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REHABILITATION COUNCIL OF INDIA

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Dears Readers
It is informed to all readers and subscribers that due to certain technical problems we could not bring out Vol.3, No.1 (January to June 2007) issue that is why we have clubbed two issues Volume 3. No. 1& 2 (January-December 2007).

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From Chairperson's Desk

Information and knowledge dissemination was felt as a need of the hour a few years back, as a result of which the Council initiated the publication of the Journal of the Rehabilitation Council of India (JRCI). This has resulted in creating much needed awareness about issues and challenges faced by persons with disabilities and also the efforts being made by NGOs and GOs to serve them. The present issue contains a number of research based articles providing information on empirical evidence showing different strategies which can be replicated in other areas.

This issue begins with an important topic relating to the most recent effort of the Government to ensure education of all children with disabilities which is envisaged in the 'National Policy on Education (NPE)'. Further, the scenario of education of children with deafness is also brought out objectively in another article in this issue.

Disability, particularly mental retardation, produces a great amount of stress amongst parents of children with mental retardation. This creates hindrance in the effective care of these children by their parents. This has been depicted in an article based on the experience of teachers working in school for these children.

Minimizing the adverse effects of disabling conditions can be ensured by initiating early care and educational programs for children with disabilities. Pre-school education programs are of critical importance for meeting these needs. Research on developing newer and innovative strategies for teaching children with cognitive disabilities is essential for developing and imparting need based education to these children.

Developing functional skills among children with mental retardation is possible to enable them to live independently. Research based experiences find place in this issue. Several other crucial issues also are included such as the relationship between levels of aspiration and educational achievements, importance of teaching/ learning material etc.

I hope the information contained in this issue will help professionals in meeting the educational needs of their pupils more effectively. It will also motivate them to replicate empirically verified methods of teaching children with different disabilities. I take this opportunity to congratulate the contributors of various articles for their significant efforts. I would like to appeal to all rehabilitation professionals to share their experiences by writing for the journal so that these may help their professional colleagues. Last but not the least, I am grateful to the reviewers of the articles included in this issue.

Maj. Gen. (Retd.) Ian Cardozo, AVSM, SM
Chairperson
Rehabilitation Council of India, New Delhi

From Chief Editor's Desk

The Council has been engaged in disseminating research based knowledge to promote, augment and improve the quality of rehabilitation services for persons with disabilities for the last many years. The growing number of readers of RCI publication is a testimony to this. I am immensely pleased to inform you that the Council is in the process of initiating several new activities to achieve the goal of universalization of education for children with special needs and also to achieve the goal of total rehabilitation which is so dear to all work working in this field. One such activity is to provide financial incentives to those who are interested in writing need based books/manuals on any aspect related to the education, training and rehabilitation of persons with disabilities provided that such material contains latest information and is useful to the trainers and trainees of RCI approved courses among others.

Second initiative which is under active consideration is to introduce another journal targeting exclusively the educational aspects like implications of various disabilities in teaching-learning, psycho-social implications, preparing need based teaching-learning material, adaptation and standardization of assessment tools and so on. These initiatives will on one hand encourage young as well as senior experts to documents their experiences and help the trainees to enrich their understanding on the other.

I would like to take this opportunity to appeal to all the readers to make best use of available resources of the Council to improve the quality of lives of persons with disabilities. Any enquiry/suggestion to the Council in this regard to its developmental and enrichment activities would be welcomed so as to benefit the persons with disabilities for whom we are committed to.

Dr. A.K. Sinha
Chief Editor & Member Secretary
Rehabilitation Council of India, New Delhi

Level of Aspiration of Children With Visual Impairment Studying in Exclusive and Integrated Settings

Anjul Sharma*

Abstract

The present study attempts to investigate levels of aspiration of children with visual impairment studying in exclusive and integrated settings. The study was conducted on 100 children with visual impairment (50 studying in exclusive and 50 studying integrated settings). These children were studying from class VI to XII. The children studying in both the settings were selected randomly. The personal data of the concerned visually impaired children were collected in such a way that it matched with each other for relevant variables. It is found that the mean level of aspiration of visually impaired children studying in integrated setting is higher. Significant difference is also found in the mean level of aspiration of the girls and of the boys studying in exclusive and integrated settings. However, the level of aspiration of visually impaired girls vs. boys irrespective of settings is not significant.

Introduction

Aspiration denotes a person's expected level of performance in a given activity. People continuously direct their behavior and strive to perform certain type of activities and to attain certain ends. Each frequently seems to reach activation of excellence and sets the "level of aspiration" for oneself - the standard he/she hopes to attain. This setting of level of aspiration may itself motivate the individual to strive his/her best. Majority of people tends to set the level of aspiration slightly above the previous performance and continues to adjust the level of aspiration as per the successive trials. If they fail they lower it. The greater is the success; stronger is the tendency to raise the level.

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Level of aspiration may be high with strong motivation towards achievement and high hope of success but it can be lower if people fear that they may fail The level of aspiration, which the individual sets for himself, determines his relative success not only in the performance of a given task but also as person. Thus it determines the kind of self-concept one is likely to develop. Aspiration is the level of future performance in a similar task, which an individual knowing his level of performance in that task explicitly undertakes to reach.

Rationale

The 1991 census report indicates that the number of visually impaired people in India was 12 million. The number of visually impaired children for whom some form of special education services are needed, is estimated to about 5 lakh (excluding the old age blindness). At present the number of visually impaired receiving some form of special education is 25 thousand. Thus no more than 5 % of the total number of children with visually impairment has access to educational services. The hallmark of NPE (1996) "Education of All" will remain incomplete unless, attention is being paid on the betterment of this minority section of society. Along with several external factors which play role in determining the academic success or failure of a child, there exist some factors which are more internal in nature. The level of aspiration is one of such significant factors that has the potential to raise the child above all the external barriers. Therefore the level of aspiration needs to be studied.

Objectives of the study

To compare the level of aspiration of visually impaired (VI) children studying in exclusive and integrated settings matched on age, sex, level of education and I.Q.

Sub objective :

To compare the level of aspiration of :

i) Visually impaired girls studying in two different settings;

ii) Visually impaired boys studying in two different settings;

iii) Visually impaired girls and boys studying in exclusive setting;

iv) Visually impaired girls vs. boys studying in integrated setting;

v) Visually impaired girls vs. boys irrespective of settings.

Hypothesis

To achieve the aforesaid objective of the present study the following null hypotheses were formulated:

There is no significant difference in level of aspiration of visually impaired children studying in exclusive and studying integrated settings.

Sub hypotheses

i) There is no significant difference in level of aspiration of visually impaired girls studying in different settings.

ii) There is no significant difference in level of aspiration of visually impaired boys studying in different settings.

iii) There is no significant difference in level of aspiration of visually impaired girls and boys studying in exclusive settings.

iv) There is no significant difference in level of aspiration of visually impaired girls and boys studying in integrated settings.

v) There is no significant difference in level of aspiration of visually impaired girls and boys irrespective of settings.

Subject profile

Sample of the study consists of 100 visually impaired of which 50 study in exclusive and 50 study in integrated setting. The children are from class VI to XII enrolled in exclusive and integrated programs in the National Capital Territory of Delhi.

Matching

The subjects of both the settings are matched for age, sex, level of education and verbal I.Q. These variables are considered relevant since one or more of these could influence the level of aspiration of the subjects. To match the subjects on verbal I.Q, different categories of I.Q viz. very superior, average etc have been adopted since the matching of subjects on individual score was not possible.

Sampling Technique

The visually impaired children studying in exclusive and integrated setting are selected randomly. The pattern random sampling technique was adopted which guarantee a uniform expectation and chance of being chosen. Level of aspiration test by Dr. V.P. Bhargava is used.

Procedure: After building rapport the questionnaire was administered on both the groups.

Analysis

The data collected was analyzed using t-test. The mean scores of visually impaired children were compared on

Table1: **Mean Scores of Level of Aspiration in Different Settings**

Educational setting	N	Mean	SD	t-value
Exclusive	50	104.0	28.26	3.958*
Integrated	50	126.0	27.3	

Table 2: **Mean Scores of Level of Aspiration of Girls in Different Settings**

Educational setting	N	Mean	SD	t-value
Exclusive	25	99.16	24.03	3.99*
Integrated	25	123.52	30.44	

Table 3: **Mean Scores Level of Aspiration of Boys in Different Setting.**

Educational setting	N	Mean	SD	t-value
Exclusive	25	108.9	31.68	3.62*
Integrated	25	129.6	24.09	

t-values * : Significant at .01 level.

Table 4: **Mean Scores of Level Aspiration of Girls and Boys in Exclusive Settings**

Subjects	N	Mean	SD	t-value
Girls	25	99.16	24.03	1.22
Boys	25	108.9	31.68	

Table 5: **Mean Scores of Level of Aspiration of Girls and Boys in Integrated Setting**

Subjects	N	Mean	SD	t-value
Girls	25	123.52	30.44	0.79
Boys	25	129.60	24.09	

***Table 6:* Mean Scores of Level of Aspiration of Girls and Boys Irrespective of Settings**

Educational setting	N	Mean	SD	t-value
GirlsExclusive + Integrated	50	111.6	29.8	1.55
BoysIntegrated+Exclusive	50	120.0	27.6	

Table1 presents the t-value for significance of difference between mean scores of level of aspiration of visually impaired in exclusive and integrated setting. The difference between the mean scores obtained in two settings under study is highly significant as the t-ratio is 3.958. The hypothesis that there is no significant difference in the Level of Aspiration of Visually Impaired in exclusive and integrated setting is not accepted.

Table 2 shows that the difference in level of aspiration of visually impaired girls in exclusive and integrated setting is significant at .01 levels. The hypothesis that there is no significant difference in the level of aspiration of visually impaired girls in exclusive and integrated setting is not accepted.

It is clear from the ***table3*** that the difference between mean values of level of aspiration of visually impaired boys in exclusive and integrated settings is significant (level of significance = .01). It means that the mean level of aspiration of VI boys is more in integrated setting than in exclusive setting.

Table 4 shows that the difference between the mean of level of aspiration of visually impaired girls and boys in exclusive setting is statistically insignificant.

Table 5 shows that the difference between the mean of the level of aspiration of visually impaired girls and boys in integrated setting is statistically insignificant.

Table 6 depicts the mean value of level of aspiration of visually impaired girls vs. boys when the two settings were combined are 111.6 and 120.0 respectively. It is found that level of aspiration of VI irrespective of setting is not significantly different.

Findings

1. The mean level of aspiration of visually impaired in exclusive and integrated setting is significantly different.
2. No statistically significant difference is found in the mean level of aspiration of girls in exclusive and integrated setting.
3. There is no significant difference in the mean level of aspiration of boys in exclusive and integrated setting.

4. There is no statistical difference in the mean level of aspiration of visually impaired girls and boys studying in exclusive setting.
5. No statistically significant difference is found in the mean level of aspiration of boys and girls in integrated setting.
6. The difference between the mean levels of aspiration of visually impaired girls vs. boys irrespective of setting is not significant.

Discussion

There are only few studies, which are directly related to the present study. However, studies on related aspects such as self-concept, self-esteem, occupational aspiration, self-acceptance, assertiveness and submissiveness are sited in the recent literature.

In the present investigation significant difference is found in the level of aspiration of visually impaired studying in integrated and exclusive setting. Although the present study did not compare the performance of visually impaired students with that of their non impaired counterparts. However, the study carried out by Rotter (1944) has some relevance in the context of present study. He found that handicapped group had lower levels of aspiration even though the task given was totally unrelated to its handicap. Similarly Mc Andrew (1948) compares the level of aspiration in the group of blind and sighted children and found no striking difference between the two groups. If one's self-concept is high and positive and if there is desired balance between his internal and external self-concept he would approach a given task positively. He will aspire for greater amount of success. Therefore the study of Jervis is relevant for worth mentioning here. He found no significant difference in self-concept between blind and sighted subjects. The blind subjects expressed concern or uncertainty about their future while most of the sighted subjects were quite positive about their future. Similarly self-esteem is another aspect which is related to ones approach to the given task or his or her level of aspiration.

Cochern (1983) looked in to relationship between the status of career aspiration and strength of career orientation of a selected group of XII graders through a specially developed 20 items semantic and differential carrier orientation inventory. It was found that students with higher status professional's aspirations had stronger career orientation than those with lower status aspiration.

Singh and Kumar (1981) had undertaken a comparative study of expectations, aspiration and intelligence among undergraduate students. He concluded that male and female did not differ in intelligence and female had slightly greater aspiration than males. Khan (1985) a comparative study on educational aspiration and occupational expectation of children without eyesight

and with eyesight. Results of the study revealed that blind were comparatively low educationally aspirant. Moreover, it was found that there was high correlation between the occupational expectation of blind and type of training, which was imparted in their schools.

Pandya and Solanki (1975) examined the effect of increased level of aspiration on academic achievement of sighted girls. They concluded that increases level of aspiration results in significant increase in academic achievement and that effect of interaction between intelligence and level of aspiration quite insignificant.

Implications of the Study

Blindness has been regarded as major hurdle in ones economic rehabilitation. Due to the uncertainty about their future the blind people become frustrated. As they grow older the frustration results into passivity and lower level of aspiration. This could be overcome by adequate vocational guidance and counseling.

