearing group fell under the average category for home adjustment, the hearing-impaired group showed unsatisfactory home adjustment as per the norms.

All the hearing-impaired have normal hearing parents and siblings. Also, answers from the questionnaire given, shows that they have feelings of being less liked by their parents, than their siblings, etc. All this is bound to have repercussions on their home adjustment, as reflected in the home adjustment scores on the Bell's Adjustment Inventory.

(B) Health Adjustment

The mean score for health adjustment was 16 for the hearing-impaired group, and it was 9 for the normal hearing group. The two groups differ significantly in terms of health adjustment at the 0.01 level (Garret, 1979).

Comparison of the mean scores showed unsatisfactory health adjustment for the hearing-impaired group, and average health adjustment for the normal hearing group.

Unsatisfactory health adjustment scores obtained by the hearing-impaired may be owing to the fact that most of them had acquired hearing loss, due to high fever or mumps requiring hospitalisation, or chronic suppurative otitis media in case of mixed loss, requiring frequent medical treatment, or perhaps some of the questions were not understood properly by the subjects.

(c) Submissiveness/Assertiveness

The mean scores in this category for the normal hearing is 14.6, while it is 16 for the normal hearing group. There is no significant difference between the two groups on this factor even at the 0.05 level (Garrett, 1979).

On comparing with the descriptive norms, both the groups fall in the average category.

The average and marginally higher assertive scores obtained by the hearing-impaired subjects may be owing to the

fact that they have had to stand up for themselves and their rights more than others, to get what they want and to avoid being sidelined or ignored. Many of them report having had experiences of being teased and looked down upon, because of the hearing loss. They had to overcome all this and persist in their quest for education and this might have required more assertiveness.

(d) Emotionality

The hearing-impaired group had a mean emotionality score of 18, while the normals had a mean score of 12. The 't[1] value of 2.14 implies that the 2 groups are significantly different at the 0.05 level in emotional adjustment (Garrett, 1979).

On comparing with the norms, the normal group showed average emotional adjustment, while the hearing-impaired group showed unsatisfactory emotion adjustment.

Poor emotional adjustment among the hearing-impaired was also found by Neyhus (1964). He reported that the emotional maladjustment in young deaf persons, was found to continue, despite favourable socio-economic circumstances, superior educational achievement and above average intelligence. The

same is seen in the case of the hearing-impaired subjects in the present study, as per the results of the Bell's adjustment inventory and also the 16 P.F. Another contributing factor to emotional maladjustment could be the social stigma faced by the hearing-impaired, shown directly or indirectly by the way in which the normal hearing people behave and interact with the hearing-impaired (Safilios-Rothchild, 1970; Schears and Jensema, 1969; Wright, 1966).

(e) Hostility/Friendliness

The mean score in this category is 16.3 for the hearing-impaired and 13.5 for the normal group. The 't' value is 1.59, which shows that there is no significant difference between the scores.

On comparison with the descriptive norms (1962) given in the manual, however, the hearing-impaired rate as being somewhat critical, while the normal hearing group showed average friendliness. This may be due to the unpleasant social expresses some of them may have had on interaction with others, or it may be a reflection of the tendency of the deaf to be more withdrawn with strangers, as they are not sure of how they would react to them, or so that their hearing deficit does not become obvious to everyone.

between 1962 and 1997, owing to greater independence, freedom. and opportunities for girls, they now have more interests.

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f) Masculinity-Feainity

The mean score for hearing-impaired males is 16.3 and for females it is 15.4. The mean score of the normal hearing males is 18.6 and for females it is 12.66.

The t-value was 3.43 when the males in the two groups were compared indicating significant difference at the 0.01 level and 0.87 for the female group, indicating no significant difference between the scores (Garrett, 1979).

On comparison with the 1962 norms the normal hearing males fall in the average category, while the hearing-impaired males fall in the feminine category.

Both the hearing-impaired and the normal females, when classified according to norms, fall under the masculine category , the normal female more so. This may be explained in terms of a comparison made in the manual between the mean scores in 1947 and 1962. It was found that there was a tendency for women to indicate a slightly greater masculine interest in the 1962 sample than in the 1947 sample. Hence, it is supposed that in the 35 years span that has elapsed between 1962 and 1997, owing to greater independence, freedom, and opportunities for girls, they now have more interests,

mind sets and attitudes which would previously have *been* considered as 'male'.

III The 16 P.F. Questionnaire - 'C' Fora (Personality Factor) (Cattell, 1962).

The 16 P.F. test, evaluates 16 facets of the personality of an individual. The mean scores obtained for each of the factors are shown in Table III. A brief description of each of the 16 personality traits is included in the methodology.

Analysis using the t-test indicates no significant difference for factors A, C, F, G, H, I, L, N, 0, Ql, Q2, and Q3. A significant difference was obtained for factors B, E, M and Q4, and they are discussed below:

a) Factor B

The hearing-impaired group had a mean score of 3.28 while the normals had a mean of 6. The t-value was 3.94 indicating a significant difference between the two groups at the 0.01 level (Garrett, 1979).

People scoring low on factor B, are those who tend to be slow to learn and grasp, dull, given to concrete and literal

interpretation, whereas people who score high are more intelligent, bright and have abstract thinking ability.

The hearing-impaired had low scores, indicative of less intelligence, concrete thinking, and a lower scholastic mental capacity.

According to Bolton (1974), deaf persons possess the intellectual capacity to solve abstract problems that do not require linguistic mediation. In case of the 16 P.F. the questions are given in written form, and linguistic mediation is required to solve the questions. This is probably the reason for the low factor B score, as the Raven's Progressive Matrices showed scores comparable to that of the normal.

However, these findings on factor B are similar to those reported in literature, which say that the deaf tend to think along more concrete level and have limited or lower abstract ability compared to the normals.

The higher mean scores on the Raven's Progressive Matrices may be attributed to the fact that it is a purely nonverbal test, involving pictures and visual reasoning. Hence, perhaps because verbal or language component was not

involved, then their IQ's were comparable and they fell under the average intelligence group. But in the 16 P.F. which involved a questionnaire due to their language deficiency and because it measured abstract thinking, perhaps they were unable to perform on par with the normals.

This is also in keeping with the findings of earlier researches who said that the intellectual abilities of the hearing-impaired are not necessarily quantitatively different (as reflected by almost similar scores on the Raven's Progressive Matrices employed in the present study), but qualitatively, differences may exist (as indicated by the low scores on abstract thinking on the factor B of the 16 P.F. in the present study), because the loss may affect certain aspects of intelligence, especially those involving verbal reasoning.

b) Factor E

Although both the hearing-impaired and the normal hearing group fall in the average category based on their mean scores, the scores show significant difference at the 0.01 level (Garrett, 1979).

