CHAPTER III

REVIEW OF LITERATURE ON THE EDUCATION OF THE DISABLED

3.0 Introduction

Research evidence on the educational attainments of Hearing-Impaired children provides support for the oral option. The many, mostly American, studies which have investigated the effects of communication methods on the educational achievements of Hearing Impaired, indicate that Hearing Impaired children taught by consistently oral-only methods achieve superior attainments to those taught by manual-visual/total communication approaches.

3.1 Omnibus

Four studies dealing with special education for disabled persons, which have considered disabled persons as a group was looked into.

Muricken (1995) in his book studied persons with disabilities in society. The study covers:

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

- The process of adjustment of the disabled person to their disability and the social situation in which they live.

- The problems faced by the Handicapped people in finding their rightful place in society.
Role of society in integrating the disabled through education and rehabilitation programs. This book offers a sound theoretical base drawn from most modern and the critical sources for a better understanding of the problems with disabilities in society.

Pandey and Lal Advani (1995) investigated disability in their book "Perspectives in Disability and Rehabilitation".

The research describes various aspects of disability and rehabilitation in India and in some other parts of the globe, which are relevant to the third world.

Presenting a concise historical background an overview of the current status and an analytical review of the existing services practical measures have been suggested including a National Programme on the model of community based rehabilitation as public services. The survey touches the crucial areas of human rights, discrimination against the disabled and their psycho-social integration. The programs and services rendered by governmental and voluntary agencies to enable the disabled to be fully rehabilitated in Society.

Agarwal and Pachal (1993) found that very few handicapped people are in employment despite 3% of job reservation in grade ‘c’ and ‘d’ of government sector.

Rane (1983) and Cawasji (1985) studied the implementation of the centrally sponsored scheme of integrated education for the disabled.
Lata (1985) studied the impact of parental attitude on social, emotional and educational assessment of handicapped and non-handicapped students. It appears that parental attitudes did not differ significantly with adjustment of handicapped girls.

Mallaya (1982) in a study of children with special needs during play sessions observed that acceptance of the child and a permissive atmosphere during play was found to be helpful. The study also came out with guidelines for teachers organizing play sessions.

3.2. Hearing Impaired

One of the earliest investigations was undertaken by Pinter et al in 1918 in the USA. The research indicated those Oral Hearing-Impaired students outperformed Manual Hearing-Impaired students at the upper ages, that is, after the age of 14 years.

Generally, it is believed that the evidence and argument presented offer firm support for an oral-only approach in the education of Hearing-Impaired children. With the conclusion reached by Quigley & Paul (1986) who on reviewing the factors affecting the educational achievements found this is most noticeable in Hearing-Impaired students who are enrolled in indisputably comprehensive oral programs.

Much more recently, Geers et al (1974) completed a study of attainments involving 327 Hearing-Impaired children from 15 total communication
programmes and 13 oral communication programmes. Each child had a hearing loss greater than 90 dB and each had been educated with consistent communication (either total or oral) since the age of three. The children were given a language test designed to evaluate the correctness of their grammatical utterances. The total communication group at age five had an average of 20% of its grammatical utterances judged correct, with the age six group also attaining 20% correct, 38% were correct at age seven and 32% were correct at age of eight. The oral groups were significantly higher at all age groups and made greater progress over the period of testing: 40% were correct at age five, 42% made progress over the period of testing: 40% were correct at age five, 42% were correct at age six, 58% were correct at age of eight. The study of Geers et al (1974) thus makes a strong claim of better results for orally taught children and challenges the assertion made by total communication advocates that total communication hastens the deaf child’s language development.

A further study offering support for oral education of the Hearing-Impaired was undertaken by Ogden (1979) also in the USA. He conducted a large-scale retrospective study of 637 ex-pupils of three oral schools. Ogden found that in comparison with national data for normally hearing people, a higher percentage of its subjects were in professional and managerial occupations. Approximately 31% of them had completed at least four years of college education, which is again above the national average for the hearing population. The respondents attributed
their success to development of oral English resulting in good communication and language skills.

Now it could be claimed that the hearing Impaired people featuring in Ogden's research probably had parents of higher social class than average and it was social class not oralism itself which accounted for their success.

Indian Studies located on the Education of the Hearing-Impaired

Ghate (1997) investigated the need for sign language in the Education. She found that sign language could help the hearing-impaired to communicate better among themselves, especially for late arrivals to the school.

Rita Mary (1994) studied the role of Christians in the Education of HEARING-IMPAIRED. The study examined the ancient laws which were unfavorable to the education of the HEARING-IMPAIRED and highlighted how some of the Christian individuals were and are able to change the attitude of the society in favour of them.

Four studies covered hearing-impaired as a sub-sample (NCERT (1968); William (1981); Bala (1985), Goel (1986) and Jangira (1987)). These are studies comparing hearing impaired children with non-hearing impaired children on selected variables.

They studied the sociometric choices of hearing-impaired children in an integrated setting as well as their academic achievement, as reflected in ranking in
respective classes. It was discovered that hearing-impaired children also received choices from non-hearing impaired children for the selected tasks and most of them were near average or above average in academic achievement.

Banerji et al (1970) investigated the nature of deaf children in the age group of 14 - 18 years. The study revealed that, even under similar environmental conditions, interests differed.