Vocational courses as per the need of the visually impaired students keeping in view their visual status will also help them in assuring them about their future which might lead to improving their level of aspiration and once they begin to aspire and more would their success rate and if needed support is made available thus the present study has two major implications first planners and policy makers responsible for designing educational programs for the visually impaired must keep in mind the role of technology in improving educational performance of these students. Secondly VI students must make earnest efforts to equip themselves with the technique of using modern technologies, which will enable them to be independent.

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With a little bit of help – An early language training kit

Prathibha Karanth*

Abstract

Clinicians in the field of communication disorders in India have for long struggled with a lack of suitable clinical material both for testing and intervention. Our dependence on western material continues unabated despite their being unsuitable due to cultural considerations and their high costs. Consequently most clinicians make do without adequate therapeutic/ suitable material or expend their precious time, which would otherwise be expended in constructive therapeutic work, in preparing basic material. This paper presents the results of a coordinated effort to develop suitable and affordable materials for early language training that can be used across India. The material that was developed with input from practicing clinicians from the specialities of speech-language pathology, linguistics, clinical psychology and special education was field tested in ten different states in ten different Indian languages, edited subsequently and finally compiled in the form of a kit with a manual of instructions.

Introduction

Rehabilitators, special educators and educators conventionally depend on teaching aids in the practice of their profession. In countries where these disciplines have existed and been supported, over a period of time there is easy access to a plethora of ready to use evaluation and educational material. In India we have been plagued by the problem of restricted access to the very limited indigenous material and are forced to spend considerable time and effort in putting together material that is necessary for our day-to-day work. Rehabilitators are seldom conversant with the formal aspects of language and

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it's teaching despite being fluent speakers themselves. It is therefore important for them to have easy access to language training material that has been prepared by experts and is adequately comprehensive.

The early language training material described here was developed to meet the need for indigenous training material, to serve as core teaching material in 10 Indian languages being spoken across the country at an affordable price. The material has been designed as an aid for rehabilitators and educators involved in teaching language to the communicatively disabled such as the hearing impaired, the mentally retarded, the language –learning disabled and other communicatively disabled populations. The material can be used within a wide array of approaches to language therapy ranging from programmed instruction to stimulatory methods. It is flexible enough to be used within a variety of therapeutic approaches and techniques, depending on the theoretical outlook of the clinician and her choice. It is a ready source of material covering myriad aspects of language using pictures that are simple line drawings developed in order to meet the requirements of both the typically developing and the disabled, rural and urban, populations.

Since training in phonology is comparatively better established in India, the focus here has been on semantics and syntax. The areas covered under semantics are lexical categories, polar questions, paradigmatic relations, syntagmatic relations, semantic similarity and contiguity, semantic anomaly and antonyms. Those covered under syntax include plurals, tenses, person number and gender markers, transitive, intransitives and causatives, affirmatives, negatives, and interrogatives, comparatives, conditionals, conjunctives, quotatives and participial constructions.

Ideally prior to training the child should be evaluated on a tool such as the Linguistic Profile Test (Karanth, 1984) by a speech-language pathologist. Where this is not possible the child's linguistic abilities can be observed in everyday life situations and compared with peers.

Aim

To develop an exhaustive yet simple training kit for early language acquisition, in ten Indian languages, for children with communication disorders, that is culturally suitable to the Indian context, both urban and rural and can be used across India

Method

During the latter half of the twentieth century with the emergence and growth of psycholinguistics, the practice of speech-language pathology came under the considerable influence of linguistics. The practice of speech therapy,

until then largely restricted to articulatory phonetics and vocabulary building expanded to include training in syntax, semantics and pragmatics. Essentially the move was from a restricted focus on speech sound production to the inclusion of the complex aspects of language such as the rules that govern sentence structures; word meanings and their inter relationships both within themselves and with reference to external objects and events; the use of language in social contexts, in the narration of events and the exchange of information.

In the West this led to the production of a spate of assessment procedures and aids for clinical training in the various aspects of language (Crystal, Fletcher & Garman, 1989, Semel & Wiig, 2000). In India there has scarcely been any work on these lines. Indian clinicians have had to depend on western tools, which are both linguistically and culturally inappropriate not to mention the expense. In addition, evaluation tools and training material developed for a specific language cannot be directly translated into a language that is structurally different from the original as is the case with Indian languages vis a vis English. The numerous languages spoken in this country and the lack of explicit knowledge of their linguistic structures, on the part of our clinicians and trainers have further compounded the problem.

It was within this background that the current project to develop language-training materials at the different linguistic levels in 10 Indian languages was undertaken. Given that most of the Indian languages belong to either the Indo –Aryan or Dravidian family it was decided to simultaneously develop the language training aids in a few major languages from both groups to economise on time, personnel and finance. The languages short listed on the basis of expertise available were Assamese, Bengali, Hindi, Kannada, Malayalam, Marathi, Oriya, Tamil, Telugu and Urdu.

The language training material was developed in three phases. In Phase I a workshop was conducted to prepare the material within the framework of the Linguistic Profile Test (LPT, Karanth 1984). Twenty three professionals drawn from the disciplines of Speech-Language Pathology, Special Education, Linguistics, Psychology and Education, with expertise in language testing/training and material production, participated. These professionals also represented the many languages in which the teaching aids were proposed to be developed. Within the framework provided by the LPT items for each of the subsections in the Semantics and Syntax sections were listed with an approximate ratio of 1:10; that is for each item listed in the LPT we listed about 10 variants. The criteria for item selection were that it should be a common one that is found in everyday usage and should be unambiguously picturable in a line

drawing. During this workshop a total of approximately 600 unambiguously picturable linguistic items in each of the 10 languages was compiled.

In Phase II the material prepared in the 10 languages was compiled in a master chart listing items common to all 10 languages. Some items such as those for morphophonemic changes were found to be numerous in languages like Kannada and Tamil but not so for some of the other languages and therefore these were dropped from the master list. Similarly items for synonyms and homonyms were also found to be highly language- specific and were therefore omitted from the common list. The master chart comprising about 850 stimuli was vetted by linguists for comprehensiveness. These items, common to all 10 languages, were then illustrated in black and white, line drawings. A manual of instructions was also compiled and translated into the 10 languages.

This material was then field tested in different parts of the country. A detailed set of instructions was given to the field testers who were postgraduate students of Speech-Language Pathology, Psychology, and Linguistics. The field tests were carried out on 100 children in the age range of 3-13 years, 20 children with language difficulties and 20 adults (10 literate and 10 non literate) for each of the 10 languages. The field-testing was coordinated and supervised by the 10 expert participants of the first workshop, who remained actively involved in the project, through out its duration. Since the field testing in Assamese was not possible, it was dropped from the final list of 10 languages and was replaced by English in which we had developed the original list as English is widely used in urban India.

In Phase II a second workshop was held wherein the feedback from the field testers was reviewed and the master list edited to exclude all items that were found to be ambiguous and/or inappropriate during field-testing. For example, the picture for the item "she is washing the clothes" showed a woman in an upright position beating the clothes on a stone placed 2-3 feet above the ground as is commonly done in South India. This picture was found inappropriate during field testing in the northern parts of the country where it is more common to squat on the floor and beat the clothes on the floor with a piece of wood. Several pictures had to be redrawn. A final set of 664 illustrations was accepted by all coordinators.

The manual of instructions was also revised on the basis of the feedback received.

Specific instructions for each subunit are given along with illustrations of how the material could be used. Each structure has been replicated several times to provide the learner varied experience in which to try his/her new skills. These are not prescriptive and the trainer is encouraged to use her

imagination in extending the use of these materials.

The section on semantics begins with sets of common items from everyday experiences of children such as animals, clothes, vehicles, fruits and flowers. These are intended to help build a basic vocabulary for the young child. When the child learns to use these words he learns not only to name them but also to acquire knowledge about the objects that they represent. When the child has varied experiences with these words he forms links between them and other words, thus building up both linguistic skills and cognitive knowledge. Semantic training therefore is not merely training in vocabulary but also sensitisation to the numerous relationships between words. There are several aspects to semantic training such as lexical discrimination, vocabulary building, categorisation and selection. In addition there are complex relationships between words such as antonymy, paradigmatic and syntagmatic relations, semantic similarity and contiguity and semantic anomaly. Several of these important aspects of word meaning and their relatedness, which contribute to the richness of the concerned languages, are introduced in the semantic section. The language training activities range from matching, discrimination, identification, association, simple questions, multiple choice tasks, to fill in and sentence completion tasks.

Subsections for syntactic structures include plurals, affirmatives, negatives, interrogatives, causatives, conditionals, conjunctives, quotatives and participial constructions. Facilitation of syntactic structures can begin with the introduction of common verbs such as 'eat', 'drink' 'sleep' 'walk and 'run'. With the use of the language teaching aids the child can be introduced to the marking of these verbs and others for plurality, tense, person, number and gender. The more complex structures of causatives, conditionals, quotatives and participial are to be introduced when the child has a sufficient degree of mastery over basic syntax. Efforts should be made to ensure that all language training should be as contextual and conversational as possible.

The choice of items for training should begin at the functional level of the child and moved up in a hierarchical manner. Both semantic and syntactic skills should be taught in parallel and be integrated and generalised across everyday speaking situations.

Finally, it must be remembered that these items are by no means comprehensive and it is recommended that the user go beyond the manual to both expand examples and other structures not covered by us and relate it to the environment of the child so as to stimulate his overall language development. The kit is mainly a guide with clear examples. These materials can and should be adapted to train at other levels such as pragmatics and discourse too.

Results

The end result of the project is an early language training kit consisting of manual and 664 pictures in 10 Indian languages that can be used across India. These materials can be used not only by Slips but also all others concerned with children having difficulties in learning language such as parents, educators, special educators, psychologists and linguists. Since the completion of the project efforts were made by us to get the material published so as to make them easily available for potential users. Regrettably most commercial publishers are uninterested in publications such as these since they do not visualize a market for them. We were however able to convince Books for Change, Bangalore with support from Action Aid to publish the English manual with the kit in the year 2000. Since its first publication the material has gradually gained an audience with excellent feedback and is now in its third print. Subsequently the Kannada version of the manual has also been published and is now available. We are awaiting publication of the manuals in the remaining eight Indian languages that is Bengali, Hindi, Malayalam, Marathi, Oriya, Tamil, Telugu and Urdu.

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Discrete Trial Teaching and Development of Pre-Learning Skills in Intellectually Impaired Children with Autism

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Shiante Lobo*

Abstract

The purpose of this experimental research was to determine the effect of Discrete Trial Teaching on the development of pre-learning skills in autistic children with mental retardation. A sample of 20 children from Mumbai was randomly selected for the study. Subjects were randomly assigned to experimental and control group and tested on pre-learning skills prior to intervention. Discrete Trial Teaching method was used to train the experimental group on pre-learning skills. Intervention consisted of 15 individual sessions of 30 minutes each. At the end of the intervention period, the children in both experimental and control groups were post tested. The findings suggest that Discrete Trial Teaching has a positive effect on development of pre-learning skills. Children in the experimental group showed significant improvement in pre-learning skills from pre to post-test.

Introduction

Autism is a developmental disorder that affects a child's perception of the world and how the child learns from his or her experiences. Even among the most complex disabilities, autism remains an enigma.

Autism is the frequently occurring form of a group of disorders known as Autism Spectrum Disorders (ASD). It has been defined as a severely

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incapacitating life-long developmental disability that typically appears during the first three years of life. It is the result of a neurological disorder that affects the functioning of the brain (Autism Society of America, 2006).

Autism affects essential human behaviors such as social interaction, ability to communicate ideas and feelings, imagination, and establishment of relationships with others (National Research Council, 2002). Children with autism may also show abnormal responses to sensory stimuli, such as touch, sounds, and sights.

Mental retardation is a commonly occurring co-morbid condition with autism. Nearly 80% of people with autism have some degree of mental retardation. Mental retardation is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social and practical adaptive skills. The disability originates before age 18 (American Association of Mental Retardation 2002).

Mental retardation is characterized by deficits in attention, memory, concrete orientation, abstract thinking and imagination. Children with mental retardation have difficulty in generalization of skills into a new setting. As cognition plays an important role in language development in children with mental retardation, the overall language development is retarded (Chengappa et al 2002). In addition, they are unable to pick up social cues, and therefore do not readily adapt to demands of social situations. On the whole, the overall potential of such children may be lower than that of their age peers.

Stereotype movements and self-stimulating behaviors such as rocking, hand flapping, spinning, light filtering, and other forms of self-injurious behaviors are common among children with autism (Simpson & Myles 1998, Lal 2005). The severity of such behaviors increases when autism is accompanied by mental retardation (Grados & McCarthy 2000).

Research has shown that these characteristics and features in autistic children affect their development of such skills as giving eye contact, joint attention, imitation, matching, symbol use and play (Dawson, et al.,1990, Kesari, et al.,1990, Sigman & Ruskin,1999). A child must acquire these prior to learning any task. Autistic children with intellectual impairment need help to develop these pre-learning skills.

Eye contact is an important behavior because it enables the child to look at to the interacting partner, and not stay withdrawn in his/her own world (Charlop & Kelso, 1996). Imitation of others' behavior does much to enhance the overall social and intellectual development of the child (Siegel 1996). Ability to detect similarities among diverse situations can help provide regularity in a child's behavior (Lovaas & Smith1988). Hence, it is essential for a child to

learn to match.

Development of play skills is important for social development and peer interaction in children with autism (Nadel & Peze, 1993). Understanding and use of linguistic symbols enables a child to follow the behaviors or actions by responding to requests appropriately (Goldstein,1999).