The normal group had low average scores, indicating a trend towards a more mild, accommodating personality. This means they will be of a more adjusting nature to different circumstances and flexible.

The hearing-impaired group had higher average scores, indicating a trend towards a more aggressive, assertive, stubborn personality. This means they will have more difficulty in adjusting, more inflexible.

c) Factor M

On factor M also, both the groups can be considered as average. However, their scores were significantly different at the 0.05 level (Garrett, 1979). The normal group had lower average scores indicating a trend towards being more practical and down to earth, while the hearing-impaired group had higher average scores, indicating that they tended to be more imaginative, bohemian, absent minded, wrapped up in inner urgencies and careless of practical matters.

d) Factor Q4

The normal hearing group scored and low on this factor, so much so that the scores were significantly different at

the 0.01 level (Garrett, 1979). Low scores by the hearing-impaired on factor Q4 indicates that they tend to be sedate, relaxed, composed and unfrustrated. Higher scores on factor Q4 is indicative of a tense, excitable, fretful, frustrated personality, who in groups takes a poor view of the degree of unity, orderliness and leadership. His frustration represents as excess of stimulated, but undischarged drive. This is typical of the hearing-impaired individual, who many a time is unable to express himself, and fulfill his potential, leading to undischarged drive and frustration. In the hearing-impaired group studied, the value is not very high, as they are undergoing college education, and their abilities are being tapped to some extent and they are able to interact and relate with one another. Perhaps, if this were not so, higher values would have been seen.

Table-III: Showing the scores obtained by the hearing-impaired and the normal hearing group on the 16 P.F. questionnaire.

Factor		Hearing-Impaired	Normals	't' value
	M	3.93	4.5	0.75
	SD	1.89	1	
	M	3.35	6	3.94**
B	SD	1.6	3.6	
	M	3.91	3.84	0.36
	SD	2.04	1.8	
	M	6.64	4.14	4.03**
	SD	1.1	1.4	
	M	4.5	4.21	0.34
	SD	1.65	2.6	
	M	4.21	4.57	0.55
	SD	2.15	1.08	
	M	3.43	4	0.7
	SD	1.9	4.29	
	M	4.14	4.57	0.41
	SD	1.13	1.28	
	M	5.28	4.5	1.10
	SD	1.39	1.95	
	M	6	4.64	2.27
	SD	1.92	1.08	

Factor		Hearing-Impaired	Normals	't' value
N	M	5.6	4.3	1.30
	SD	1.37	1.88	
O	M	6.38	6.43	0.01
	SD	1.82	1.78	
Ql	M	5.71	5.78	0.09
	SD	2.32	1.46	
Q2	M	3.57	4.43	1.91
	SD	2	2.34	
Q3	M	4.35	5.07	1.36
	SD	1.39	1.32	
Q4	M	5.64	2.14	7* *
	SD	1.35	1.16	

M = Mean
SD = Standard Deviation from mean
* Significant difference at 0.05 level
** Significant difference at 0.01 level (Garret, 1979)

Thus, the overall psychological profile that emerges, of the hearing-impaired college students, according to the 16 PF is one of the following :

Adequate balance in personality, like the normal hearing group, in terms of being reserved vs. outgoing (Factor A); sober vs. lively (Factor F); expedient vs conscientious

(Factor G); tough or self reliant vs. tender mindedness; trusting vs. suspicious (Factor L): Forthright vs. astute (Factor N): conservative vs. liberal (Factor Ql); Group dependent vs. self-sufficient (Factor Q2) and indisciplined vs. controlled (Factor Q3).

Unlike previous studies, the deaf college students in the present study were rated as having adequate assertiveness and self-confidence. This is contrary to the studies of researchers (Roessler and Bolton, 1978 and Sussman, 1973). Where the hearing-impaired were described as lacking in self confidence. The higher level of education, exposure and opportunities for achievement have probably contributed to this improvement in self-confidence in these hearing-impaired youngsters. Also, the parental over-protection/paternalism factor (Williams and Sussman, 1971) may have been reduced, as the hearing-impaired students were all residing in a hostel, and had to find for themselves and be self-reliant.

Their ability to attend college and study like their normal hearing peers and the prospect of having a job and being on par with their normal hearing counterparts has probably boosted their self-confidence levels and might be the major contributor to their normal level of self-confidence as seen in the present study. Probably, staying

in a hostel, away from home, having to fend for themselves, and lookafter their own needs, and staying with their peers, has enabled them to be more interactive, more independent, more self-reliant and tough, less tender minded and more disciplined and these in turn have instilled in them greater confidence in themselves and their abilities to cope in the world by themselves, without clinging on to others for support.

Both the normal and hearing impaired group were satched for emotional stability (Factor C), Shyness / Boldness (Factor H), and self assuredness / apprehensireness (Factor 0). However, the scores were on the low side for emotional stability, indicating that both groups were on the average less stable, easily affected by feelings, easily upset and changeable. For Factor H also (shyness / social boldness) both scored on the low side, the hearing impaired more so than the normals, indicating less social boldness for both groups. On Factors 0, both groups scored on the high side. Higher scores are indicative of being apprehensive, worrying, insecure and troupled.

The above findings, may be because of the age and phase of life of the subjects - they are all college students in

their late teems or early twenties, with all the physiological complexities and terminals of that age group. They are still maturing emotionally and preparing to face the world, and to prove themselves as 'men' and 'women[1]. So, a major contributor could be their age, and the slightly greater values in the hearing impaired may be due to the hearing loss.

As Patterson and Schmidt, (1992) said, we should be realistic about the effect of hearing loss. Not all difficulties faced are the result of the hearing loss. They could be the same ones faced by any college student, with or without a hearing loss. However it cannot be denied, that hearing loss may adversely affect the personality of the individual, for the result of the 16.P.F also shows lesser capacity for abstract thinking, and although the scores fall in the average range and not in the extremes, there is a tendency towards more aggressiveness, being less practical or down to earth; and greater frustration than the normal group in the present study.

Apparently, hearing impairment has taken its toll on them emotionally, despite their education and greater opportunities for achievement, as reflected in the present study by greater levels of frustration, higher rate of

aggressive behaviour, poorer abstract thinking capacity, and poorer emotional adjustment and home adjustment.