Table 3.1

**Distribution of Studies on Education of Hearing-Impaired.**

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3.3. Communication Approach

The Oral option does not preclude participation in the Hearing-Impaired (HEARING-IMPAIRED) world and the HEARING-IMPAIRED signing community. Some orally educated HEARING-IMPAIRED young people decide to attend Hearing-Impaired Clubs, meet HEARING-IMPAIRED signing people and themselves learn to sign (Lynas, 1986). No one should doubt the need or deny the right of HEARING-IMPAIRED individuals, if they wish, to develop confidence
and pride in their special identity through the use of sign language and participation in the HEARING-IMPAIRED community. There seems to be no special difficulty for the oral HEARING-IMPAIRED individual in learning to sign well enough to communicate with HEARING-IMPAIRED signing people. There is no evidence however, that the HEARING-IMPAIRED person who can communicate only with signs can just as easily learn English as a second language.

The oral option for the young HEARING-IMPAIRED child is realistic. The educational options, oral or otherwise, available to the HEARING-IMPAIRED child on reaching school age depend to some extent on where the child lives. Educational provision for HEARING-IMPAIRED children varies from area to area so that the type of placement offered depends not just on the characteristics and abilities of the child but on the policies and practice of the local area in which he/she lives. On the face of it, therefore, parents may not have the opportunity to choose from all possible options the type of education they might prefer for their Hearing-impaired child.

Lynas (1986) investigated the attitudes of 40 HEARING-IMPAIRED children and young people who had received an oral education which had offered them a valuable "preparation for life". All of them believed that the achievement of competence in spoken English should be the central goal of HEARING-IMPAIRED education and whilst some used signed communication with other H.I people, none believed that sign language had any value as a tool of education. The views of these young people echo strongly those of then 637 American orally
educated men and women in the research project by Ogden (1973) 43% of these subjects had hearing losses over 80dB, yet the majority of the sample believed that total communication was prejudicial to the development of intelligible speech, lip-reading skills and in a social context, friendship with hearing peers.

Haley (1987) studied the effects of disability status (hearing impaired or nonhearing impaired) and communication method (sign language, interpreter, or written) on deaf subject ratings of counselor social influence, counselor empathy, and willingness to see the counselor. The results indicated that deaf or hearing counselors were rated higher on social influence effectiveness and empathy if they used sign language and therefore support sign language as a critical tool with this group. In addition, subjects with a high willingness to see a counselor were more willing to see a counselor who used sign language.

Schneiderman (1987), investigated the effectiveness of a communication-based language intervention approach which was designed to improve the ability of hearing-impaired students to use specific structures of the English language for communication purposes. In summary, the communication-games intervention strategy was highly effective in improving hearing-impaired students' ability to write syntactically correct Noun + Verb + Where sentences in the generalization task (the story writing format). Thus, the effectiveness of a teaching program that embedded a targeted linguistic structure in an interactive instructional context was documented.
Sanborn's (1988) study clearly describes the school language environment of hearing-impaired students and the influence of teacher talk strategies and formats on classroom interaction. Participants were the teacher and eight profoundly hearing-impaired students, ages 9.8 to 11.7. It was concluded that interaction format (conversational vs. lesson/didactic) as motivated by teacher intent, influenced the use of the two identified teacher/hearing-impaired student interaction strategies more than classroom event.

McKenzie's (1989) study was designed to determine the certification and training in manual communication on systems of teachers of the deaf/hearing impaired, the type and use of manual communication systems currently used in Ohio teachers of the deaf/hearing impaired for the various supplementary signing systems employed in Total communication classrooms. A total of 233 respondents provided the data upon which this investigations rests. The data showed that in most Total communication programs in the state systems, most teachers use a sign system of their own choosing or one selected for them by an administrator, who has little if any knowledge of signing as a language. The majority of the teachers indicated a preference for Signing Exact English alone or in combination with American Sign Language as the sign system of choice for university training programs and for use in Total communication classrooms. The data also showed that a very small percentage of teachers of the deaf/hearing impaired hold any formal certification in sign language and an even smaller percentage were asked to
demonstrate signing skills when they were hired to teach deaf/hearing impaired students in a Total Communication classroom.

Indenbaum's (1992) study was designed to explore the relationship between communication competence and social/emotional adjustment in deaf children. Communication competence consisted of two-language level and communication skill.

More Competent communications were hypothesized to be better adjusted. As aspect of the study included the comparison of orally trained deaf children (O/A) to those who use total communication (TC). Communication skill was positively related to the adjustment variables. Deaf children who were considered more competent communicators showed better adjustment across all three-adjustment variables measured; social adjustment, self-image, and emotional adjustment. When TC and O/A groups were compared. Language level was found to be a poor predictor and not significantly related to two of the adjustment variables. Further, results revealed an interaction effect between language level and communication method.

Desselle's (1993) analysis of the data revealed that there is a positive relationship between the family's communication method and the deaf child's self-esteem such that parents who use total communication have children whose self-esteem communication (speech) is much better than that of parents who use sign language. The parents who were most able to communicate with their children by
using sign language, had children whose self esteem scores were higher than parents who were less skilled in sign language. Statistical significance was found between the student’s self esteem score and communication preference level of comfort with the way their parents communicated with them, or communication method used with hearing friends. Parental attitude showed no relationship to sign language skill. No significant relationship was found between the student’s self-esteem score and the number of years at the residential school. Neither was there a significant relationship found between the student’s self-esteem score and the number of years that the student had used sign language.