Studies show that children with autism respond well to a highly stuctured educational program tailored to their specific needs. The severe challenges that some of them face is best addressed by systematic educational program that follows the behavioral approach, and implemented in one to one or small group sessions (Dorman & Winfield, 2000).

One program that provides structured, one to one intervention is Discrete Trial Teaching (henceforth, DTT). The DTT is based on the principles of Applied Behavioral Analysis (ABA). Derived from Skinner's operant behavior theory, ABA has been used in educational settings to increase the repertoire of behavior through reinforcers in children. It includes a range of techniques to increase desired behaviors and reduces inappropriate behaviors. ABA is an accepted approach to intervention with a strong empirical evidence (Simpson & Myles, 1998).

A program based on the work of Ivar Lovaas, DTT is a specific and systematic method of the ABA. It is used in one to one situation. The learning task is broken into small steps and the child is prompted to respond to each step correctly. Trials are repeated with gradual fading of prompts as task is learned. DTT has been widely used for teaching compliance, receptive and expressive language and play skills to children with autism (Siegel, 1996). As the discrete trial procedure is repeated the child develops the process for learning, establishes communication skills, learns to interact with trainer and gains basic life and academic skills (Donnelly, 1996).

Objectives

The objectives of the study are to:

- determine the effectiveness of DTT on development of pre-learning skills in children with autism;
- compare the effectiveness of DTT with that of existing classroom practices for development of pre-learning skills in children with autism.

Method

The study was conducted in Mumbai. Intellectually impaired children with autism from two school and a clinic participated in the study. The children were within the age group of 3-10 years.

Design

The study employed the pretest-posttest equivalent group design. This design requires two equivalent groups, which are pretested on variable of interest. One group receives treatment followed by posttest to both groups. Test scores of both groups are compared and analyzed statistically.

Subjects

A total of 52 intellectually impaired children with autistic features were identified from the institutional records. Out of these 38 were between the ages of 3 and 10 years. Only 30 children met the criteria for autism as per DSM-IV. A final sample (N=20) from this group was randomly selected and was assigned as experimental and control groups. Thus both the groups had 10 subjects each.

Material

Measurement Scale for Pre-learning Skills (MSPLS) was developed by the authors to determine the acquisition of readiness skills for learning. The MSPLS consisted of seven parts: (i) attending skill (ii) imitation skill (iii) matching skill (iv) receptive and expressive language skill (v) appropriate play skill (vi) receptive action labeling and (vii) expressive action labeling. Each part had three items intended to assess the existence of relevant pre-learning behaviors. A child's responses were recorded on a four point scale of correct response, response with verbal prompt, response with gestural prompt, and response with physical prompt. MSPLS was designed for individual administration to each child, and used as a measurement tool prior to and post intervention in the study.

Procedure

The final sample (N=20) of children was randomly assigned to experimental and control groups so that each consisted of 10 children. MSPLS was administered to children in both groups. Though the selection of sample was random, mean scores generated by each group were compared statistically to establish parity between groups ($t=0.06$, $p>.05$) prior to intervention. The children in the experimental group participated in the intervention program aimed to develop pre-learning skills. The program used the DTT method (Lovaas 1981). Fifteen structured sessions were received by each child. Each session was of 30 minutes.

The skills were taught using the following steps of the DTT :

1. Provide instruction (Antecedent-Discriminative Stimulus-SD)
2. Provide 3-5 seconds for a response (Behavior)
3. Give prompts if correct response is not emitted.

4. Follow a hierarchy of verbal, gestural and physical prompts
5. Reward the response (Consequence).

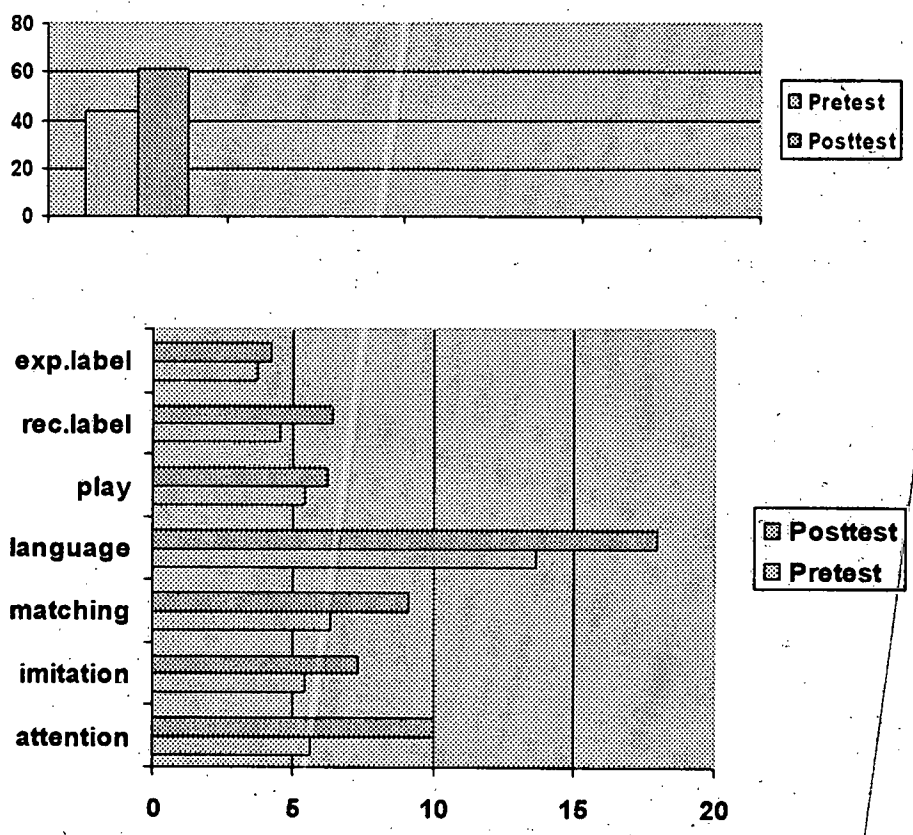
A child was given 5 trials for each skill taught during an intervention session. While the experimental group received this treatment, children in the control group continued with their existing training program. At the end of the treatment period, MSPLS was administered to all to determine the acquisition of pre-learning skills.

Results

Performance of the experimental group

The research aimed to study the effectiveness of DTT method on development of pre-learning skills in intellectually impaired children with autism. Hence the mean scores of the experimental group on MSPLS at pre and posttests were compared statistically. The significant t-value (4.79, $p<0.001$) indicated that children had benefitted substantially from the treatment (refer to Figure A)

FigureA: performance of experimental group



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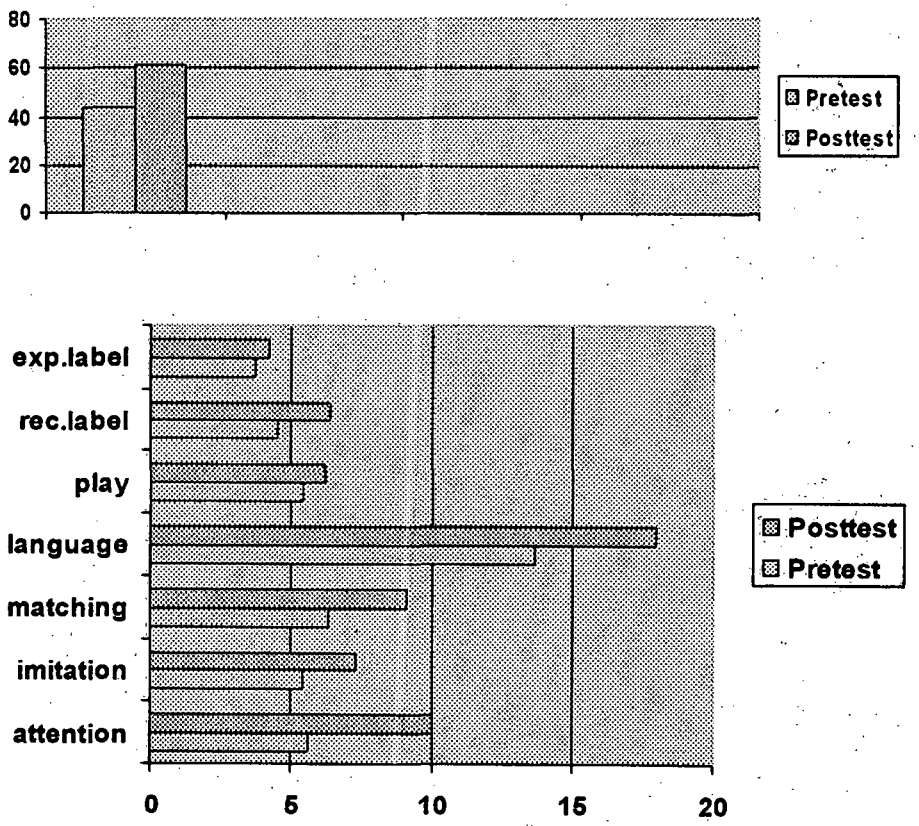

use of planned teaching opportunities organised around relatively brief periods of time (about15-30 minutes), and sufficient amount of adult attention in one to one or very small group intervention helps in meeting the individual education goals (National Research Council, 2002).

A curriculum for intellectually impaired children with autism should prepare them to (i) attend to elements in the environment that are essential for learning (ii) imitate others (iii) comprehend and use language (iv) play with toys, and (v) interact socially. Use of structured teaching environment and generalization strategies enhance learning in such children (Dawson & Osterling, 1997).

Prompts can be helpful when teaching new task to children with autism. Such children learn more effectively when they accurately complete a task because successful task completion shows them precisely what to do and how to do it (Mesibov 2003). The pre learning skills (selected for study in this research) are also known as 'pivotal behaviors' (Koegel et al 1999; Pierce & Schreibman 1995) because their acquisition allows a child to learn many other skills. Research indicates that pivotal behaviors such as attention, symbolic play, and receptive language etc. are predictors of long-term outcome (Sigman and Ruskin1999). If interventions succeed in improving these key behaviors more general improvement will occur as well (Kesari, 2000).

In this study a significant improvement in pre-learning skills was observed from pre to post treatment stage. Discrete Trial Teaching method is structured and systematic. It is founded on the principles of applied behavioral analysis and recommends use of prompts and reinforcers. As such its elements address the learning needs of children with autism. The significant difference in mean scores of experimental group children may be attributed to the effectiveness of Discrete Trial as a teaching method.

The DTT as used in the study was derived from the Lovaas Method of Discrete Trial Teaching. Lovaas recommends an intervention of 40 hours a week for a period of two years (Lovaas & Smith 1988) in order to teach pivotal behaviors. In this research the treatment was administered over a period of 8 weeks. When compared with control group's performance at posttest, that of the experimental group was better but the difference was not statistically significant. However, that the mean score of children in the experimental group on each sub unit of the pre learning skills was higher than that of control group children indicates that Discrete Trial Teaching is a suitable method of intervention for intellectually impaired children with autism, and that a longer duration of treatment could have shown a significant difference between the two groups.

Conclusion

The results of this study suggest DTT to be an effective method for developing learning readiness skills in children with autism and intellectual impairment. The treatment group children showed a significant enhancement in readiness skills. Autism intervention is a relatively new field in India. Within the professionals, understanding the nature and needs of children with autism is a fairly recent phenomenon. However, much has evolved where there was nothing a decade ago. While significant conclusions are drawn from this study, further researches are required in order to support and generalize the results across environments and regions in India.

Acknowledgement

The authors wish to thank the administrators of the educational institutes for permitting this study to take place in their settings. Special thanks to the children who participated in the study.

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Impact of Individualized Educational Programme for Improving Functional Skills of Children with Mental Retardation

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Abstract

The present study is an attempt to study the impact of Individualized Educational Programme for improving functional skills of children with mild and moderate mental retardation.. It is a multiple case study wherein 4 cases are studied using Pre-test and post-test design. At the stage of pre-test, functional skill areas viz. motor skills, activities of daily living, language skills, reading, writing, number, time, domestic, social skills, pre-vocational and money skills of each mentally retarded child were assessed with the help of 'Behavioural Assessment Scale for Indian Children with Mental Retardation' (BASIC-MR). Based on that assessment in each skill area, a systematic Individualized Educational Programme was developed for each child and implemented for three months. At the stage of post-test, each functional skill area was again evaluated and recorded in BASIC-MR. The parents of the subjects were also guided to follow the educational programme at home to improve the skill behaviour of their wards appropriately in time. They were encouraged to discuss the progress of their children once a week. It was found that Individualized Educational Programme in functional skill areas, if initiated and followed up on regular basis, can improve the skills of the child effectively.

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Introduction

When we listen the word 'disability', our mind thinks of something which limits someone's ability to perform certain tasks e.g. to see, to read, to work, etc. in the same way that most persons do. There are various types of disability found in persons. Some children have deficiency in academic, social and self-care skills due to mental retardation. They have difficulty coping up with their physical, social and emotional needs. They reflect slow reactions, absence of clarity, inability to learn fast, inability to understand, inability to remember, lack of coordination and delay in development. Such symptoms clearly show that these children have some retardation and are very slow in learning functional skills. Obviously in these situations, the concerned children require special services and educational programming to perform even their personal activities. This shows that the disability of the mental retardation poses greater challenges to the exceptional person than any other type of disabilities. Thus mental retardation is one challenging disability among the categories of children with disabilities.