This is in line with the findings of past researchers like McCrane (1980) and Maxon and Bracket (1986), who reported a higher rate of aggressive uncontrolled behaviour and a higher degree of academic disability. Cohen (1978), was of the opinion that the deaf adolescent is often impulsive, for without language to channel frustration and aggression there are fewer substitutes for direct action. This view point is borne by the fact that, in the present study, although scores are within the average range, they tend towards aggressiveness. Also, as regards intellectual capacity, where the test required abstract thinking (16.P.F), the hearing impaired subjects fall significantly below their normal hearing counterparts.

Results of Questionnaires:

A. Questionnaire for the hearing-impaired,
(given in Appendix-1)

Twelve of the hearing impaired subjects responded to the questionnaire. Based on the responses, the following information was obtained.

Questions	Variable Number	Responses	Number	Percentage
1. Age at which hearing hearing loss was noted.	a.Congenital		6/12	50
	b.Acquired*		6/12	50

[*mean age of onset was 7-8 years]

Such acquired loss in majority of subjects, after some amount of language exposure, is probably a plus factor, enabling the level of language they have presently.

2. Are you using a hearing aid?	a.Yes	12/12	100
	b.No	0/12	0
3. Who reccommended the aid?	a.Audiologist	7/12	58.33
	b.ENTspecialist	3/12	25
	c.Others	2/12	16.66
4. Type of hearing aid being used by you.	a.Known	3/12	25
	b.Not known	9/12	75
5. How long have you been using the aid.	a.As soon as hearing loss occurred	3/12	25
	b.A few years after hearing loss*	9/12	75

[*At least a 4-5 year gap was noted between onset of loss and hearing aid use]

6. Do you wear the hearing aid when	a.At home/ hospital	6/12	50
	b.In class during lectures*	8/12	66.6
	c.Listening to TV/Radio	3/12	25
	d.Outdoor while shopping, etc*	3/12	25

Questions	Variable	Responses Number	Percentage
[* Contrary to responses, only 3 subjects were seen to use their hearing aids. Most relied on speechreading mouthing and sign language, probably because they want to avoid making the hearing loss obvious to the general public by wearing a hearing aid]			
7. Is the hearing aid helpful to you in	a. Locating the sound	4/12	33.33
	b. Following speech	4/12	33.33
	c. Enjoying music	5/12	41.66
	d. Hearing environmental sound	3/12	24

Familial background

All of the hearing-impaired college students were children of educated parents and hailed from middle or upper middle class families. Perhaps this is a contributing factor for the students reaching college level of education, as the parents are educated and they had the financial resources. Such privileges may not have been there for hearing impaired child ren from a lower socioeconomic background. Also, the parents may have been more encouraging, motivating the children to achieve.

Questions	Variable	Responses Number	Percentage
Linguistic and Communicative Variables			
l&2.Most students (5/12) have Telugu as mother tongue. 2/12 know only English and no other language. All except one subject, knows either only english well, or english and their mother tongue well. However, 7/12 (58.33%) could read and write and some of them even understand Hindi. Thus multilinguistic exposure is there. Hindi is learnt as III language, by them, despite laws exempting them from it in schools.			
3.Medium of instruction-English. R=Read W=Write u=Understand S=Speak.	R,W,U,S	9/12	75
	R,W,U	2/12	16.66
R&W only		1/12	8
4.How do you communicate with the	Normal hearing		
	M,G,P & if not understood,W.	10/12	83.33
	Sp. to some extent**	9/12	73
	Hearing Impaired		
	SL	12/12	100%

(*M=mouthing, G=gestures$_r$ S.L=Sign language, Sp=Speech, P=pointing, W=writing)

**Those with a lesser degree of loss or acquired loss, had better speech abilities.

As can be seen from the responses, among themselves, the hearing-impaired prefer to use sign language. According to Bolton (1976), most deaf persons are adequate communicators

using manual sign language, but are extremely retarded in their use of formal language skills. This stateaent of Bolton, is borne true in the study. Via sign language, all of them have good communicating ability. Its only through speech, and other language skills, that their expression is limited.

5.Do your normal hearing listeners understand what you are trying to communicate?	Frequen-tly *	1/12	S
	Some-times	8/12	65.60
	Never	3/12	25

*This subject had acquired loss (8 years). A hearing aid had been used soon after onset of hearing loss, without any delay.He had continued in a normal shcool and had fairly good speech. His hearing loss is bilaterally severe. All this might be positive points enabling good communication with the normals.

6.Do you ask people to repeat or speak louder?	Frequen tly		
	Some times	7/12	58.33
	Never	5/12	41.66

Those with profound SN loss more often asked for repetit-ions and those with a mixed (conductive component), for louder speech.

Questions	Variable	Responses Number	Percentage
7.Can you understand a person when you cannot see the speakers face?	Frequetly		
	Some times*	2/12	16.66
	Never	10/12	83.33
8.Do you spontaneously or voluntarily intiate conversation with others?	Frequetly	4/12	33.33
	Some times	6/12	50
	Never	2/12	16.66
9. Do you have difficulty in conversing with a group of people?	Frequetly	4/12	33.33
	Some times	8/12	66.66
	Never		

[*Both these subjects had only moderately severe mixed loss and perhaps this is the reason]

Most of them come across as being gregarious. The two who reported not initiating conversation were of a more retiring nature (based on interaction with the subjects) . Both had profound hearing loss congenitally, and one of them, had very little knowledge of english (knew only to read and write). His mother tongue is Telugu, which he knows. These may be factors which contibute to reticence.

Questions	Variable	Responses Number	Percentage
10.Do you find it difficult to understand speech in a place where there is a lot of other noise?	Freque-tly		
	Some times	2/12	25
	Never	9/12	75

Most of them, on observation, are seen not to use the hearing aid.They rely on speech reading. Noise may not be disturbing to most of them, as they can't hear it as they have profound loss, moreover, they are not relying on audition for communication. The 3 reporting difficulty in noise regularly use their hearing aids and have profound loss.

Scholastic Variables.

2.What type of school did you attend?	Normal	5/12	41.66
	Inte-grated	1/12	8
	Special	6/12	50

Mostly, those with congenital loss attended special schools, those with acquired loss continued in normal schools.

4.Do you understand some teachers better than others? If yes, give reason.	a.Yes	2/12	16.66
	b.No	10/12	83.33
Reasons			
a)Talking more slowly		3/12	25
b)Facing them while spea-king.		3/12	25

Questions	Variable	Responses Number	Percentage
c)Usage of more diagrams etc to show what was being taught. (visual aids)		8/12	66.66

[As questions 1,3, and 5-under scholastic variables are applicable to the normal group also, they will be discussed together. So also questions 3-10 and 12 under Psycholsocial behaviour and 1,3,8 and 11 under miscellaneous.]