Robar’s (1993) study is a descriptive phenomenological investigation of hearing teachers’ experiences of using sign language in three different types of educational programs for hearing impaired children in pre-school and elementary settings. Two of these hearing teachers worked in a Total Communication Program, one worked in a sign-assisted Oral Program, and one worked in an ASL (American Sign Language) Program.

3.4. Socio-Economic Studies

Bernstein (1989) investigated the relationships of birth order, sex and certain family variables (Sibling spacing and sibling sex) with internal and external locus of control, intelligence, school achievements, College intentions and College aspirations in a hearing impaired high school population. Male subjects’ IQ scores were more strongly related to their family environments than were females’ IQ scores. Males who had a much older or a younger sister tended to have higher SAT
scores. Subjects with older siblings close in age tended to have low SAT reading scores. Scores of female subjects were largely unrelated to sibling constellation. Birth order was not significantly related to locus of control scores. However, internal locus of control was associated with age differences between subjects and their sisters, especially for the male subjects. Subjects from large families were more external than subjects from small families.

Morris (1991) explored the effects of a hearing-impaired child's age on eleven areas related to family stress. The areas included changes in parental employment, sources of family stress, family finance, communication with family members, behavior management, parental involvement in the child's educational program, educational program benefit to the parent, family social life, source of emotional support, and events associated with parental grieving. Significant findings were related to each area of family stress. Financial stress was reported by all of the parents, and the likelihood that both parents would be employed increased with the child's age. Several other sources of family stress were reported, and parents' scores on the QRS-SF indicated that parents of younger children were experiencing significantly more stress. Scores on the SSQ indicated that while most parents were satisfied with the social support they received, they were slightly below average in the number of sources of social support.

Spouses and siblings were reported as using the same method of communicating with the child. While the age of the child was significantly related to discipline strategies used, the method of communication was not related.
3.5. Speech Reading/Sign Reading

Kent and Read (1995) summarize the progress that has been made in understanding speech as an acoustic signal. In “Acoustic Analysis of Speech” they discuss the acoustic theory of speech production, digital signal processing of speech signals, acoustic characteristics of phonetic segments, sources of variation in the acoustic structure of speech and speech synthesis.

Speech reading by itself is in reality a weak channel for learning oral skills. Its many ambiguous or invisible elements make it so. The extent to which speech reading can contribute to the acquisition of oral skills is, however, central to the present discussion. Some oral HEARING-IMPAIRED adults who are highly skilled speech-readers can understand conversation and process visually presented discourse at much higher levels. A supplement to speech reading is essential if they are to learn how to communicate orally (Ling 1998).

Jeffers and Barley (1980) explain that speech reading means understanding a speaker through a combined look and listen technique. Their book “Speech Reading (Lip Reading)” is useful to the teacher of the hearing impaired as it gives the philosophy and principles useful for the teacher in planning the course of action.

The most common supplement to speech reading is audition, increments in performance when profoundly HEARING-IMPAIRED Children add audition. Studies carried out show that those who have developed auditory processing skills
will lose at least 20% information if their hearing aids become non-functional due to breakdown, inappropriate new fitting, or diverse noise conditions. Those who are severely rather than profoundly HEARING-IMPAIRED are usually able to supplement speech reading more effectively but can be left without an effective supplement if attention is not paid to the conditions under which hearing aids are worn, without hearing aids they may function as if they were totally deaf.

The traditional visual aid to speech reading has been the use of the written form. Most children taught in traditional oral programs have, in fact, learned the language that they use through reading as much if not more than through speech reading. Recently there had been a trend to postpone the introduction of reading until language has been developed through oral interaction. The trend is not universal and tends to be followed strictly only in auditory oral programs.

Nicholls (1979) presented syllable materials and words in low and predictability sentence contexts under seven conditions:

- Audition (a)
- Lip reading (L)
- Audition - plus - lip - reading (AL)
- Cue alone (C)
- Audition - plus - Cues (AC)
- Lip-reading-plus-cues (LC) and
- Audition - plus -lip-reading plus cues (ALC)
Her subjects were 18 children who had been taught by Cued Speech for at least four years. They were all profoundly HEARING-IMPAIRED with average hearing levels in the better ear ranging from 97-122 dB (ISO). As one would predict, scores for words in sentences were generally higher than for syllables. The lip-reading scores and the audition-plus-lip-reading scores were comparable to those reported elsewhere in the literature. The AC scores, compared with the C scores, show that these children, though trained on a predominantly visual system, could use their residual audition effectively. The LC and ALC scores were much higher than have ever been reported for speech reception by profoundly HEARING-IMPAIRED children. These scores correlated highly with the children's language development, which was exceptionally good.