Mentally retarded children may pose a big problem for all concerned. Presence of such a child in the family leads to less satisfactory mental life, less social support, marital disharmony and negative attitude among the family members (Friedrich and Friedrich, 1981; Shtiag and Kamal, 1981). The presence of mentally retarded child in the family needs a lot of adjustment on the part of parents and the other family members. The responsibilities associated with the care of the children with mental retardation may impact the parent's psychological, physical and financial well being over a period of time. (Seligman and Meyerson, 1982; Ventura and Boxx, 1983; Gallagher et al., 1983; Quine and Paul, 1985). One of the ways to relieve parents from the stress is to develop functional skills in the child so that he/she manages the routine activities independently.

Functional skills refer to the activities of daily living that are required for leading independent life in the society. These skills include motor skills, activities of daily living, language, reading, writing, daily skills like number, time and money. These also include domestic, social and pre-vocational skills. These have applicability and utility in day to day life. These skills prepare a person with mental retardation to interact with people efficiently in the family and community. It leads to personal adequacy, social competency and economic independence. These functional skills of the children with mental retardation may be improved by providing them special education which consists of specially designed instructions to meet the unique needs of exceptional children through special methods, techniques, resources and facilities. These specially designed instructions are called Individualized Educational Programmme (IEP).

Individualized Educational Programmme refers to a document, written by a team of professionals and parents to provide student with handicap an appropriate intervention. The purpose of a well planned Individualized Educational Programmme is to provide an appropriate education to every child with mental retardation to improve their functional skills. Matson (1981) carried out a study on 20 mildly mentally retarded persons on use of independent training to teach shopping behaviour in a natural environment to develop social skills. The behaviour taught was generalized by the mentally retarded persons. The study showed that the children with mental retardation could learn complex community adaptation skill if they are trained. Fleming (1987) conducted a study to find the effectiveness of individualized programme planning on a sample of 85 mentally retarded persons. The skills and training needs of each individual were taken. A detailed management plan was set up by fixing goals according to their priorities. Evaluation showed that, just fewer than half the goals were successfully achieved, while a little more practice was needed in the time allotted in the case of the rest. It was also found that this situation could have been improved if the staff had better confidence in their work, and if the adults had played their roles in an active way. Snell (1988) recommended curriculum and methodology for individuals with disabilities. The concrete application of methods applicable for each individual's needs could enhance the communication abilities in the mentally retarded children. Desai (1988) recommended the need of individualized instruction in school and listed out the efficiency of individualized instructions. He also emphasized the importance of planning individualized instructions. Jain (2007) studied to find the effect of individualized training programme on personal, social, academic and occupational skills in mild mentally handicapped children. Her study revealed that implementation of individualized training programme in case of these children is very beneficial in enabling them to improve their personal, social, academic and occupational skills at their own pace.

The challenge presented by retardation is of a development nature. The services or the educational programme devised for the retarded must aim to assist each individual to learn to develop his abilities to the full in order to reduce dependency and increase competency. All these factors and facilitating conditions motivate the investigators to study the impact of individualized educational programme for improving functional skills of children with mental retardation.

Objective

To evaluate the effectiveness of the Individualized Educational Programmme for improving functional skills (motor skills, activities of daily

living, language, reading, writing, number, time, social, pre-vocational and money skills) in mentally retarded children.

Methodology

Design

This study is a multiple case study wherein pre- test and post- test results are compared.

Subjects

The study was conducted on a sample of 4 mentally retarded children (2 children with mild retardation and 2 children with moderate retardation) of the age group of 10 to 13 years on roll in a special institute for mentally handicapped children in Haryana.

Tools used

The tools employed in the present study were as follows:

1. Behavioural Assessment Scale for Indian Children with Mental Retardation (BASIC-MR)-NIMH, Secunderabad.
2. Individualized Educational Programme developed by the investigators themselves.

Procedure of the Study

The study was conducted in three phases. In the first phase, functional skills in mentally retarded children were assessed with the help of Behavioural Assessment Scale for Indian Children with Mental Retardation (BASIC-MR). This was followed by Phase 2 which involved systematic development and implementation of an Individualized Educational Programme from each skill area on each child for 3 months. The number of activities from the respective areas depended upon the level of the subjects and willingness of the parents. The parents of the subjects were also guided to follow the educational programme at home to improve the skill behaviour of their wards appropriately in time. They were encouraged to discuss about the progress of their wards, once in a week. At the end of training period, the assessment tool was again used to evaluate the progress made in various functional skill areas and the scores in the assessment tool were recorded to find out the effectiveness of the individualized training.

Results

The results of the case studies of four subjects are being explained below in Tables 1-4. Graphical representations of the said results are also given in Fig. 1 to 4.

Case-1

Parul (real name is not used for the obvious reasons of confidentiality), an eleven year old girl, belongs to a family where her parents are well educated. Her father has a small shop. She has deficiencies in all the functional skill areas. At the pre-test stage, she was assessed with the help of BASIC –MR. It was found that she was unable to: skip the rope, apply powder on her face, keep herself clean, understand traffic signals, express her needs, write her name and address, read words, symbols, signboards and numerical symbols, recognize values of money and their functional use. After the training period of three months, it was evaluated that she started skipping with alternate feet. She could keep herself clean, write her name and her parents' as well as brother's name, read five words of common fruits, count objects up to ten. She started taking interest in counting and packing of female items i.e., bindies, hair clips, ribbons, rubber bands, bangles etc. She could copy her address, recognize left and right sign boards, recognize and purchase the objects of one rupee, two rupees and 50 paisa. Parents' co-operation improved her self confidence during the training period and they were fully satisfied with her progress. Table-1 and Figure-1 shows pre-test, post-test and gain scores in all the skill areas of the said case.

Name : Parul

Sex : Female

Age : 11 years

Training period : 6 months

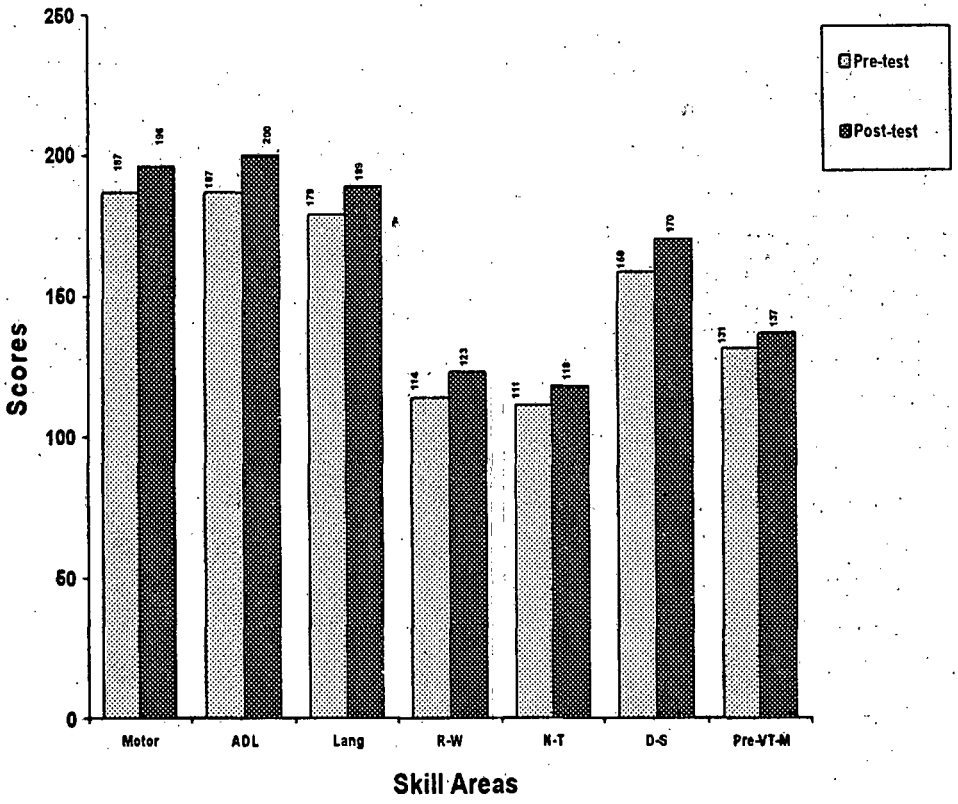
IQ : 60

Table # 1: Gain Scores of Parul

Skill Areas	Pre-Test Scores	Post-Test Scores	Gain Scores
Motor Skills	187	196	09
Activities of Daily Living	187	200	13
Language Skills	179	189	10
Reading-Writing	114	123	09
Number-Time	111	118	07
Domestic-Social	158	170	12
Pre-Vocational-Money	131	137	06

Figure-1

Pre-test, Post-test Scores and Gain Scores in Functional Skill Areas of Case-1



Note:	ADL	:	Activities of Daily Living
	Lang	:	Language
	R-W	:	Reading & Writing
	N-T	:	Number & Time
	D-S	:	Domestic & Social
	Pre-VT-M	:	Pre-Vocational & Money

Case-2

Rajiv (real name is not used for the obvious reasons of confidentiality), son of a labourer belongs to a lower income group family. He has two elder brothers, they are also labourers. During assessment, it was found that, he has deficiencies in academic skills and fine motor skills. He could not: thread the medium size needles, tie bow knot of his shoes, read common words, write his own address, recognize time in wall clock, solve sums of addition, prepare tea and iron clothes. He stammered while using two letters (/r/ and

/l/). His mother wanted to develop these skills in him. During training, the help of his mother was also taken in following the same procedure of individualized educational programme at home to improve his motor, personal, language, academic, domestic, social and pre-vocational activities. After getting training, he started threading a medium size needle, tie bow knot of his own shoes and gift items, cuts along a straight line by using scissor, read five common words, write his own address, write his fathers name, recognize time of one hour in wall clock, solve sums of single digit addition, prepare one cup of tea, and iron his own clothes. He stammered less while producing /l/. He showed improvement in all the activities as shown in table-2. His Mother was very cooperative. She promised to involve herself in further training programmes so that her child can become independent in all the areas. His scores are given below in Table-2 as well as in Figure -2

Name : Rajiv (Not real name)

Sex : Male

Age : 13 years

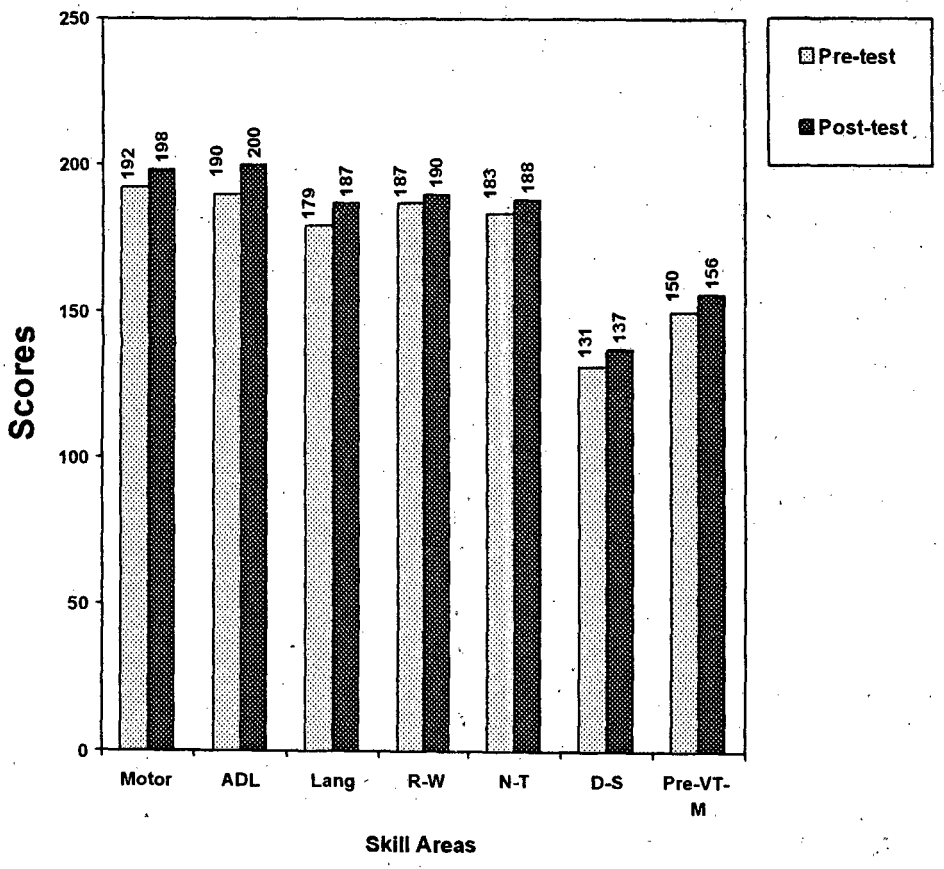
Training period : 6 months

IQ : 55 -60

Table # 2: Gain Scores of Rajiv

Skill Areas	Pre-Test Scores	Post-Test Scores	Gain Scores
Motor Skills	192	198	06
Activities of Daily Living	190	200	10
Language Skills	179	187	08
Reading Writing	187	190	03
Number Time	183	188	05
Domestic Social	131	137	06
Pre-Vocational Money	150	156	06

Figure- 2
Pre-test, Post-test Scores and Gain Scores in Functional Skill Areas of Case - 2



Note : ADL : Activities of Daily Living
Lang : Language
R-W : Reading & Writing
N-T : Number & Time
D-S : Domestic & Social
Pre-VT-M : Pre-Vocational & Money

Case-3

Rajni (real name is not used for the obvious reasons of confidentiality) belongs to a medium income group family living in a labour colony. Her father is a serviceman. She has one younger brother studying in 4th class. Before the training was started, it was assessed that she could not: cut a picture with circular lines by using scissors, tie the bow knot of her shoes, apply face powder, recognize female toilet in public places, follow directions,

left and right, tell her father's name & address, recognize colours, put objects in some category, write her own name, count objects, associate activities with time, concept of money and fold clothes. At the end of the training, she was able to cut pictures in circular shape from the magazine, tie bow knot of her shoes, count objects from one to five & recognize numerical symbols, apply face powder, tell her father's name, associate morning & lunch time with the concerned activities, tell right & left hand, write her name and recognize female toilets on bus stand and hospitals. Improvement in all the activities of Rajni can be seen in the following table as well as figure.