Psychosocial Behaviour.

l.Do others talk to whoever is with you instead of asking you if they want to know something about you?	Yes	10/12	83.33
	No	2/12	16.66
2.Do you like to be more with			
a)Hearing impaired people		1/12	8
b)Normal hearing people who use sign language,			
c)Normal hearing people who do not know sign language			
d)No difference-anybody is okay		11/12	92

High scores for (d) variabe indicates good adgustment with normal hearing population by most subjects in the study.

11.Have you had unpleasant experiences because of your handicap?	Yes	7/12	58.33
	No	5/12	41.66

Questions	Variable	Responses Number	Percentage
Miscellaneous			
l.Do you feel your parents love your brothers and sisters more than you?	Yes	5/12	41.66
	No	7/12	58.33
2.Do they give you more attention because of your handicap?	Yes	11/12	91.66
	No	1/12	8
3.Do they encourage your normal siblings more in terms of achievement in academics career,etc?	Yes	11/12	91.66
	No	1/12	8.3
4.Do they except better performance from them?			

The responses to both the above questions are contradictory - They feel that their siblings are loved more than them, although they concede that they have been given more attention because of their handicap. This goes to indicate that they themselves have feelings of not being liked, or rejected, despite all the attention they got.

These scores are to be expected. The parents may not want to discourage the hearing impaired by over expectations and may accept whatever marks etc, they get, with appreciation. For most parents, that itself will be something, because they once may have felt this child would not be capable of much. However, when one child has a hearing impairment and they cannot fulfill their dreams through that child, they usually

Questions	Variable	Responses Number	Percentage

in all their hopes on the normal hearing child, to achieve success in all spheres. However, this may tell adversely on the hearing impaired child, who may think he is not good enough, and people have a way of living upto or down to your expectations of them and hence the lower expectations may make them achieve less than their true potential. Also greater encouragement to normal siblings in achieving, career etc may make them feel that they are less loved.(as in Q.I)

7.Do your parents or family encourage you to take up a job? No	Variable	No.	%
	yes	12/12	100

9.Some of the things they wish they could do, but cannot because of their hearing impairment, are, singing songs, listening to music, listen to news, inability to do business involving interaction and communication problems.

They cited difficulty in understanding their textbooks and understanding their teachers, difficulty in education and in listening and also difficulty in life, when asked for their opinions regarding their impairment and its effects on their daily life and education.

All in all, when the questions were viewed related to the hearing handicap, we see that the students with a lesser degree of hearing impairment, and hearing loss which is

acquired later, have better speech, find it easier to communicate and make themselves understood, and use their hearing aids for listening to speech or class. They also have mostly gone to normal schools, and find it easier to interact with normals.

All the students had extra help with their studies, which is positive factor in aiding educational achievement/progress.

Most of them started wearing their hearing aid a couple of years after the onset of hearing loss. If not for this time lapse, with proper auditory training and speech and language therapy, their level of performance might have been tetter. They need to learn proper use of the hearing aid. With speech therapy, most of them, especially those with post lingual hearing loss, could have maintained beter clarity of articulation and maintained good language.

Many normal hearing people, feel uncomfortable with handi-capped people, and even though most people may not react directly in a negative manner, indirectly or unconsciously, those are the signals they give, treating them in a more protective manner, everdoing things instead of interacting as to a normal college student, looking and feeling uncomfor-

table while interacting with them. As they are sensitive to this, intuitively they realise that they are in someway different, and that some mismatch exists making them different from the general public. This is indicated by high scores on people talking to the person with them rather than to them, as if they cannot express themselves. Also, high scores saying they feel left out (Psychosocial behaviour, Q.1S4). Parents too do this indirectly by preferential treataent between normal and hearing impaired children-lower expectations, lesser punishment, etc.

Despite many of them having acquired hearing loss, their prefered node of communication is sign language, except for the one subject who had proper audiological intervention and started hearing aid usage soon after onset of hearing loss and studied in a normal school. This proves how important early identification, audiological intervention and speech and language therapy is in the rehabilitation of the hearing-impaired.

B. Questionnaire for the normal hearing population, (given in Appendix-2)

A questionnaire was given to fourteen normal hearing subjects, in order to compare their responses with that of the hearing impaired subjects on selected variables. The following are the findings.

Linguistic Variables

All the normal hearing group were proficient in at least 2 languages, being able to read, write, speak and understand them, and in addition knew at least one or two more, being able to at least read, and understand, or speak that language.

The hearing-impaired group were more proficient in english, their medium of instruction (all except one subject, who knew only his mother tongue), and in most of them in their mother tongue also. As for more languages, some could just read or write or comprehend a little of the third language. Their linguistic proficiency was below that of the average normal hearing peer.

Scholastic Variables.

l.Age at which schooling was started

	Mean Age	Age Range
Normals	4.6 Yrs	3-7Yrs

As can be seen, the mean age at which schooling was started, was marginally higher for the hearing-impaired than for normals.

2. Did you have extra help with your studies from teachers or parents.

	Normals		Hearing-impaired	
	%	Number	%	Number
Yes	35.71	5/14	100	12/12
No	4.28	9/14	0	0/12

All the deaf students had had special coaching from teachers or parents, unlike the normal students.

3. Do you depend on

	Normals		Hearing-impaired	
	%	Number	%	Number
a) Understanding lectures (what is taught in class)	-	-	-	-

4. Which subjects do you find difficult?

Normals : Maths, digital electronics, artificial intelligence.
Reasons: Getting wrong answers, difficult to remember, bad teaching.
Hearing-impaired: Maths, science, computer network, language and social studies.

Reasons : Not able to understand the subject.

Thus we see that though both the groups have various subjects they find more difficult, the reason for the normal group is not poor comprehension, whereas for the hearing-impaired, language is a problem and they are unable to understand it. Also, the hearing-impaired have more diffiuclty with theory oriented subjects {according to the teacher's questionnaire).

5. You spend time with studies

Variables	Normals		Hearing-impaired	
	%	Number	%	Number
a) Everyday	57.14	8/14	8	1/12
b) Just before the exam.	21.43	3/14	25	3/12
c) Sometimes, whenever you feel like it.	21.43	3/14	66.66	8/12

This indicates that the normal students were more regular workers than the hearing-impaired.