Seoungwoo's (1997) study examined hearing impaired students vocabulary learning from context during natural reading to verify the possible sources of vocabulary development and factors that influence it. Results of the study showed that

i. hearing impaired students learned vocabulary meaning from context during reading

ii. the more information given to readers, the more easily they learned the words

iii. high ability readers learned more meaning of words through reading than did low ability readers even though

iv. incidental vocabulary learning occurred for each type of test, and

v. one exposure the target words was sufficient for producing significant learning.
Lack (1955) gives an outline of teaching the English language to deaf children showing how the structure can be built up one step at a time and giving some suggestions as to the method of presentation.

Many engineers have attempted to produce electronic devices that can be used to supplement speech reading in the teaching of speech but, so far, none of these had been shown to assist substantially in the task. Furthermore, no visual device has yet been produced that will serve as a communication aid, and instrument that, like the hearing aid, can be worn and used by the wearer to differentiate the visual signals in conversational speech.

The Visual supplement that has so far proven to be the most effective speech-reading aid is the system known as Cued Speech, which was formulated by Cornett (1966). The system requires a speaker to use four hand positions to differentiate vowels and eight-hand configuration to differentiate consonants that look alike on the lips. The system permits the cues for consonants and vowels to be produced in such a way that they can be presented in synchrony with the co-articulated patterns of speech. Studies by Ling and Clarke (1975) and by Clarke and Ling (1976), in Canada, provided evidence that children who had made little use of audition and had failed in multisensory-oral programs could benefit from its use. Nicholls (1979) followed up these studies, in Australia, who obtained evidence that the system was highly effective as a means of speech reception.
3.6 Special Education

Survey in Special Education, as a subject of independent existence in literature of educational research, is a recent development. The first review of research in special education in the Encyclopedia of Educational Research (MTTSEL, 1982) appeared in 1982, and the first Handbook of Special Education (Kauffman et al., 1982) appeared in 1983. The first Encyclopedia of Special Education (Reynolds et al., 1987) is as recent as 1987.

3.7 Special Education in India

In India, this area has received attention only in the current Survey of Research in Education. The first three surveys did not identify sufficient research to warrant independent review of trends (Buch, 1974, 1979, 1986). Prior to this, Jangira and Mukhopadhyay (1986) made an attempt at the NCERT to catalogue and review research in Special Education in India. The review covered 108 studies at postgraduate level and 35 studies conducted by different institutions. This survey, however, did not cover research on the gifted.

The present survey does not cover all the research done at postgraduate level. Table 3.2 presents year-wise and disability-wise distribution of doctoral and institutional researches.

Advani (1965) conducted the first doctoral research in the area of Visual impairment in the University of Bombay. In all 57 studies up to 1985 have been recorded, covering a span of three decades since then. The largest number of
studies in a single year was seven, covering practically one in each area of disability appeared in 1985. Special education being a multi-disciplinary area, studies were conducted in different departments. Table-3.2 summarizes year-wise & department wise studies. It can be seen that during the period under review 18 studies were reported in education, two in sociology, 15 in Psychology & 1 each in economics & linguistics. Out of these twenty have been institutional studies, financed by such agencies and organizations as the NCERT, ICSSR, UGC and UNICEF.

Table - 3.2

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V.I. = Visually Impaired
H.I. = Hearing Impaired
O.H = Orthopaedically Handicapped
M.R. = Mentally Retarded
L.D. = Learning Disability.
3.8. Rehabilitation

Fritz (1987) in her study on Career Mobility and the Hearing-Impaired Employee examined the attitudes of supervisors in technical/professional fields regarding (a) career paths judged most probable for hearing and deaf employees, and (b) employees skills and characteristics needed by hearing and deaf employees to experience upward career mobility. The subjects for the study were technical/professional supervisors (N=107) representing 43 companies in Rochester, New York. Data were obtained from a survey instrument developed by the author. The instrument contained a set of items to measure perceived employees skills and characteristics and one to measure perceived group skills into four scales. These were (a) pronunciations and/or speech reception skills, (b) interaction and/or leadership skills, (c) formal communication skills, and (d) managerial skills. Results indicated that supervisory rated hearing employees as having a higher probability of obtaining managerial career paths than deaf employees. For nonmanagerial career paths, hearing and deaf employees were rated approximately equal. In addition, supervisors rated the employee skills and characteristics of managerial skills, formal communication skills, and pronunciations and/or speech reception skills as being less important for deaf than for hearing employees. They rated interaction and leadership skills as being more important for deaf than for instrument measuring employee's skills and performance.
The main aim of the study by Winters (1987) was to identify characteristics of hearing-impaired students served in special needs programs in 1983, 1984 and 1985. A secondary purpose was to determine the relationship between employment status and students' accomplishments and between employment status and degrees of disability.

The employment status was the dependent variables. Selected predictive factors (independent variables) included: (a) age at the survey time, (b) age at onset of disability (c) severity of disability (d) presence of other disabilities (e) highest grade level achieved, (f) preferred mode of communication, (g) previous employment, (h) use of rehabilitation services, (i) completion of individual vocational plans (j) admittance into mainstreamed vocational programs, and (k) completion of mainstreamed vocational programs. Relationships between characteristics of hearing-impaired students and employment status were also analyzed using a model-building procedure and log linear statistics.