Name : Rajni (Not real name)

Sex : Female

Age : 11 years

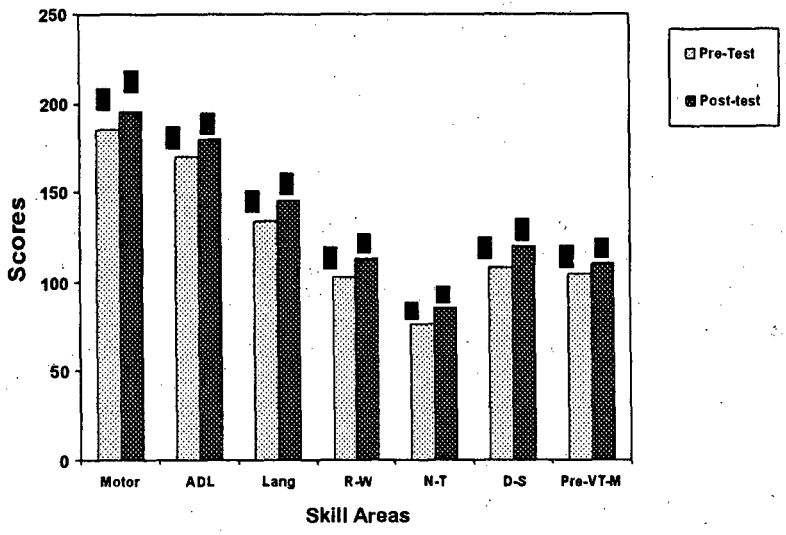
Training Period : 6 months

IQ : 35-40

Table # 3: Gain Scores of Rajni

Skill Areas	Pre-Test Scores	Post-Test Scores	Gain Scores
Motor Skills	185	195	10
Activities of Daily Living	170	180	10
Language Skills	134	146	08
Reading-Writing	103	113	10
Number-Time	76	85	07
Domestic-Social	108	120	12
Pre-Vocational-Money	104	110	06

Figure-3
Pre-test, Post-test Scores and Gain Scores in Functional Skill Areas of Case -3



Note:	ADL	:	Activities of Daily Living
	Lang	:	Language
	R-W	:	Reading & Writing
	N-T	:	Number & Time
	D-S	:	Domestic & Social
	Pre-VT-M	:	Pre-Vocational & Money

Case-4

Viki (real name is not used for the obvious reasons of confidentiality), son of a business man, lives in a village. At the pre-stage, it was assessed that he could not: walk continuously for fifteen minutes, use key to unlock, use spoon with support, unzip his nikkar, wash his face using a soap, recognize proper toilet at public place, recognize left & right, tell ten body parts, copy his name, count objects up to ten, tell yesterday, today and tomorrow, use dustbin at home and play informal games. But after getting the training, he showed improvement in all the skill areas. His parents were very happy as he started to recognize proper toilet at public place, become independent in eating and dressing skills, could write his own and his father's name, address, count objects up to twelve, tell time of one hour. It may be noted that before the training programme, her mother was not interested in involving herself in the training programme. But after persuading by the teacher and counselor, she agreed to cooperate. When her child showed some progress, she got motivated and involved actively in training of her ward after one month. Table-4 & Figure-4 indicate the progress of Viki.

TABLE- 4 Pre-test, Post-test & Gain Scores in Functional Skill Areas of Case-4

Name : Viki (Not real name)

Sex : Male

Age : 10 Years

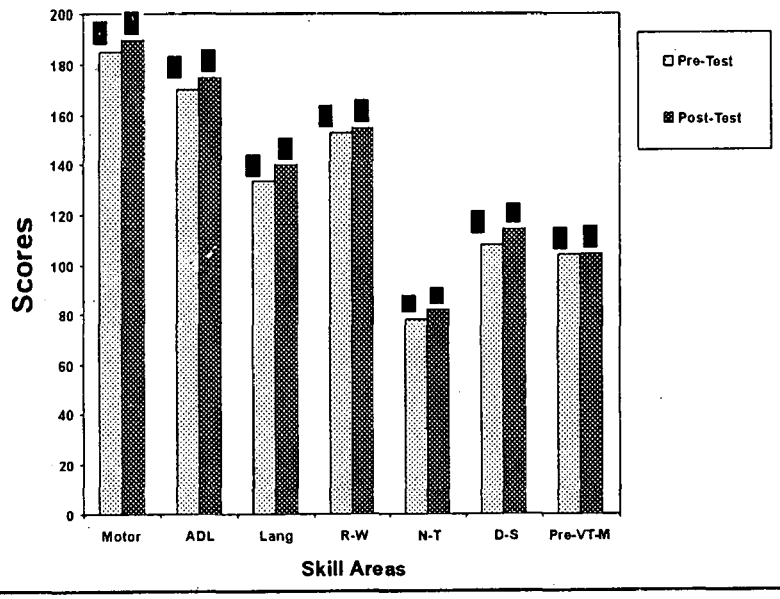
Training period : 6 months

IQ : 35-40

Table # 4: Gain Scores of Viki

Skill Areas	Pre-Test Scores	Post-Test Scores	Gain Scores
Motor Skills	185	190	05
Activities of Daily Living	170	175	05
Language Skills	134	140	06
Reading-Writing	153	155	02
Number-Time	78	82	04
Domestic-Social	108	115	07
Pre-Vocational- Money	104	105	01

Figure-4
Pre-test, Post-test Scores and Gain Scores in Functional Skill Areas of Case-4



Note:	ADL	:	Activities of Daily Living
	Lang	:	Language
	R-W	:	Reading & Writing
	N-T	:	Number & Time
	D-S	:	Domestic & Social
	Pre-VT-M	:	Pre-Vocational & Money

Conclusions

Implementation of' Individualized Educational Programme has successful outcomes in case of all the four subjects under study. All the subjects have shown desirable improvement in all the functional skill areas depending upon the level of mental retardation. It can be observed that subjects with mild mental retardation showed better improvement in skill areas than the subjects with moderate mental retardation. Hence, it may be concluded that Individualized Educational Programme can be considered as an effective programme in training of children with mental retardation.

Educational implications

- Parents when involved with adequate training, in the training of their children with mental retardation can act as very effective and successful resource persons.
- Through involvement of parents in training programme, they come to know about their children, their strengths and weaknesses and it also helps them to come out from any misconceptions about mental retardation
- Involvement and training of siblings for their brothers/sisters with mental retardation can act as most effective and successful resources persons.
- Individualized Educational Programme, if initiated and followed up on regular basis, can improve the functional skills of the subjects more effectively, it can be carried forward at home routinely and during the holidays also.

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Development & Evaluation of Child-Centred Curriculum For the Intellectually Challenged - An Action Research

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Abstract

While working with children with special needs, it was thought that what is lacking in the Indian setting is a set of goal-orientated directions. Parents and teachers are at a loss about what to teach, when to teach and how to teach. A need was felt to develop a Curriculum cum Instructional Guide. This Curriculum cum Instructional Guide is the outcome of an Action Research Project carried out at Indra Vidya Child Guidance Clinic of Amar Jyoti Charitable Trust from 1992 to 2000. Children and special educators from several special schools of Delhi participated in this project – initially for selection of tools, establishing the efficacy of these tools and later on for field-testing. Incorporating the suggested modifications a Curricular-Action-Plan was drawn up for three levels. Elementary (2-10 years), Secondary (11-16 years), and Vocational (17 years and above). It covers five areas i.e. (i) Assessment (ii) Record-Keeping (iii) Programme-Planning (iv) Child-Centred-Curriculum (v) Ecological Relevance, for all three levels. The Developmental version of Curricular–Action–Plan (CAP) was sent to 60 experts for their comments and ratings on a five point rating scale for each level separately. 40 experts returned the feedback format.

The Curricular-Action-Plan (CAP) can provide necessary curriculum modifications for intellectually challenged children placed in regular schools.

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CAP can also assist the teachers of general schools if they have a child in their class who has difficulty in following the regular curriculum. Individualized educational programme can be developed through assessment on CAP. The flexible approach of CAP can be of real

Introduction

While working with children with special needs, their parents and teachers, a wider perspective of a problem came to light. All children want to learn, all parents want to help their children to grow and all teachers want to teach them. What is lacking in the Indian setting is a set of goal-orientated directions. Parents are at a loss about what to teach, when to teach and how to teach. Teachers trained in regular teaching started teaching alphabets to intellectually challenged children, which had little relevance, a diminished retention and no meaningful purpose. Clinical psychologists diagnosed intellectual potential of children, categorized and labeled them according to I.Q. scores into mild, moderate and severe. These psychometric assessments no doubt served a purpose but did not provide concrete help to the parents or to the teachers. The desire to augment the development of intellectually challenged children through helping their caregivers – the teachers and the parents, by scientifically developed guidelines, led to the study of this problem in early eighties. A research study for "Development & Evaluation of Child-Centred Curriculum For Intellectually Challenged" was initiated at Amar Jyoti Charitable Trust.

Children are children first before being disabled or before having special needs. Their basic needs are the same, which are needs of security, love, belonging, individuality, stimulation, positive self-image and so on. Intellectually challenged children are more like, rather than different from, non-impaired children. Intellectually they have a limited capacity to learn, difficulty in abstract thinking, difficulty in 3-R work, a reduced ability to understand causal relationships, a limited ability for problem solving, difficulty in generalization, difficulty in verbal and written communication and diminished ability for incidental learning.

As regards their emotional make up, these children display poor self-concept, immaturity, difficulty in getting along with others and handling problems. Socially, they often come from underprivileged homes, have difficulty in forming friendships with people and have problems in coping with everyday situations. Very often they have reduced experiences on which to base academic learning and have deficiency in following social norms and customs.

Physically, these children often have poor motor-coordination, have a high percentage of speech defects and have a high incidence of physical anomalies. In addition, they generally have poor experiences in school; they

frequently experience failure, often come from educationally deprived families and have adjustment problems in school. These differentiating characteristics are present in each case in different degree and different combinations.

The researcher decided to develop a curriculum guide, which could provide concrete help to teachers in identifying needs of children, setting instructional goals, and in developing meaningful learning experiences.

There is a strong research evidence for the need to train teachers. The findings of teacher effectiveness studies have to be viewed as road maps with teachers making the decisions for the best routes to follow. Teachers have to be trained to become accurate decision-makers and to develop supportive classroom climates.

Speaking about 'Quality Implications of Education in Schools', Prof. A.K.Sharma has remarked "The teacher will need considerable support not only in the form of professional training but also they will have to be provided with appropriate evaluation tools and infrastructural support for taking care of the significant areas of education. Continuous and comprehensive evaluation needs a very meticulous system of record-keeping."

This project was designed to take care of these needs in an effort to enhance the manpower resources of special schools for the intellectually disadvantaged and those placed in inclusive settings.

An effort was made to develop a compendium of essential ideas, knowledge and processes, which can be utilized, by teachers and parents for facilitating the growth of special needs children.

The purpose of the curriculum-guide as envisaged by the researcher is to establish the special instructional needs of students with intellectual disabilities and to promote effective modes of addressing these functional needs. The whole exercise is based on the premise that students with intellectual disabilities have a right to an educational programme, which caters to their special individual needs, in a school setting.

The needs of all the students are often unique and varied. The skills and behaviors required by each student to appropriately participate within the home and school environments also vary. The chronological age, the previous learning experiences, the attitudes and expectations of the family and school personnel, all affect the performances of the students.

Hence, it was designed that the curriculum-guide should :

- provide a systematic process of gathering information;
- have a built in process of assessment to track student progress;
- keep cumulative records of student performances;

- develop individual educational programme (which does not mean individual tuition but a personalized programme) to be carried out by the interdisciplinary – team;
- visually represent gains and losses of students for communication with parents, to elicit maximum participation;
- be age-appropriate;
- apply to whole of life;
- be flexible to suit individual needs.

Experience is the basis of all learning. Intended classroom learning is embedded in the curriculum tasks or activities that a teacher presents to children or allows them to choose. These activities and the experience gained on these activities are crucial to the development of a child. It is important to observe a child's behaviour on the task to judge whether the teacher's expectation is appropriate and matches his capacity.

Individuals differ and these differences are far greater in children with special needs than in children who fall within the normal range of intellectual functioning. For these children it becomes all the more important to assess and record their current level of functioning as a baseline and then develop learning experiences from wherever they are.