6. Why did you join this course? (i,e.motive for joining).

Variables	Normals		Hearing-impaired	
	%	**Number**	%	**Number**
a) Your own interest	64.28	**9/14**	33.33	**4/12**
b) Parents encouragement	7.14	1/14	50	6/12
c) To get a job	28.54	4/14	8	1/12

The person's own interest and motivation, his opinions were most prominent in choice of a career option or educational course in the normals, whereas in the case of the hearing-impaired, parental support and encouragement was of prime importance.

7. What do you plan to do after completing the course? (future plans).

Variables	Normals		Hearing-impaired	
	%	Number	%	Number
a) Higher Education	35.71	5/14	41.66	5/12
b) Seek a job	64.28	9/14	41.66	5/12
c) Other (undecided)	-	-	16.66	2/12

Miscellaneous

Questions	Normals			Hearing-impaired	
		%	Number	%	**Number**
l.Do you enjoy parties or functions	Yes	100	14/14	92	11/12
	No		-	8	1/12
2.Do you have feelings of being left out or different from	Yes	100	14/14	83.33	10/12
	No		-	16.66	2/12

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others?					
3.Are you liked by others?	Yes No	100	14/14	66.66 33.33	8/12 4/12
4.Do you feel your work is appreciated by others?	Yes No	100	14/14 -	58.33 41.66	7/12 5/12
5.Do you participate in cultural activities?	Yes No	100	14/14	100	12/12
6.Do you go shopping for things required at hone?	Yes No	100	14/14	100	12/12

7. Do you travel to palces alone? Since which age ?

	Normals		Hearing-impaired	
	%	Number	%	Number
No		-		
Yes	100	14/14	100	12/12
Mean age (if yes)	12 yrs		14.6 yrs	

Thus we see a slightly lower age for unchaperoned independent travel among the normals than the hearing-impaired, indicative of a longer time of dependance on protection.

9. Do you feel your parents love your brothers and sisters more than you?

	Normals		Hearing-impaired	
	%	Number	%	Number
Yes	92.86	13/14	41.66	5/12
No	7.14	1/14	58.44	7/12

10.Do they encourage your brothers and sisters more than you in terms of academics, career etc?

	Normals		Hearing-impaired	
	%	Number	%	, Number
Yes	100	14/14	91.66	11/12
No			8	1/12

On viewing responses of hearing impaired and normals on questions 9&10, we see a greater feeling on the part of the hearing impaired, that they are less loved, and that less is expected of them. This is bound to have ramifications on the motivation, and psyche of the hearing impaired person, and affect his behavior and attitudes.

In terms of interests and vocational preferences, both the groups had varied interests and high ambitions, eg: becoming a software engineer, running a software export programme, having a company job, running a business concern, etc.
[As they were students of computer science, most of their job preferences fall along that line].

The above finding of the present study, indicating profess-ional, challenging, and more high profile career ambitions among the deaf is a change from earlier studies that the deaf are vocationally immature when compared to the normals.

expressing preferences for occupations at semiskilled and unskilled levels. Schildroth, Rawlings and Allen (1991), quoted studies done by the centre for assessment and demographic studies (1989), which indicated that the types of vocational courses taken by deaf students tend to follow social stereotypes. However, the female subjects of the present study also had foraged into the male domain of computer related field, and did not remain bound by the shackles of tradition, nor did she allow her handicap to prevent her from aspiring for and pursuing higher education. A notable achievement indeed, in the Indian scenario, where till recently, the girl child was considered a burden, not to mention a deaf girl child J

C. Questionnaire for teachers.
(Given in Appendix - 111)

Only four teachers responded to the questionnaire given. They were all teaching different subjects to physically handicapped students doing Diploma in computer science, and the subjects of the present study were their students.

Questions	Yes		No	
l.Have you taken any special training for teaching the handicapped?	75%	3/4	25%	1/4
2.Do you modify your teaching methods because of the presence of hearing-impaired students in your class?	100%	4/4	-	
3.Are the students seated in the classroom in any specific order?	50%	2/4	50%	2/4

Only 2 lectures including the one who had undertaken special training took note of the seating arrangement. They reported seating the student next to a hearing student to facilitate taking down of notes.

4.Do you try to find out whether the hearing-impaired student has understood what is taught?	100%	4/4	-	-

5.If the student has not understood, how you make him understand?			
Helping the child outside the classroom.		75%	3/4
Repeating the lesson.		25%	1/4
6.i)Do you give the hearing-impaired student more help?	Yes No	100	4/4

ii)Specify

(a) Taking special classes;
(b) Using the overhead proejector (more visual cues)
(c) Giving moe written communication on board/paper,
(d) Giving extra attention in the laboratory,
(e) Combining them with normal students,
(f) Using computers for teaching.

	%	Number
7.Compared to a normally hearing student is the hearing-impaired student motivated to learn.		
a)To a greater extent	25	1/4
b)To a lesser extent		
c)To the same extent	75	3/4
d)Other (specify)		
8.Does the hearing-impaired student depend on		
a)Lectures b)More on printed notes c)One-to-one explanation	100	4/4

Communication and Interaction

l.How do you communicate with the hearing-impaired students?		
a)Just as with the normals (using speech)	-	-
b)Differently	100	4/4

i) Gestures only ii) Speech with exaggerated mouth movement, iii) Both gestures and exaggerated speech move-ments. iv) Any other (specify)		100	4/4
2.Do the hearing-impaired speak in class eg. to clear their doubts?	Yes No	75 25	3/4 1/4
3.Do they respond in class when called upon to answer questions?	Yes No	100 0	4/4 0
4.Do they answers orally?	Yes No	0 100	0 4/4
Do they use gestures?	Yes No	100 0	4/4 0
5.Do you understand the gestures used by the hearing-impaired?	Yes No	100 0	4/4 0
6.If you do not understand do you. a)Ignore it b)Ask the student to repeat till you understand c)Ask them to write d)Any other (specify)		100	4/4
7.Do you ensure that the student is looking at you before you talk to him?	Yes No	100 0	4/4 0
8.)*In the classroom do you stand where light falls on your face?	Yes No	50 50	2/4 2/4
9)*Do you sit or stand in one place when you are teaching or do you move around	Stand still Move around	0 100	0 4/4
10)*Do you often speak while you are facing the blackboard or with your back to the student?	Yes No	50 50	2/4 2/4

[*Factors 8, 9, and 10 could affect visibility of the teacher's face and hence affect comprehension of what is taught]