The results were, prior work experience was found to be a predictor of employment. Significant differences were found in the relationship between current employment status and previous employment status and in the relationship between current employment status and participation in postsecondary vocational programs, as defined by the independent variables. Log linear analysis of the students' accomplishments model and the degrees of disability model yielded inconclusive findings.
King's (1988) study was on modeling the Career Maturity of Hearing and Adolescents Hearing-Impaired. The purpose of this study was to determine whether the career development process was the same for hearing-impaired and normally hearing adolescents. The regression of career maturity on the eight-predictor variable in Model 1 explained about 20% of the variance in career maturity for the hearing group, and 28% for the deaf. Family cohesion was the strongest predictor of career maturity for both groups. Despite several similar patterns of influence among the variables, a number of relationships among the variables differed for the two groups. Furthermore, differences were noted between the groups in terms of the total effects for some of the eight-predictor variables such as age and achievement.

A second model was developed to describe the career development of the deaf. Model 2 indicated all of the variables in Model 1 as well as five additional variables specific to the experiences of the deaf. Model 2 explained the variance in the career maturity of the deaf subjects. The increases in variance explained were not great enough to be considered significant. The degree of the subject's hearing loss and the degree of mother-child communication were influential in describing the career development process for the deaf in Model 2.

The results suggest that there are similarities and differences in the development of career maturity for deaf and hearing adolescents. The process is more reliant upon background characteristics, such as age, for the hearing. For the deaf, family variables intervene to influence career maturity to a greater extent than
for the hearing. For both groups, higher family cohesion scores were associated with greater career maturity. The inclusion of deaf-specific variables contributed to the explanatory power of the basic model, although not to a significant degree.

Caston’s (1988) research project examined the relationship between vocational evaluation and other factors on the outcomes of vocational rehabilitation of disabled clients. Specific questions concerned with the following factors related to job outcomes: the effects of evaluation recommendations; work history, demographic factors; prognosis; job goals of the counselors and disability.

It was found that there was no correspondence between job recommendations made by vocational evaluators and job outcomes. In addition it was shown that traditional services such as college, placement, work adjustments and restoration were not significant factors in relation to successful vocational outcomes.

There appears to be a relationship between general job categories of prior work and job categories of clients at closure. It was also shown that job placement services have a significant relationship for clients who have a work history. It was found that race, education, public assistance, and source of support were significant factors relative to rehabilitation. Higher education, however, does not predict successful rehabilitations.

The demographic factors of race and public assistance are related to unsuccessful rehabilitations. Black clients have a lower success rate than white
clients. It was found that evaluators and counselors were not able to achieve vocational goals set forth in the rehabilitation plans by rehabilitation counselors and the actual goals obtained by the clients. It was shown that occupations or type of disability do not differentiate clients. Implications suggest there should be more attention given to the evaluation process and analysis of client's work history in vocational planning.

O'Brien (1989) study indicates that although there are many resources for career development available, there is not a specific workshop, or resource for parents to use with their deaf adolescent during their transition to high school. There is no curriculum plan available to teach parents how to facilitate the educational transition planning and career preparation of their deaf adolescent. The purpose of this study was to develop a curriculum plan from which a program can be designed that will prepare parents to facilitate the educational and career preparation of their deaf adolescent.

The study analyzed data that addressed the following central and related questions: (1) What are the components of a curriculum to provide parents of deaf adolescents with resources and expertise so that they will become actively involved in their deaf child's career development? (a) What evidence, if any, currently exists in the literature to show successful parent involvement in the career development process? (b) What workshop programs currently exists for parents to enable them to facilitate the career development transition decisions of deaf adolescents?
(c) What are the perceptions of parents of deaf adolescents regarding career development?

Rotham (1990) conducted two studies in an effort to identify characteristics of hearing-impaired technical college students that relate to choice of and persistence in majors. The sample was followed for three years. Initial information about students’ choices, their learning styles, and their vocational interests enabled fairly accurate predictions be made regarding which students would most likely persist or drop out. Several predictable as well as irregular patterns were discovered. After three years the majority of students who were in majors which were incongruent with their interests had dropped out. Holland’s schema was found to be an effective means of identifying types, which might be attrition-prone in various majors.

The purpose of the research done by Blakesley (1991) was to determine if parents, teachers and hearing-impaired students were satisfied with the students’ current educational placement. Their satisfaction was determined by the responses given on an attitudinal assessment. Parents of 84 hearing-impaired students, 84 teachers of those students, and 27 of the students, ages 12 to 19, from a northern plain state completed surveys.

Significant positive relationships were almost always found when the attitudinal responses were computed according to the respondents’ roles. When the placement sites computed the attitudinal responses, there were 5 significant
positive relationships. It was revealed when the attitudinal responses of the respondents by their role from each placement site were compared, for example, parents from the school for the Deaf compared to parents from the public schools. Indenbaum, (1992) designed a study to explore the relationship between communication competence and social/emotional adjustment in deaf children. Communication competence consisted of two-language level and communication skill.

More competent communications were hypothesized to be better adjusted. As aspect of the study included the comparison of orally trained deaf children (O/A) to those who use total communication (TC)

Communication skill was positively related to the adjustment variables. Deaf children who were considered more competent communicators showed better adjustment across all three-adjustment variables measured; social adjustment, self-image, and emotional adjustment. When TC and O/A groups were compared, the TC group was variable. Language level was found to be a poor predictor and not significantly related to two or three of the adjustment variables. Further, results revealed an interaction effect between language level and communication method.