It is important to understand the pupils in the classroom, their level of functioning and their behavioral characteristics. It prepares the teacher to use that understanding supplemented by the 'practical personal knowledge' for programme planning, record-keeping and developing a child-centered curriculum. Personal experience and personal practical knowledge play a major role in decision-making in special schools.

A lot of attention is being directed by the educationists towards the theory and practice of curriculum development. There is a major shift of emphasis from the 'cognitive-academic' approach to making it more personal and selective. Pupils from special schools also stand to benefit from these developments in educational practice. New approaches of keeping records of achievements particularly 'profiling' and a greater emphasis on curriculum-based assessments are becoming more prevalent. These are all encouraging signs of change and reform.

Talking about functional educational goals in special education, Gregory and Singer (1988) remarked, 'It is critical that the educational programmes be directly related to purposeful activities.' The overall goal of education being, preparation for life in the community, it is important to determine whether a particular skill is functional or not. Powell et al., (1985) suggested the following questions as guidelines for goal-selection:

- does this student need or use this skill in his or her everyday routine?
- does someone else has to help him or her perform this skill?
- will learning this skill allow the student to be more like his or her 'normal' counterparts?
- will learning this skill encourage non-handicapped peers to respond to him or her appropriately?
- does the student need this skill both now and in the future?

Two hundred school days of five hours a day i.e. 1000 hours a year have to be apportioned to provide for the development of Motor Skills, Social Skills, Number Skills, Writing Skills, Spelling Skills, Life skills, Creative skills and Leisure-time skills. Added to this is the recognition that a given child only gets a limited time under instruction, which again is a fraction of the total time, spent in the classroom. This highlights the need to use instructional time as productively as possible and to keep in mind the end towards which one is working.

The principle of functional curriculum is the basis of this study. An effort is made to select activities, which provide experiences to develop the skills. These are the skills used in everyday routine, which help the student to be independent and enable him to be more like his peers. Participation in community life is important and so are the social interactions with peers and supervisory adults. The important aspect of skill-selection is the need of the student to use the skill in present and future interactions.

The Curriculum Guide is planned to assist the teacher in assessment of the functional level of the students, preparation of existing profiles, maintenance of records and planning of individual educational programmes.

The final tool was supposed to be helpful to the teachers in giving them guidance for selection of relevant and achievable teaching goals for individual children with special needs. The teachers were expected to be able to use their creativity and ingenuity to make flexible Individualized Educational Plans with a child-centered approach.

The profiling system developed in the study displays the strengths and weaknesses of the children and helps the special teachers to understand the children's growth and makes them accountable for their learning. The visual presentations of achievements, planned activities and goals for the future motivate the parents to get involved in the education of their special child. It also helps the teachers to stay on the decided track.

The entire process of developing the Curriculum and Instructional Guide is carried out in three phases.

In the First phase, the researcher identified tools for assessing the special needs of intellectually challenged children. The following Norm-Referenced, Curriculum-Referenced and Criterion-Referenced tools for assessment, record-keeping, programme-planning and development of Child-Centred Curriculum were selected for a pilot-study.

1. AAMD Adaptive Behaviour Scale-School Edition (ABS-SE)
2. Portage Guide to Early Education (PGEE)
3. Assessment of Coping Behaviour (ACB)
4. Recreation Therapy Inventory and Assessment (RTIA)

Encouraged by the pilot study and the positive feedback from the special educators the tools were introduced in two special Schools in Delhi after conducting Orientation Workshops and initial follow up training of teachers. An efficacy study was conducted by a specially designed Interview-Schedule after one year of use. The relevance and applicability of these tools and suggestions for cultural adaptations were evaluated. All the four tools received a positive feedback and were accepted as good guides for assessment, record-keeping, programme-planning, and development of Child-Centred-Curriculum for different age levels.

During the Second Phase, the special educators were given the experience to use the selected tools for three years. Selected case studies of mild, moderate and severe levels of different age groups were studied for learning outcomes.

In the Final Phase, after incorporating the suggested modifications a Curricular-Action-Plan was drawn up for three levels. Elementary (2-10 years), Secondary (11-16 years), and Vocational (17 years and above).

The Developmental version of Curricular –Action –Plan (CAP) was sent to 60 experts for their comments and ratings on a five point rating scale for each level separately. 40 experts returned the feedback format.

Table 1: Feedback from Professionals : Mean Score of 40 respondents

	Assessment keeping	Record-Planning	Programme-Centred Curriculum	Child-Relevance	Ecological
Elementary	3(3.3)	3(3.3)	3(3.4)	4(3.95)	4(4.05)
Secondary	4(3.5)	4(3.6)	3(3.1)	4(3.8)	4(4.1)
Vocational	4(3.67)	4(3.6)	3(3.4)	4(3.9)	4(3.9)

***5=Most Appropriate, 4=Appropriate, 3=Acceptable , 2=Less Appropriate, 1=Inappropriate**

To conclude the experts have considered the efficacy of this tool for developing a Child-Centred and Ecologically relevant curriculum as 'Appropriate' for all three levels.

The objectives of the Instructional Guide were:

- to simplify educational evaluation for use in the classroom;
- to maintain cumulative records of the pupils;
- to plan I.E.P's based on the functional assessment through the developed tool;
- to be flexible enough to make the plan child-centered and ecologically relevant;.
- to develop age-appropriate functional goals for preparation of life in the community;
- to provide for a Curriculum-based-Assessment System;

This Curriculum cum Instructional Guide is the outcome of an Action Research Project carried out at Indra Vidya Child Guidance Clinic of Amar Jyoti Charitable Trust from 1992 to 2000. Children and special educators from several special schools of Delhi participated in this project – initially for selection of tools, establishing the efficacy of these tools and later on for field-testing.

Outcome of the field testing of the Instructional Guide:

A feedback format consisting of 20 statements based on a five-point rating scale was prepared. Each participant rated CAP on these 20 statements and gave a score. The maximum possible score of 100 was the most positive rating for CAP. One hundred teachers attended the orientation workshops but the feedback formats were returned by only 80 teachers (40 from Group A and 40 from Group B). Group A teachers were participating in the project from the beginning while Group B teachers were introduced to the tool by a one day orientation programme

Table 2: Comparison of Group A and Group B Scores

Group	Mean Score	Standard Deviation
A(N-40)	78.37	2.71
B(N-40)	77.62	2.63
Difference	0.75	0.08

The feedback score from the participants was highly positive for both the groups and the fact that the minor difference of 0.75 for the mean score and 0.08 for the Standard Deviation, implies that it is not difficult for teachers to get trained in the use of CAP. One-day training workshops are sufficient

for teachers to get acquainted with it and to acquire the competence to use it. The easy applicability and training potential of CAP should be able to give it a practical authenticity.

The Curricular-Action-Plan (CAP) can provide necessary curriculum modifications for intellectually challenged children placed in regular schools. CAP can also assist the teachers of general schools if they have a child in their class who has difficulty in following the regular curriculum. Individualized educational programme can be developed through assessment on CAP. The flexible approach of CAP can be of real value in individualization and removal of barriers in learning.

The developed tool has been published along with the record keeping and profiling system. It is included in the recommended tools for DSE(MR) course. It is available from Amar Jyoti Charitable Trust.

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Special Schools for the Deaf in North India: Profile of Principals and Teachers

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Abstract

Compared to any other child, school plays a greater role in the life of a deaf child. Educational opportunities equip a deaf child with communication skills, academic knowledge and vocational skills along with contributing in his cognitive, social, emotional growth and personality development. The principals as head of the institute are directly responsible for formulating and implementating school policies. Their qualifications, experience and attitudes not only give an image to the school but also affect the quality of the inputs given by the teachers. Similarly, quality of the teachers and the quality of inputs provided by them are directly visible in the output given by the students. Qualifications, teaching experience and other profile features of the principals and teachers and also information about the professional support staff of selected special schools for the deaf were studied as a part of a larger attempt to study the status of special schools for the deaf.

Introduction

School is a major component of the rehabilitation process of the deaf. It is said that more than any other factor, school plays a greater role in the life of a deaf child. For most of the deaf the formal institute of education i.e. a school is the place from where they usually start having some self-identification and self-worth. Educational opportunities equip a deaf child with communication skills, academic knowledge and vocational skills along with

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contributing in his cognitive, social, emotional growth and personality development. Teachers of the deaf in most cases do a unique duty of developing even the first language in their pupils. However, the output given by students in the form of academic achievements and other life skills are dependent to a large extent upon the kind of inputs given by the teachers. Teachers in fact are the pillars of an educational institute.

India has a large school going deaf population, though presently only a small fraction of the needy group has an access to formal education. With Sarv Shiksha Abhiyan (SSA) opening the doors of regular schools for the deaf too, the figures of school going hearing impaired children should rise sharply. However, for most severe to profound deaf children special schools are still a better choice. There are an estimated 550 special schools for the deaf though the *"Directory of Rehabilitation Resources for Persons with Hearing Impairment in India" (AYJNIHH, 2000)* lists only 431 schools. The directory does not provide with complete information about the number of trained and untrained teachers. A Report on Manpower Development (RCI, 1996) reported that there are around 7500 teachers of the deaf, of which only 5288 are trained and out of which as many as 4292 (81.2%) are diploma holder, and only 996 are degree holders. In fact the number of the Special Educators is only 4011 and that of support staff is 1277. With Bhoj Open University in collaboration of Rehabilitation Council of India (RCI) starting B.Ed (HI) in distant mode, the number of degree holder trained teachers is on the rise. There is however, no data on the number of deaf staff working in special schools. Considering the fact that very few deaf reach up to the college level and also that the teacher training programmes are not yet equipped to cater to the needs of deaf teacher trainees, there are almost no trained deaf teachers in the country. Further in the existing communication scenario in the special schools where major emphasis is on speech there is no place for deaf teachers. In fact studies profiling the principals, teachers and professional support staff of special schools for the deaf in India are badly lacking. Results presented below are part of a larger status study of the special schools for the deaf done by the first author for her doctoral dissertation.

Purpose of the Study

Deaf Education globally has failed to produce desired results and there is a need to shift the blame from the deafness of the child to the quality of the teachers and their teaching strategies. The purpose behind collecting information about the principals and teachers of the special schools for the deaf was not only to study their profiles but also to highlight that how inadequacies can adversely affect the quality of inputs resulting in quality of output in terms of language skills and academic achievements of their deaf students.

Methodology

The data was collected from 20 special schools for the deaf of five states and one union territory of north India. The data was collected from the principals and the teachers using structured questionnaires especially constructed for the purpose. School visits, discussions with the principals/teachers, classroom observations and videotaping of classroom teaching provided additional information.

Results

Profile of the schools

Out of the 20 schools under the study, 2 were fully govt. schools, 14 schools were NGOs (aided) and 4 schools were NGOs run but unaided by any govt. grant. 2 schools were till class Vth , 10 till class VIII, 6 till class Xth and only two schools offered education till XIIth standard. 12 (60%) of the schools had hostel facility and five schools had teacher training facility out of which 3 schools offered diploma level training (DSE-HI), one offered Foundation Course and was also a study center for B.ED (HI) in distant mode of Bhoj Open University and one school had Indian Sign Language training for its teachers. 18(90%) schools had Hindi as a medium of instruction whereas one had Punjabi. One school used Indian Sign Language (ISL) as mode of communication and medium of instruction and taught English as a second language. All schools taught more than one languages though different schools introduced second language at different class levels.

Profile of the Principals

Table 1 gives an overview of some of the personal profile features of the principals belonging to 20 different special schools for the deaf covered under the study.

Age

Though the average age of the principals was around 49 years, it was found that some of the principals were above 65 years of age and had done their training more than 30 years back and were rigid in their attitudes. They were found to be critical of the present day teacher training programmes.

Gender

Considering that most teachers in specials schools are found to be females, the number of 8 male principals (Table 1) can be considered high. It was found that many of the principals did not actually belong to the area of deaf education but had been employed for only administrative duties.

Cross tabulation between age and gender pointed that all the male principals were above the age of 45 years and three of them were in fact

more than 65 years old whereas majority of the female principals were between 25 to 45 years old.

General academic qualifications

From the Table 1 it can be seen that all the principals were well qualified as far as the general education qualifications were concerned. As many as 12(60%) principals held Master of Arts (M.A.) degree and one even had Master in Philosophy (M. Phil), though, none of the them was Master of Science (M. Sc.)

Special education qualifications

Table 1 highlights the poor special education qualifications of the principals where as many as 7(35%) principals did not have any special education degree or training in hearing impairment and 6(30%) of them were just Certified Teachers of the Deaf (CTD) diploma. This means that they did their diploma level training before 1983. Another 2(10%) principals had done only a 3 month Foundation Course that in fact is only a sensitization course and does not qualify a person to become a teacher of the deaf. Only 2(10%) principals had done B. Ed.-HI and no principal held M. Ed (HI). It was found that 3 of the principals held foreign training of 2 months to 1 year in deaf education or multiple handicap.

Cross tabulation between gender and special education degree showed that out of the 8 male principals 3 had done no training in deaf education and 4 had done CTD (done between the year 1953-1970). Poor special education qualifications of the principals may have prevented them to have proper insights into the problems of deaf education. Many teachers of such schools did complain about this aspect. However, many of the principals who did not have special education qualification, had previous administrative experience such as principal of a regular school, District officer, Deputy Circle Officer etc.

Teaching Experience

Table 2 indicates that many of the principals had the experience of teaching to hearing children before joining the special school. It could be inferred that management of many schools preferred to hire experienced teachers/ retired principals of regular schools because of lack of qualified persons from special education area.