11.Do you make sure the class is quiet before you talk to the students?	Yes NO	100 0	4/4 0
12.Do the hearing-impaired come and talk to you?	Yes No	100 0	4/4 0
13.Can you understand his/her speed?			
a)Usually		25	1/4
b)Sometimes		75	3/4
c)Never			
14.Can you understand higher speech if he/she uses gestures also?	Yes No	100	4/4
Linguistic Ability			
l.Are the hearing-impaired studentes able to under-stand what they read?	Yes No	100	4/4
2.Does the student use appropriate words?	Yes No	50 50	2/4 2/4
3.Does the student usually speak in			
a)Single words		25	1/4
b)Phrases (incomplete sentences)		75	3/4
c)Complete sentences			
4.If the student can speak in sentences does he/she use			
a)3-4 word sentences		100	4/4
b)5-6 word sentences			
c)Complex sentences			

5.Are there frequent spelling mistakes improper vocabulary sentence construction (grammer) etc. in these written work?	Yes No	100 -	4/4

Scholastic Skills

l.How do the hearing-impaired students perform in tests in general in class?			
a)As well as normal hearing-students, b)Better c)Poorly		100	4/4
2.Do they require more time for completing the test?	Yes No	25 75	1/4 3/4
3*.a)Which subject is the student poor at? b)Possible reason.			
4*.a)Which subject is the student good at? b)Possible reason			

*[Their teachers felt that the hearing-impaired students had more difficulty with theory based subjects, technical subjects, English and logic building and that programming based subjects, being more practical, were more easy].

The students' general class behavior was reported as

a} Alert	50	2/4
b) Cooperative	25	1/4
c) Mischievous		
d) Sociable		
e) Quiet	25	1/4
f) Any other (Specify)		

SUMMARY AND CONCLUSION

The presence of a hearing impairment affects the entire life of the individual. Hearing loss may result in emotional and social difficulties as well as linguistic and consequent educational difficulties.

Most research on the effects of hearing loss has been confined to children at the school or high school level. In India, where college level of education among the hearing impaired has just taken roots, research pertaining to the effects of hearing impairment assumes prime importance.

The aim of the study was to evaluate the effect of hearing loss on:

1. Scholastic Aptitude
2. Social Skills.

The study was done on fourteen hearing impaired college students ranging in age from 16 years to 23 years (mean age 19.5 years) and fourteen normal hearing college students ranging in age from 17 years to 23 years, (Mean age 18.86 years).

The following tools were employed

1. Raven's Progressive Matrices (intelligence Evaluation)
2. 16 P.E. Questionnaire (Personality Evaluation)
3. Bell's Adjustment Inventory (Adjustment Evaluation).
4. Questionnaires:

i) For the hearing impaired

ii) For the normal hearing

iii) For the teachers of the hearing impaired.

The results of the above study may be summarised as follows.

Both the normal hearing of the hearing impaired were found to have average intelligence. However, qualitative difference existed, the hearing impaired having poorer abstract thinking ability. They were also found to be more aggressive, less practical, down to earth or realistic and had greater frustration levels than normals.

On the average, both the hearing impaired and the normal hearing college students were less stable, easily upset and changeable, easily affected by feelings, had less social boldness and tended to be apprehensive, insecure and troubled. This is perhaps due to the transition they were undergoing from adolescence to adulthood.

Adequate balance of personality was found in terms of being

1) Reserved versus outgoing
2) Sober versus lively
3) Expedient versus conscientious
4) Tough or self reliant versus tender minded
5) Trusting versus suspicious
6) Forthright versus astute

7) Conservative versus liberal

8) Group dependant versus sel£ sufficient

9) Indisciplined versus controlled.

Unlike the normal hearing, the hearing impaired were found to have unsatisfactory home, health and emotional adjustment and were somewhat more critical. Hearing impaired males were found to be feminine and both groups of females of were found to have masculine tendencies.

All of them hailed from middle or upper middle class and had educated parents. They all had extra help with studies and parental encouragement. All though many of the hearing impaired subjects had acquired hearing loss, they preferred to use sign language for communication among themselves. Though reporting usage of hearing aid, they rely mostly on speech reading and do not use the hearing aid. Schooling was started at a later age than for the normal group. Most of their lecturers have no formal training in educating the deaf. They reportedly perform on par with their normal hearing peers, but their written work had more spelling and grammatical errors. Language based theoretical subjects were more difficult for them. They were quite sociable, had varied interests and are ambitious like their normal hearing peers. However, strong undercurrents exist - they report instances of being teased, feelings of being different from others, having to work harder than others and parents expecting better performance from normal siblings, than them.

Thus, on viewing the above findings, of the present study, we may conclude that hearing loss does indeed have adverse effects on scholastic and psycho-social performance.

IMPLICATIONS OF THE STUDY:

The present study has helped to highlight numerous aspects which affect the psychosocial and educational performance of the hearing impaired.

As the study was done on Indian hearing impaired college students, it is relevant and pertinent to the Indian context and the information can be used in the alleviation of these problems. This, it is hoped, will pave the way for a better future of the deaf college student as a well balanced productive individual - Emotionally, Socially and Educationally.

SUGGESTIONS FOR FURTHER STUDY:

1. The study may be replicated using a larger sample.
2. Those hearing impaired included in the 3study had very severe hearing loss. The study may be replicated with the hearing - impaired having mild to moderate hearing loss.

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APPENDIX -I

QUESTIONNAIRE FOR THE HEARING-IMPAIRED

Dear subjects,

This questionnaire forms part of a study conducted to have a better understanding between hearing loss, scholastic aptitude and social skills. Kindly read each question carefully and answer it as accurately as possible. Your co-operation is vital to the success of this study. Thank you for your participation in this study.

Subjects details :

Name Age/Sex

Course enrolled for

Year

Note : Tick (/) the answer suitable for your choice wherever essential. If you have any other answer(s), write below the corresponding question.

1. Age at which hearing was noted?

2. Are you using a hearing aid? Yes/No

3. Who recommended the aid?

   a) Audiologist (Based on hearing evaluation)
   b) ENT specialist
   c) Others (specify)

4. How long have you been using the aid? .... Yrs ...months

5. What type of hearing aid (s) is being used by You? (If more than one hearing aid is being used, specify about each.

   a) Body level . . . . . model . . . . . with

      (i) Single cord
      (ii) V cord.

   b) Ear level . . . . . model . . . . . .

6. Do you wear hearing aid? When? Apprx.no.of hours

   a) At home and/or in hostel

   b) In class, during lectures or demonstrations.

   c) Listening to the radio/TV

   d) Outdoors such as while shopping, travelling, visiting, friends, attending functions.