3.9. Teachers/Teacher Training.

the 134 Hearing Impaired children featuring in the investigation it was those children exposed to the oral-auditory approach who generated longer sentences, used more complex and extended language than those who adopted some form of total communication.

Bambach (1987) this study was done to determine the significant differences between the sub-populations. Research findings indicated that the sample of 59 teachers of the hearing impaired had a higher degree than ordinary school teachers. This differences was strongly manifest in the role-related areas, while no significant differences were found between the groups in self-perceived stress resulting from the tasks related to teaching. Much of the significant findings within the role-related categories are linked to the issues of supervisor-teacher communication; lack of participation in planning and decision making; and uncertainty concerning the criteria for evaluating their performance. No significant differences were found between teacher's job and life satisfaction or level of stress in relation to age. This could be related to the unequal distribution of the sample population over age groups since 40% of the entire sample were between the ages of 35-39.

Teachers working at residential schools for the deaf indicated a significantly higher degree of stress related to the school environment than the public school group. Public school teachers demonstrated a significantly stronger feeling of supervisory support, while teachers of the hearing impaired indicated a stronger feeling of peer support. The subjective comments offered by the deaf
teachers of the hearing impaired included in this sample corroborated the previous research data revealing an evolving polarization between deaf and normally hearing staff at schools for the deaf.

The main aim of the study by Chavarria-Navas (1988) was to determine the results in terms of preference for various types of social support showed Costa Rican special educators would like to see increased support in the emotional and informational dimensions. Age, Teachers serving the hearing impaired, and teachers in training were the only variables, which entered the regression model when testing for stress. In terms of job satisfaction, teachers serving the hearing impaired contributed the most to the variance. These results further support the fact that those who are older and experienced report the least amount of stress and the highest levels of job satisfaction.

The actual need of the study by Wang-Whitmore (1990) was to take an initial step toward designing a competency based curriculum for a special education teacher training program by determining needed competencies for teachers of hearing impaired students. This study investigated two major dimensions among the teachers, administrators and teacher training personnel in Liaoning, China: (1) their perceptions of competencies; and, (2) their perceptions of the teachers' proficiency in those competencies that were identified as important, further the study analyzed whether length of in-services experience, formal educational preparation, and type of school differentiated their perception
and whether those factors differentiated the teachers' proficiency. The grade level taught was also analyzed for the teacher's group.

The results of the study indicated that the teachers, administrators and teacher training personnel have different perceptions on the needed competencies for teachers of the hearing impaired. The variables such as the length of in-service experience, educational preparation, school types and grade levels taught differentiated their perceptions.

3.10. Path Models

The choice of variables for the path model was done after a review of the literature.

Fritz (1987) in her study on Career Mobility and the Hearing-Impaired Employee used path analysis. The employment status was the dependent variable. Selected predictive factors (independent variables) included: (a) age at the survey time, (b) age at onset of disability (c) severity of disability (d) presence of other disabilities (e) highest grade level achieved, (f) preferred mode of communication, (g) previous employment, (h) use of rehabilitation services, (i) completion of individual vocational plans (j) admittance into mainstreamed vocational programs, and (k) completion of mainstreamed vocational programs. Relationships between characteristics of hearing-impaired students and employment status were also analyzed using a model-building procedure and log linear statistics.
In Winters (1987) study work experience was found to be a predictor of employment. Significant differences were found in the relationship between current employment status and previous employment status and in the relationship between current employment status and participation in postsecondary vocational programs, as defined by the independent variables. Log linear analysis of the students' accomplishments model and the degrees of disability model yielded inconclusive findings.

The main aim of the study by English (1993) was to determine how these support services are utilized by college students with hearing impairment, and to determine how the use of support services relate to the levels of academic and social integration, and the strength of students' intentions to stay in school.

Path analysis revealed that the impact of support services upon students' college experience was mixed. Support services had a direct effect on academic integration, and an indirect effect upon intent to stay in school. However, there was no effect of support services upon social integration. These findings were consistent with expectations: Students felt moderately integrated into their academic systems, and support services did not contribute to social integration. Because of the inadequate level of social integration, these students can be considered as at-risk for withdrawing from school before degree completion.

The study by Flowers (1994) was to investigate the best factor predict academic achievement and academic persistence among students. Analysis of the
best predictor for academic persistence, measured by number of semester attended. Along the same lines, academic achievement among the sample. Acceptance of disability was not found to be a significant predictor for either academic achievement or academic persistence. No main or interaction effects were found for any of the independent variables of the study on either of the dependent variables; not statistically significant factors, alone or in combination, in influencing academic achievement or academic persistence.

Indenbaum (1992) found language level to be a poor predictor of rehabilitation.

King (1988) developed a literature based causal model of career maturity to explain career maturity in terms of background variables, family characteristics and individual characteristics. Family cohesion appeared to be the strongest predictor of career maturity.

Caston (1988) identified several factors like race, education and source of support as significant factors related to rehabilitation.