It was found that as many as 8(40%) principals were not doing any teaching work to the deaf and 6(30%) of them in fact had never taught to the deaf children but 2(10%) principals did it before but were not doing it presently. Cross tabulation showed that five of the six principals who had never taught to the deaf children were the ones who did not have special education degree.

Further results from the same study showed that many principals had poor knowledge of different communication modes, misunderstanding of terms like aided audiogram, signing system and sign language. This appears to be the direct result of poor special education qualifications, lack of teaching experience and also lack of updating their knowledge.

Profile of the Teachers

Number of teachers

A total of 261 teachers taught in the twenty schools under study with an average of 13 teachers per school. However, the range was from minimum 5 teachers to a maximum of 44 teachers in a school. 11(55%) schools had 5-10 teachers, 7 (35%) schools had between 11-20 teachers and 2 schools had as many as 22 and 44 teachers respectively.

School size and number of teachers

A high 'r' value of Pearson's coefficient of correlation (r =.926) showed that larger the size of a school (in terms of total number of students in the school), higher the number of teachers. In a special school, however, more important is the teacher student ratio, which in ideal conditions should be six to eight students per teacher.

Table 3 shows that having more number of students did not mean to have good teacher student ratio and rather smaller sized schools had almost an ideal teacher student ratio. However, in one school at least a minimum of 16 students were found in all the classes.

School type and teacher student ratio

Table 3 further shows that the NGO schools which were not receiving any financial aid from the state or center had the lowest mean of teacher student ratio, where as the highest ratio was of fully govt. schools. Similarily though the schools with hostel facility usually have more number of students and hence more number of teachers, but not enough to have low teacher student ratio. Though, the 't' test values between the means of govt. and non-govt. schools were non- significant, yet the trend does indicate that the non-govt. schools did have lower teacher-student ratio than the govt. schools.

Gender

As is evident from the Fig. 1 the number of female teachers was almost double the number of male teachers. This trend corresponds to the national, rather international scenario, as in the area of school education especially special education more female teachers than the male teachers are found to work.

In the present study, at least two schools had no male teachers. However,

the data analysis of teacher trainees (same study) showed a reversal of this trend; as out of 72 trainees as many as 50(69.4%) were found to be males. A general rise in unemployment seems to be one of the reasons for males to go for training in special education in an increased number but this reversal in the trend may be limited to the selected area and not a nation wide trend.

Age

Data analysis of 220 teachers from filled in questionnaires showed that there was a wide gap of 46 years between the youngest teacher who was just 19 year old and the oldest teacher who was 65 years old. Average age of the teachers however, was calculated to be around 38 years. There was almost an equal distribution of teachers in 25-35 years, 35-45 years and 45-55 years age groups.

Hearing Status of the teachers

It was found that none of the schools had deaf teachers but out of 20 schools as many as 12 (60%) schools did not even have any non-teaching deaf employee. In rest of the 8 schools, a total of only 12 deaf professional support staff or deaf non-teaching staff were found. Only one school had one female deaf person who was a teacher aide in the pre-primary section, otherwise all other 6 female deaf were art teachers. One male deaf instructor taught sign language to teachers and students and was a professional photographer also. In two schools the Physical Training Instructors (PTI), both males, were deaf. In other two schools the vocational trainers were deaf. One taught weaving and another taught screen-printing. In another school the peon cum watchman was a deaf person and he was a pass out of the same school. Reasons for the absence of deaf teachers can be two fold. First is that except for one school all schools under study had spoken language as the main mode of communication and instruction, excluding the possibility of inducting deaf as teachers. Secondly, there are simply no deaf teachers available. Because of poor language skills and lack of training facilities very few deaf reach the college level and those who reach take up other jobs, as teacher education programmes in India not yet equipped to teach to deaf teacher trainees.

The above results are in line with the results of previous studies of Woodward et.al.(1987), Andrew and Jordan (1993), and Callaway (1999) where majority of the teachers of the deaf were found to be female and hearing.

General education qualifications

Table 4 shows that though majority of the teachers 177(80.46%) had done their Bachelor's degree and 29% had done Master's degree too, there were still 43(19.54%) teachers whose general academic qualification was just Senior Secondary (class XII).

Special education qualifications of the teachers of the deaf

As many as 211(80.8%) teachers in the present study were trained and only 50(19.2%) teachers were found to be untrained. However, distribution of trained and untrained teachers in the present study was not the same in all the schools. There were 12(60%) schools where more than 75% of the teachers were trained and 8 schools (mainly the govt. schools or schools with teacher training facility) had all their teachers trained. However there was at least one school where not even a single teacher was trained. High percentage of trained teachers however, was misleading as Fig. 2 reveals that as many as 22.6% of the trained teachers had done only a Bridge/ Foundation Course.

Fig. 2 further shows that 29(13.7%) teachers were Certified Teachers of the Deaf (CTD), which was a diploma level training course offered prior to 1983 when its name was changed to D.Ed (HI). It is clear from the Fig. 2 that maximum number 122(57.8%) of trained teachers were holding D.S.E.(HI) training only. This diploma prepares teachers at primary level but it was found that few of these teachers were teaching junior high classes and in some schools to even secondary classes. The number of teachers who had done Bachelor's degree was only 16 (7.6%). As is evident from the Fig. 2 only one teacher (0.5%) was holding Master's degree in deaf education. Above discussion about the special education qualifications indicate that though the number of trained teachers seems very good, the actual number of well qualified teachers of the deaf is very small and many principals mentioned the lack of well qualified good trained teachers of the deaf as one of the major problems faced by the school.

Teaching experience of the teachers

The minimum time a teacher had been teaching to deaf children was just one month whereas the maximum was 38 years with an average of 10.8 years. Though 70 (31.82%) teachers had teaching experience of less than 5 year, the maximum number of teachers had been teaching for five to fifteen years.

As a response to a related question it was found that 83(37.7%) teachers had taught in other deaf schools also and their teaching experience ranged from less than 6 months to more than ten years. Results also showed that 91 teachers (41.4%) had taught to hearing children also and the duration of experience ranged from one month to more than 18 years.

In another question it was found that at the time of data collection 49(22.3%) teachers were giving tuitions to deaf children at home, and 31 (14.1%) teachers were giving tuition to hearing children after school hours.

The implication of the answers lied in the fact that those teachers who gave tuition to deaf children were communicating with the deaf more and it reflected in their teaching at school. On the other hand those who were interacting with hearing children tended to bring more speech to the classrooms. Their speaking speed was also found to be faster than those teachers who interacted mainly with the deaf (videotaping and class observations). These teachers many a times were also found to be teaching with their back towards the students i.e. writing on the board and also speaking.

Deaf relations

Out of 220 teachers, only 30(13.6%) teachers had deaf relations in the family. Fig. 3 shows that only 7 teachers had deaf children, whereas four had one or both parents deaf and six teachers had deaf siblings. Rest 13 (43.3%) teachers had near or far relatives who were deaf.

Off school communication with the deaf

It was found that outside the school hours as many as 80(36.36%) teachers never communicated with the deaf whereas there were 63(28.64%) teachers who communicated with the deaf on daily basis. 49 teachers who gave tuitions to deaf children were also included in these 63 teachers. Interaction with the deaf outside the school hours helps the teachers to develop better rapport as well as communication skills with the deaf. As mentioned earlier it affects their teaching in the school and is also reflected in their choice of communication modes at school. It was interesting to find that those teachers who taught speech to the deaf children after school also used more speech in the school than those teachers who interacted with the deaf adults with whom they mainly used gestural communication.

Salary

Data analysis showed that 11 schools (55%) paid their teaching as well as non-teaching staff only a consolidated (a fixed amount) salary, whereas in 9 schools teaching staff got regular pay scales. Only 2(10%) government schools paid government scales to all the teaching and non-teaching staff, whereas in 7(35%) other schools' pay scales were given to only selected staff members and rest were paid only a consolidated salary. Having pay scales means a better salary whereas consolidated salaries are usually poor ranging between Rupees 1000/- to Rupees 6000/- per month depending upon the qualification, experience and nature of duties. Salary in regular pay scale could go up to as much as Rs. 14000/- per month.

Table 5 shows that 70% of the teachers had monthly salary less than Rupees 5000/-. Only 65(30.3%) teachers reported having monthly salary more

than Rupees 5000/-. However, out of these 65 teachers, more than 38 teachers belonged to two government schools. It was further found that majority 160(76.2%) teachers were not satisfied with their present salary. Younger teachers than the older ones showed more dissatisfaction as their counterparts in other jobs were drawing much bigger salaries. Low salary in special education has been found as a major reason for not attracting good teachers to this field.

Membership of National Convention of Educators of Deaf (NCED)

Based on the responses of principals it was found with great dismay that out of 20 schools, 12(60%) schools did not even have a single teacher member of NCED and out of the rest 8 schools only 13 teachers were reported to be the members of NCED which was established way back in 1935. This convention holds its annual conference and is a great platform to meet other teachers of the deaf and also know what is happening in deaf education nation wide but participation from North Indian states has always been poor. Some of the teachers did not even know about its existence and its full name!

Professional support staff

Along with the teaching staff, a special school requires a number of professional support staff. This support staff compliments the services of the teaching staff. Table 6 reveals that Art teachers, Vocational Trainers and Audiologist cum Speech therapist were the only professional support staff found in ten or more schools. Only one (5%) school had Sign Language instructor and it was note worthy that he was deaf and school was planning to hire another deaf sign language instructor.

It was further found that if 3 (15%) schools had as many as 8 professional support staff members out of a list of 12, there were 4(20%) schools, which did not have any support staff, and 4(20%) schools had only one professional support staff. This analysis showed that certain schools had a large number of support staff, whereas certain other schools were running on only the barest minimum of just teaching staff.

Type of school and the professional support staff score

Presence of each professional support staff in the school was given a weighted score of one and professional support staff score for each school was calculated. Table 7 below shows that the mean professional score of govt. schools was minimal and NGO unaided schools had the maximum mean value of professional support staff score. This finding however, was surprising as it was expected that the funds would be the least problem in government schools and they would be in a better position to hire more professional support staff members.

Correlation between size of the school and professional support staff scores:

Though non- significant, a negative value of coefficient of correlation (r = -.145) between size of school and professional support staff's weighted score showed that large size (in terms of number of total students) of the school did not necessarily mean more number of professional support staff. Rather maximum number of such staff members was found in small sized schools.

Personnel Status Score

Personnel status score was computed based on three parameters:

i) Percentage of trained teachers

ii) Teacher student ratio

iii) Professional support staff status score

Accumulation of the three scores was done for each school to reach a personnel status score and schools were divided into three categories of low, average and high personnel status score. A school could score a minimum personnel status score of zero and maximum of 18. It was found that minimum mean personnel score was 3 and maximum was 13 with an average of 8.2.

Mean	8.20
Minimum	3
Maximum	13

It was found that 11(55%) schools fell in the average category of personnel status score whereas 5(25%) schools fell in the low score category and only 4(20%) had personnel status score 12 and above.

A non significant, but a negative coefficient of correlation (r = -.061) existed between the size of the school and personnel status score indicating that size of the school was not really related with the personnel status score. Rather schools with less number of students had a better personnel status score.

Type of School and Personnel Status

Table 8 shows the mean personnel status score of different types of schools. It reveals that govt. schools though expected to have more funds to hire teachers and other support staff, had much less support staff status score than the non- government schools. Similarly the schools without hostels also have slightly better mean personnel status score. However, 't' test values for

govt. schools and NGO (aided) schools ('t'=0.40) as well as govt. and NGO (unaided) schools ('t'=0.25) was not significant. To reach at generalizations, studies done with larger number of samples are required.

Conclusion

Qualification norms for the principals of special schools differ from state to state, however, study of the above results indicate that many of the principals do not have the required qualifications and teaching experience in deaf education, and majority of teachers have only diploma level qualifications. Many principals and teachers showed lack of knowledge of technical terminology and also ignorance of latest trends in deaf education like bilingual education. There is an urgent need to review the teacher training programmes for more in-depth, varied and relevant training. It is suggested that instead of two-year diploma after senior secondary, a three-year undergraduate degree programme in special education with the final year of specialization in a specific area of disability can produce better teachers. This could also followed by one year of B.Ed HI. There is also an urgent need to assess the communication skills of the special educators of the deaf and teacher training programmes can do a lot of good work by introducing sign language courses at both diploma and degree level. This is needed since as many as 211 (95.9%) teachers reported use of gestures/signs while communicating with their deaf students (same study). However, most teachers pick up their signs from the elder deaf students and in the absence of any formal learning of sign language their language inputs to students remain partial. This in turn leads to partial outputs. Poor literacy skills of the deaf students continue to be a major problem of deaf education. It was also found that overall the unaided NGO schools had better personnel status score than the govt. schools.

Joint standards committee of National Council on Education of the Deaf in USA (1996) issued a joint knowledge and skill statement comprising 66 statements indicating essential competencies required of teachers of the deaf and hard of hearing students. Luckner and Carter (2001) did another such study and 67 specific competencies required for the teachers of the dead were identified. In the absence of a National Board of Deaf Education in India, it is recommended that RCI can take up the responsibility of formulating knowledge and skill statement for all becoming teachers of the deaf and a national study be done to establish an initial data base of the essential competencies needed for working with deaf students. Lytle and Rovins (1997) had stressed that if higher achievements are to be expected then skill and knowledge competencies of teachers of the deaf have to be at par with regular school teachers.