7. Is the hearing aid helpful to you in

   a) Locating the sound.
   b) Following speech.
   c) Enjoying music.
   d) Hearing environmental sounds such as door bell, horns, telephones, animals.

Familial Background

Parent	Age	Education	Occupation	Income
Father				
Mother				
Faailial	Constellation			

Siblings (in birth order)		Well/unwell	Age	Sex	Education	Present occupation

Linguistic and Communicative Variables

1. Language spoken at home

2. Language known (in order of familiarity) to

	Language	Speak	Read	Write	Understand
a)					
b)					
c)					
d)					

3. Medium of instruction in college.

4. How do you communicate with
(tick whichever is applicable)

		Through					
		Speech	Gestures	Sign Lang.	Writ-ing	Mouthing the words	Pointing
a)	Family						
b)	Hearing impaired friends						
c)	Normal hearing classmates						
d)	Teacher						
e)	Normal hearing Public in shops, roads buses, neighbours,etc						

	Frequently	Sometimes	Never
5. Do your normal hearing listeners understand what you are trying to communicate?			
6. Do you ask people to repeat or to speak louder.			
7. Can you understand a person when you can't see the speaker's face?			
8. Do you spontaneously or voluntarily initiate conversation with others?			
9. Do you have difficulty in conversing with a group of people?			
10. Do you find it difficult to understand speech in a place where there is a lot of other noise?			

^ !

Scholastic aptitude *

1. At which age did you start schooling?

2. What type of school did you attend?

   a) School with all normal hearing students (Normal school)

   b) School with both handicapped and normal students (integrated school)

   c) Special school (only for handicapped students).

3. Did you have extra help with your studies from teachers or parents? Yes/No

4. i) Do you understand some teachers better than others? Yes/No

ii) If yes, why?

a) because he/she speaks more slowly

b) because he/she faces you while speaking

c) because he/she uses more diagrams etc. to show what she is teaching

d) Other reasons (specify)

5. Do you

a) understand lectures (what is taught in class)

b) study from written notes

c) both.

6. (i) Which subject do you find difficult?

(ii) Why is it difficult?

a)

b)

7. You spend time with studies

a) Everyday

b) Test before examinations

c) Sometimes - whenever you feel like it.

8. Why did you join this course?

a) Your own interest

b) Parents encouragement?

c) To get a job

d) Any other person/reason (specify)

9. What do you plan to do after completing the course?

   a) Higher education

   b) Seek a job

   c) Other

Psychosocial Behaviour

1. Do others talk to whoever is with you instead of asking you, if they want to know something about you? Yes/No

   Eg. Asking them what your name is, instead of asking you directly?

2. Do you like to be more with

   a) The hearing-impaired people

   b) Normal hearing people who use sign language

   c) Normal hearing people who don't know sign language can only speak

   d) No difference - anybody is okay.

3. Do you enjoy parties or functions? Why Yes/No

4. Do you have feelings of beings left out or different from others? Yes/No

5. Are you liked by others? Yes/No

6. Do you feel your work is appreciated by others? Yes/No

8. At home, do you go shopping? Yes/No

9. Do your brothers and sisters who have normal hearing, go out more of tenth an you do? Yes/No

10. a) Do you travel to places alone? or Does someone always come with you? Yes/No

    b) Since which age have you confidently travelled alone?

11. Have you had unpleasant experiences because of your handicap - teasing, looked down upon, etc. Yes/No

    If yes, specify.

12. In your leisure time, what do you do?

    a) Play games

    b) Read magazines

    c) Watch movies

    d) Talk to people

    e) Go for walks

Miscellaneous

1. Do you feel your parents love your brothers and sisters more than you. Yes/No
2. Do they give you more attention because of your handicap? Yes/No
3. Do they encourage your normal hearing siblings more in terms of achievement in academics, career, etc. Yes/No
4. Do they expect better performance from your normal hearing siblings than from you. Yes/No
5. Are you given equal responsibility as your normal hearing siblings at home? Yes/No
6. Do you think you have to work harder to reach the same level of proficiency and acceptability as others? Yes/No

7. Do your parents or family encourage you to take up a job? Yes/No

8. What are your hobbies/talents?

9. What are some of the things you wish you could do, but can't because of your hearing problems? Eg. sing songs.

10. If you had a choice, what sort of a job would you like to have?

11. Any opinions, regarding your impairment and its effects on your daily life or education that you would like to mention.

RL/-

APPENDIX-II

QUESTIONNAIRE FOR THE NORMAL HEARING POPULATION

Name :

Age :

Sex :

Familial Background

Parent	Age	Education	Occupation	Income
Father				
Mother				

Familial Constellation

Siblings (in birth order)	Normal/Abnormal	Age	Sex	Education	Present Occupation

COMMunication and Language

1. Language spoken at home

2. Languages known (in order of familiarity) to

	Language	Speak	Read	Write	Understand
a)					
b)					
c)					
a)					

3. Medium of instruction in college.
4. Do you spontaneously or voluntarily initiate conversation with others or do you usually wait for others to speak to you ?

Scholastic Variables

1. At which age did you start schooling ?
2 Did you have extra help with your studies from teachers or parents ? Yes/No
3. Do you
   a) Understand lectures (what is taught in class)
   b) Study from written notes
   c) Both
4.(i) Which subjects do you find difficult ?
   (ii) Why is it difficult ?
5. You spend time with studies
   a) Everyday
   b) Just before exams
   c) Sometimes - whenever you feel like it.
6. Why did you join this course ?
   a) Your own interest
   b) Parents encouragement
   c) To get a job
   d) Any other person/reason (specify)
7. What do you plan to do after completing the course ?
   a) Higher education
   b) Seek a job
   c) Other

Miscellaneous

1) Do you enjoy parties or functions ?
   Why ? Yes/No
2) Do you have feelings of being left out or different from others ? Yes/No
3) Are you liked by others ? Yes/No
4) Do you feel your work is appreciated by others ? Yes/No
5) Do you participate in cultural activities ? Yes/No
6) Do you go shopping for items required at home ? Yes/No
7)a) Do you travel to places alone ? (or does someone always come with you). Yes/No
   b) If yes/ since which age have you confidently travelled alone ?
8) In your leisure time/ what do you do ?
   Do you prefer to be alone or with people ?
   a) Play games
   b) Read magazines/books
   c) Watch movies/T.V
   d) Talk to people
   e) Go for walks by yourself.
9) Do you feel your parents love your brothers and sisters more than you ? Yes/No
10) Do they encourage your brothers and sisters more in terms of achievement in academics/ career, etc. ? Yes/No
11) What are your hobbies or talents ?
12) If you had a choice/ what sort of a job would you like to have ?