3.11. A Review of Speech Reading tests with methodological consideration and Recommendation

Fifteen Speech-reading tests are reviewed below and discussed as for the way of presentation, the response – scoring method, the test material, the norm group and the results. Overview of Speech reading Tests for Words, Sentences and stories.
<table>
<thead>
<tr>
<th>Author</th>
<th>Mode of Presentation</th>
<th>Test Material</th>
<th>Response Scoring Method</th>
<th>Norm Group</th>
<th>Results</th>
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<tr>
<td>Klein 17)</td>
<td>Live; items repeated 3 times</td>
<td>8 consonants 52 words basic vocabulary, 20 simple sentences derived from language programmes for the deaf (4-6 words, max 9 syllables)</td>
<td>Written response; 1 point correct consonant 1 point correct word; 5 points correct sentence; max 160 points</td>
<td>16 students; 14-21 yrs. from Oregon state School for the Deaf</td>
<td>Range score: 22-144 Range cor. tot. test score-making teachers (8 stds): .79</td>
</tr>
<tr>
<td>De &amp; der 40)</td>
<td>Silent film; speaker: teacher of the deaf</td>
<td>Test version: 3 parallel series *30 nouns *30 independent sentences two stories</td>
<td>Written response; 1 point word correct; 1 point sentence correct; 1/2 point two words in a sentence</td>
<td>68 students from Clarke School for the Deaf ages 9-19 years</td>
<td>Split-half cor. 94: Q1: 43 points Q3: 71 points: Cor. age x lip-reading score: .19</td>
</tr>
<tr>
<td>Son 42)</td>
<td>Silent film; instruction of the test via a recording of trial items with deaf children</td>
<td>Final test (no.3) Form A: 30 words Form B: 30 words Words selected from the Thorndike word frequency list first 3,000 words.</td>
<td>Multiple choice</td>
<td>Presented to 187 students from a school for the deaf aged 6-12 years. 138 forms completed</td>
<td>Cor. form A and B: .95 skewed distribution: many high scores; no further information published.</td>
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<tr>
<td>Zwy 46)</td>
<td>Silent film; 1 speaker with words and sentences 4 speakers with stories: 1 boy, 1 man, 2 women</td>
<td>&quot;How well can you read this?&quot;; list of words (2 versions) list of sentences (31) (2 versions) 6 stories</td>
<td>Written response: score per word (max. 125 points)</td>
<td>761 hearing impaired students: 8-12 years of age</td>
<td>Cor. sentences X words: .78: cor. Sentences X stories: .75</td>
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<td>der &amp; der 40</td>
<td>Silent film; speaker: teacher of the deaf</td>
<td>Test version: 3 parallel series *30 nouns *30 independent sentences two stories</td>
<td>Written response; 1 point word correct; 1 point sentence correct; ½ point two words in a sentence</td>
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<td>by 46</td>
<td>Silent film; 1 speaker with words and sentences 4 speakers with stories: 1 boy, 1 man, 2 women</td>
<td>“How well can you read lips?”; list of words (2 versions) list of sentences (31) (2 versions) 6 stories</td>
<td>Written response: score per word (max. 125 points)</td>
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<td>Live; items repeated 3 times</td>
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<td>Written response; 1 point correct consonant 1 point correct word; 3 points correct sentence; max. 160 points</td>
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<td>Feider &amp; Feider (1940)</td>
<td>Silent film; speaker: teacher of the deaf</td>
<td>Test version: 3 parallel series *30 nouns *30 independent sentences two stories</td>
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<td>Mason (1942)</td>
<td>Silent film; instruction of the test via a recording of trial items with deaf children</td>
<td>Final test (no.3) Form A: 30 words Form B: 30 words Words selected from the Thorndike word frequency list first 3,000 words.</td>
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<td>Silent film; 1 speaker with words and sentences 4 speakers with stories: 1 boy, 1 man, 2 women</td>
<td>&quot;How well can you read lips?&quot;; list of words (2 versions) list of sentences (31) (2 versions) 6 stories</td>
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<tr>
<td>Study (Year)</td>
<td>Methodology</td>
<td>Materials/Procedure</td>
<td>Score/Results</td>
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</tbody>
</table>
| Lowell Keaster Taaffe (1958) | Silent film: 6 different speakers  
"film test of lip-reading": 2 versions: 30 sentences (range 3-10 words); total 180 words; 2 versions resulted from original 60 sentences tried on 408 hearing students | 173 hearing students | Form A: 52 oav 85 (45%) sd 33  
121 oav 102 (54%) sd 33  
Form B: 52 oav 95 (51%) sd 34.121 oav 110 (61%) sd 29.  
Cor. form A x B: .89 |
| Craig (1964)        | Live; with and without voice; 1 teacher of the deaf, each item presented twice  
"Craig Lip-reading Inventory": 2 X 30 words  
2 X 24 sentences (range 4-9 words) | 4 multiple choice pictures: with sentences picture has identical elements; for every sentence 2 key-words | 2 Schools for the hearing impaired (Fletcher > 60 dB);  
school 1 n = 164;  
school 2: 2 = 79;  
perf I.Q. > 65;  
ages 6-16 years | School 1 (n=164):  
a = b  
Words 62.5% 68.0%  
+ Sound 67.0% 72.5%  
Sentence 52.5% 61.5%  
+ sound 61.5% 8.0%  
School 2 (n=790):  
a = b  
Words 62.5% 68%  
+ Sounds 72% 79%  
Sentence 62% 63%  
+ sounds 67% 68%  
(a) = no home training  
(b) + home training; no significant difference between a & b; sign. Cor. with age, hearing loss and perf. I.Q. |
| Butt Cherist (1968) | Live; without voice items presented up to 3 times; speaker not familiar with deaf education  
"Children's Speech-reading Test": 70 instructions from pictures + materials: 65 items on vocabulary, 5 items on understanding tasks, items on | Answer was either right or wrong | 130 H.I.:  
ages 2-9 years;  
mean 6 years;  
mean I.Q. 93 (range 54-143);  
from 10 schools | Reliability Kuder Richardson: .95  
validity ranking test scores X ranking: .79:  
cor..lip.score x I.Q.: n.s; H.I. subjects sign better than deaf;  
no sign. diff between boys (65) & girls (65); scores increase with age: 4 years. Av. |
<table>
<thead>
<tr>
<th>Author</th>
<th>Method</th>
<th>Description</th>
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<tbody>
<tr>
<td>Myklebus Nyyhus (1970)</td>
<td>Silent film; 1 speaker, familiar with deaf education; items presented twice</td>
<td>&quot;Diagnostic Test of Speech-reading&quot; 64 items, 36 words, 10 stress groups, 18 sentences (3-9 words), language material selected from programmes for the deaf</td>
</tr>
<tr>
<td>Neilson (1970)</td>
<td>Silent Film; length 40 minutes</td>
<td>Scene: 2 adults drinking coffee, 9 sentences are spoken (4-9 words)</td>
</tr>
<tr>
<td>Jeffers Barley (1971)</td>
<td>Live; without voice: 1 speaker; items presented once; speech rate slightly slowed down</td>
<td>2 X 10 sentences from CID sentences: range 9-11 words; list A max 125 words, list B max 117 words</td>
</tr>
<tr>
<td>Johnson (1976)</td>
<td>Film with and without sound 1 speaker</td>
<td>10 lists of CID sentences; each list had 2 Warm-up sentences</td>
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<tr>
<td>Conard (1979)</td>
<td>Live presentation: without voice; 3 teachers of the deaf (no difference in scores)</td>
<td>Revised version of the Donaldson Lip-reading Test; 38 sentences with pictures (6-9 pictures); items no listed</td>
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<tr>
<td>Markides (1980)</td>
<td>Live; no voice one speaker</td>
<td>2 lists of 2 x 32 unrelated words; 2 lists of 25 unrelated sentences, each word selected from sample of 150 monosyllabic C-V-C words; range of sentence length 2-6 words' sentences and words selected on basis of the results with a test group of 120, 6-year-old hearing children</td>
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<tr>
<td>Plant McCrae (1981)</td>
<td>Video; one female speaker no sound</td>
<td>(1) 50 simple questions (3-11 syllables) average 6.6 syllable (2) 20 consonants in C-V form with vowel /a/</td>
</tr>
<tr>
<td>Smaile (1981)</td>
<td>Live by psychologist with sound</td>
<td>List of 25 words + list of 10X18 syllable sentences (Van Uden 1974)</td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Sentences/Analysis</td>
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<tr>
<td>Rosen Corcoran (1982)</td>
<td>Video; one female speech therapist</td>
<td>21X16 sentences from Bench Barnford (1979); everyday sentences selected from expressions of 263 hearing children aged 8-13</td>
</tr>
<tr>
<td>Breeuwer (1984)</td>
<td>Video-colour; no sound; one female speech therapist</td>
<td>20 list of 13 sentences (8-9 syllables from plomp &amp; Minnen (1979))</td>
</tr>
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</table>
3.12 Conclusion