APFENDIX-III

Questionnaire for Teachers

Request: This questionnaire is prepared as part of a study conducted for the purpose of having a better understanding between hearing loss scholastic aptitude and social skills. Kindly read each question carefully and answer it as accurately as possible. Your co-operation is vital to the success of this study. Thank you for your participation in this study.

Name :

Age :

Sex :

Qualification :

Teaching Experience: Total (Yrs)

Hearing Impaired Students

Subjects Taught:

Duration for which the teacher has known the hearing impaired student.

Class Strength:

Number of hearing impaired students in class:

1. Have you taken any special training for teaching the handicapped ? Yes/No
2. Do you modify your teaching methods because of the presence of hearing impaired students in your class ? Yes/No

3.a. Are the students seated in the classroom in any specific order ? Yes/No

b. Is this done to help the hearing impaired students ? Yes/No

If yes, give reasons

4. Do you try to find out whether the hearing impaired student has understood what is taught ? Yes/No

If yes/ how ?

5. If he/she hasn't understood/ do you make him understand by

a. Repeating the lesson

b. Making another child repeat the lesson

c. Help the child outside the class room

d. Have him/her sit next to a normal child

e. Any other (specify)

6. Do you give the hearing impaired child more help ? Specify

a.

b.

c.

d.

7. Compared to a normally hearing child/ is the hearing impaired student motivated to learn.

a. To a greater extent c. To the same extent

b. To a lesser extent d. Other (specify)

8. Does the hearing impaired student depend on

a. Lectures.

b. More on printed matter/notes

c One-to-one explanation

d. Other.

Communication and Interaction

1. How do you communicate with the hearing impaired students?
   a. Just as with the normals (using speech)
   b. Differently
      i) Gestures only
      ii) Speech with exaggerated mouth movements
      iii) Both gestures and exaggerated speech movements
      iv) Any other (specify)
2. Do the hearing impaired speak in class/ for instance/ to clear their doubts ? Yes/No
3. Do they speak in class when called upon to answer questions ? Yes/No
   If yes/ just as often as normal hearing students ?
4. Do they answer orally ? Yes/No
   Do they use gestures ? Yes/No
5. Do you understand the gestures used by the hearing impaired students in class ? Yes/No
6. If you don't understand/ do you
   a. Ignore it
   b. Ask the students to repeat till you understand
   c Ask them to write
   d. Any other (specify)
7. Do you make sure that the student is looking at you before you talk to him/her ?
8. In the classroom while teaching do you stand where light falls on your face ?

9. Do you sit or stand in one place when you are teaching/ or do you move around ?
10. Do you often speak while you are facing the blackboard or with your back to the student ?
11. Do you make sure the class is quiet before you talk to the student or teach the class ?
12. Do the hearing impaired students come and talk to you ?

Yes/No

13. Can you understand his/her speech ?

a. Usually b. Sometimes c Never

14. Can you understand his/her speech if he/she uses gestures also ? Yes/No

Linguistic Ability

1. Are the hearing impaired students able to understand what they read ?
2. Does the student use appropriate words ?
3. Does the student usually speak in

a) single words b) in phrases (in complete sentences)

c) complete sentences.

4. If the student can speak in sentences/ does he/she use

a. 3-4 word sentences

b. 5-6 word sentences

c. complex sentences.

5. Are there frequent spelling mistakes/ improper vocabulary/ sentence construction (grammar) etc./ in their written work ? Specify

Scholastic Skills

1. **How do the hearing impaired students perform in tests/ in general in** class ?
   a. As well as the normal hearing students ?
   b. Better
   c. Poorly
2. Do they require more time for completing the tests ?

3.a. Which subject is the student poor at ?
  b. What reason would you attribute to this ?

4.a. Which subject is the student good at ?
  b. What could be the possible reason for it ?

- General behaviour in class

a) Alert
b) Co-operative
c) Mischievous
d) Sociable
e) Quiet
f) Any others - specify

APPENDIX - IV

16 P.F. Personality Factors (Brief description)

Factor	Low Sten Score (1-3)	High Sten Score (8-10)
A	Reserved, detached, critical, aloof, stiff. (Sizothymia).	Outgo ing, warmhearted, Easy going, participating (Affectothymia)
B	Dull, concrete think-ing (Low-intelligence)	Bright, Abstract thinking (High Intelligence)
C	Affected by feelings, emotionally less stable easily upset, changeable (Lower ego strength)	Emotionally stable, mature, faces reality, calm. (Higher ego strength)
E	Humble, mild, easily led, Docile, accommodating. (Submissiveness)	Assertive, aggressive, competitive, stubborn. (Dominance)
F	Sober, Taciturn, Serious (Desurgency)	Happy go lucky, enthus-iastic (Surgency)
G	Expedient, disregards rules. (Weaker super ego strength)	Conscientious, persistent moralistic, staid (Strong -er superego strength)
H	Shy, timid, threat sensi-tive (Threctia)	Venturesome, uninhibited, Socially bold (Parmia)
I	Tough minded, self reliant realistic (Harria)	Tender minded, sensitive, clinging, over protected, (Premsia)
L	Trusting, accepting conditions (Alaxia)	Suspicious, hard to fool. (Protension)
M	Practical, 'down to earth' concerns (Praxernia)	Imaginative, Bohemiah, absent minded (Autia)
N	Forthright, unpretentious genuine, but socially clumsy (Artlessness)	Astute, polished, socially aware (Shrewdness)
0	Self assured, placid, secure, complacent, serene (Untroubled adequacy)	Apprehensive, self reproa-ching, insecure, worrying, troubled.(Guilt proneness)

Ql	Conservative, respecting traditional ideas (Conservativism of temper -ament)	Experimenting, liberal, free thinking. (Radicalism)
Q2	Group dependant, a joiner and sound follower. (Group adherence)	Self sufficient, resource-ful, prefers own decisions (Self sufficiency)
Q3	Undisciplined, self conf-lict, lax, follows own urges, careless of social rules. (Low self sentiment integration)	Controlled, exacting will power, socially precise, compulsive, following self image. (High strength of self sentiment)
Q4	Relaxed, tranquil, torpid, unfrustrated, composed. (Low ergic tension)	Tense, frustrated, driven, over wrought. (High ergic tension).