The review of the related literature has thrown much light on the different factors affecting the Hearing-Impaired. It also provides insight to facilitate the design of the study, postulate the casual path model for rehabilitation, analysis of data and interpretation of results.
CHAPTER IV
DESIGN OF THE STUDY
CHAPTER IV

DESIGN OF THE STUDY

4.0 Introduction

4.1 Main objectives of the Study

4.2. Research questions posed

4.3.1 Tools Used

4.3.1.1 Selection of Parameters

4.3.1.2 Construction of the Questionnaire

4.3.1.3 Pilot Study

4.3.1.4 Final Format of the test

4.3.1.5 Reliability of Questionnaire

4.3.1.6 Validation of the Questionnaire

4.3.1.7 Tamil version of the questionnaire

4.3.1.8 Administration and Scoring Procedure

4.3.2 Development of a Test for Hearing Impaired Students to test their ability to Speech Reading

4.3.2.1 Construction of the test for hearing-impaired students

4.3.2.2 Pilot Study

4.3.2.3 Final format of the tool/test

4.3.2.4 Reliability of the Test

4.3.2.5 Validation of the Test

4.3.2.6 Administration and Scoring Procedure
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3.3</td>
<td>Survey to assess the adult hearing-impaired persons</td>
</tr>
<tr>
<td>4.3.3.1</td>
<td>Construction of personal data sheet (questionnaire)</td>
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<tr>
<td>4.3.3.2</td>
<td>Administration of the Questionnaire and Scoring</td>
</tr>
<tr>
<td>4.4</td>
<td>Design for the analysis of data</td>
</tr>
<tr>
<td>4.5</td>
<td>Summary of the Chapter</td>
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</table>