Table 1: Personal Profile Features Of The Principals

Characteristics	Results		
Age	Minimum	25 Years	
	Maximum	70 Years	
	Average	49.4 Years	
		Frequency	Percentage
Gender	Male	08	40
	Female	12	60
Hearing status	Hearing	20	100
	Hard of Hearing	—	—
	Deaf	—	—
General academic qualification	B.A./B.SC.	20	100
	B.A./B.SC.+B.Ed	06	303
	B.A./B.SC.+B.Ed+M.Ed	01	5
	M.A.	12	60
	M.Phil	01	5
Special education qualification	None	07	35
	CTD	06	30
	DSE (HI)	03	15
	Foundation Course	02	10
	B.Ed.(HI)	02	10

Table 2 Teaching Experience Of Principals

Teaching Situation	Results	
Teaching experience to hearing students	None Minimum monthsMaximum Average	8 (40%) 5 40.00 Years 9.93 Years
Teaching experience in the deaf school under study	None Minimum Maximum Average	6 (30%) 2.00 Years 50.00 Years 20.07 Years
Teaching Experience in other deaf schools	None Minimum Maximum Average	15 (75%) 1.5 Years 9.0 Years 5.0 Years

Table 3 : Teacher Student Ratio As Related To School Size And Type

School size and school type	Mean teacher student ratio
Small sized (Less than 100 students)	1: 8.86
Medium sized (100-200 students)	1: 13.53
Large sized (200 or more students)	1: 14.33
Govt. Schools	1: 15.18
NGO (aided)	1: 12.88
NGO (unaided)	1: 7.23
Schools with hostel	1: 12.19
Schools without hostels	1: 10.25

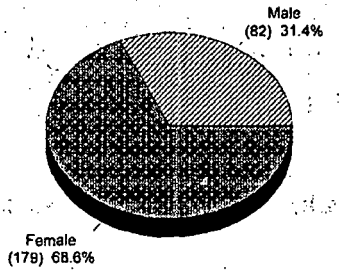

Fig. 1 Gender wise distribution of teachers

Table 4: Distribution Of Teachers Based On Their General Education Qualifications

Educational qualifications (General)	No. of teachers	Percentage
Inter only (XII class)	43	19.54
Undergraduate only (B.A./B.Sc.)	80	36.36
Post graduate (M.A./M.Sc.)	64	29.09
B.A./B.Sc.+B.Ed.	17	7.72
M.A./M.Sc.+B.Ed.	16	7.27

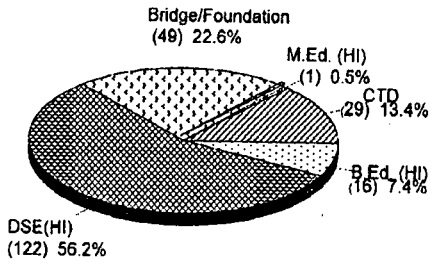

Fig. 2: Distribution Of Teachers Into Various Special Education Qualifications

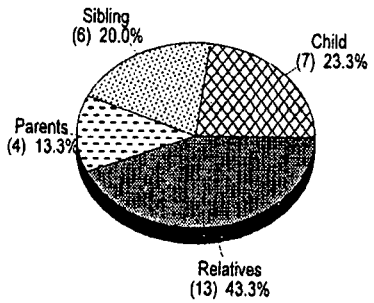

Fig. 3: Distribution Of Teachers Based On Their Relationship With The Deaf In The Family

Table 5 : Distribution Of Teachers Based On Their Monthly Salary

Salary/month	Number of teachers	Percentage
Less than Rs. 2000/-	33	15.3
Rs. 2001 to Rs. 3000/-	54	25.1
Rs. 3001 to Rs. 4000/-	44	20.5
Rs.4001 to Rs. 5000/-	19	8.8
Above Rs.5000/-	65	30.3

Table 6 : Professional Support Staff In The Special Schools For The Deaf

Professional support staff	Number of schools	Percentage
Art Teacher	14	70
Audiologist	10	50
Speech Therapist	10	50
Sign Language instructors	1	5
Vocational Trainer	12	60
Social workers	3	15
Occupational Therapist	1	5
Psychologist/Counselors	3	15
Physical Education Instructor	6	30
Hearing aid repair technician	6	30
Ear Mould Technician	3	15
Librarian	1	5

Table 7: Distribution Of Mean Professional Support Staff scores based on the type of school

Type of school	Mean professional support staff score
Govt.	1.00
NGO (aided)	3.92
NGO (unaided)	4.00
Schools with hostel	3.50
Schools without hostels	3.87

Table 8: Personnel Status Score In Relation To The Type Of School

Type of schools	Mean personnel status score
Govt.	5.5
NGO (aided)	8.5
NGO (unaided)	8.7
Schools with hostel	8.16
Schools without hostels	8.25

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Mental Stress of the Parents of the Children with Mental Retardation : A Study

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Abstract

Due to constant touch with Mentally Retarded Children of "ANKUR" special school for the mentally retarded children, Bhavnagar, the author could know that the parents of. Children with mental retardation are in constant grip of disappointment and are worried about present as well as future problems of their children.

This appears to create acute mental stress among the parents, which has its adverse effect on their family, social, professional and personal lives. The author felt need to study the causes, and nature of stress the result of which can be useful for future programmes of training / orientation of parents of Children with mental retardation (particularly at the "ANKUR" school where the said study is conducted. The research design is of a survey, which used interview and questionnaire as data collection techniques. Conclusion and suggestions are also given at the end of the article.

Introduction

Mental retardation is not a disease, but a condition, but among the parents, the very concept of 'Mentally Retarded Child' creates an unbearable stress. Ordinarily, birth of a child in the family is a matter of great joy but when the child is labeled as Mentally Retarded by an expert, the entire atmosphere of happiness in the family and more particularly that of the mother, turns into sheer disappointment and slips into a great shock. The Mother, as

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also no family member is ready to accept this situation. The entire family is known to experiences a typical stress. However, the levels of stress experienced by the family members have been found to be different. A good number of factors are responsible in determining the certain level.

Mental Stress is a complex problem of the present society. A research has recorded that 75% of the diseases are due to mental stress. Stress is responsible for causing most of the diseases e.g. cardiac disorder In Mental Stress, psychological as well as physical reactions take place. The impact of stress can be of temporary duration or it can even be of a long time. The factors responsible for the stress are called as stressors.

Some scientists define stress in the form of reaction, wherein emphasis is put on how a person reacts mentally and physically in grave situation such as worry, anger, aggression etc.

The stress in the context of the present study means the combination of the negative and undesired sustained responses including the worries, the uncertainties and the helplessness felt and expressed by the parents as an outcome of the mental retardation of their child.

Review of literature

A strong change is seen in the family, after it is diagnosed that the baby is mentally retarded. Each of the family member is affected differently by the diagnosis. The qualitative and quantitative level of mental stress depends on the mental, physical and monetary support given to the parents. Moreover, the intensity of stress also depends on the factors like parent's intelligence, capacity to tolerate stress, child's age, level of mental retardation, and also on associated disability of the Child (if any). However, by passing of time, the impact of this stress gradually recedes and along with other stresses, this stress also may become a matter of routine. It may happen that the expectations of parents from the child may go on increasing as the child grows. However, if the child is failing in their expectations, the mental stress may even worsen than what it was before. (Orr. et. al. 1993)

Many studies of "mental stress" related to the mentally retarded children in the family have been carried out. For experts, this has been always a subject of deep interest. Incidentally, the concept of "Relationship in the family" – has evolved. The incidence do take place in the family where everybody has to seek each other's co-operation and help to solve their problems. Therefore, a problem which is affecting one person of the family, automatically becomes "a problem" of each member and each one gets ready to help each other. The study has also derived that the financial needs; day today care, entertainment, social responsibilities, basic needs, etc. are badly affected due to a "Mentally Retarded Child" in the family.

Purpose of the study

A good number of needs of a mentally retarded child, are services of experts, health, special training, guidance, education, special equipments and appliances. Fulfillment of all these largely depend on parent's social, educational and financial conditions. Because of typical pressure about inability to cater to all these needs the parents are confused and feel insecure.

Parents either blame themselves or try to blame other family members as responsible for this disability. Thus it can be said that no parent of a mentally retarded child is spared from mental stress. However, with the change in the surroundings, the level of mental stress also witnesses some change.

Some parents automatically understand the problem and find out the way, take constructive measures. Some parents analyze the problems and seek guidance of the experts. Some may find it difficult to adjust and some will take more time to accustom themselves. But the success of the parents depend on the information they gain about how to deal with emotions and how to reduce the mental stress. It is undisputable that successful experiments play major part in reducing the stress. Expeditious planning is of great advantage. If this is not done in time, it adversely affects the health of the parent and adopting the right path of therapy to cure may also get delayed. Hence it is very essential to find out the level of mental stress of a parent so as to deal with it effectively. This led to the said study which intended to find out the level of Mental Stress of the parents of the children of "Ankur School for the Mentally Retarded Children".

Objectives of the study

(1) To carry out detailed study of the mental stress of the parents of the mentally retarded children studying at "ANKUR School for the Mentally Retarded Children".

(2) To know the factors responsible for causing mental stress and its level in each family.

Method of study

The researcher discussed some issues with the parents of newly admitted mentally retarded children of Play Group of 'Ankur' school. The issues discussed were: the causes of mental retardation, efforts made by parents and their family members, social and financial condition of the family, their health status, area of residence, services and mode of family earnings.

The person who carried out the study of the elements responsible for

causing mental retardation examined the newly admitted mentally retarded children of the Play Group of Ankur School for Mentally Retarded Children. He also studied the efforts made by the parents and other family members of the child, social and financial condition of family.

Parents were informed to remain present for observation at the time when children were to be brought to the school for the first time. A good number of parents were weeping.

The aim of the researcher was not to cover only the parents of the children of Play Group, but the parents of all the children of the school. Therefore, 20 parents were interviewed one by one, and information was collected and after doing necessary analysis, the researcher drew a conclusion. To obtain some uniform information, the researcher has put the questions in 10 different sections and prepared a questionnaire. Based on this exercise, information has been collated.

The researcher has tried to record the conclusion after interviewing the parents, particularly the mothers and discussing with them the entire situation-right from the birth of the child. The subjects of study were all the parents of the M.R. Children who are studying at the Ankur School for the Mentally Retarded Children, Bhavnagar, during the year 2006-2007.

Cases were selected from different Groups, out of which 25% children were randomly selected and their parents were approached for interview.

Description of cases

Sex:In the present study 100% were women (mothers of M.R. Child)

Table1: Educational Background of the Mothers

Illiterate	7	Primary Education	2
Middle School Education	9	Higher Education	2

Table2:Mother / Father's Occupation And Monthly Income

Mother's occupation	No.	Father's occupation	No.
House Wife	16	Business	10
In Govt. Service	3	In Govt. Service	2
In private company	1	In private company	4
		Other	3

Table 3: Income of the Family

Mother/Father's monthly income:	No. of Mothers	No. of Fathers
Rs. 500 to 1000	02	00
Rs. 1000 to 2500	00	07
Rs. 2500 to 5000	00	06
Rs. 5000 and above	03	06

Composition of Family:

In this context, 4 families (20%) live as a (undivided) joint family whereas 16 families (80%) live independently (nuclear family).

Area in which the families live:

The study has revealed that 3 families (15%) live in backward (slum) area, 13 families (65%) live in middle class area whereas 4 families (20%) live in area of high income group.

Types of information:

In the present study, different 9 areas were covered for interview:

1) Personal Information
2) Social Information
3) Family Information
4) Health Related Information
5) Information related to child's future
6) Educational Information
7) Information related to personal life
8) Financial Information
9) Occupation / business related information.

Analysis

A questionnaire was prepared related to social, family and the other worries of the parent about child's future. The responses which were received during the interviews were classified and based on that following information is presented:

A) Social information

- In the present survey, 13 questions related to social issues were asked. One of the questions was - How much cordial and co-operative are the relatives and neighbors towards family of the mentally retarded child? 80% of the interviewees said that their conduct was quite fair. Similarly, it was also questioned as to how was their conduct with mentally retarded child? The conduct of 85% of relatives and 77% of neighbors and other people towards the child was found to be cordial.
- How the mother of the mentally retarded child is being regarded in the society and what is her status? To this, 72% said that the status of the mother is good, whereas 24% consider her as casual and give casual respect.
- Whether the parents take their mentally retarded child with them while going for public or social functions? The answer was : 100% mothers keep their child with them in such events. Further, it was also asked as to whether the parents consider themselves as "guilty" for the mental retardation of the child? The analysis said that 43% respondents do not feel 'guilty' or responsible, whereas 22% consider themselves solely responsible and 35% partially consider themselves responsible or feel guilty.

B) Family information

- Eleven questions were asked about family information. How are the conduct and the understanding of the close family members and whether they have the sense of acceptance towards the mentally retarded child? The analysis revealed that 80% said that the conduct of the family members was quite good and inter-personal relationship was also fair. How much healthy is the atmosphere after the birth of a mentally retarded child in the family? 57% responses said that the atmosphere is quite co-operative. How much co-operative are the family members? To this, 61% of them said that the cooperation is extra ordinarily good.
- How much importance is given to the mentally retarded child during any family function? 47% of them said that it is excellent. Regarding the needs of the child, what is the level of understanding of the family members? To this, 71% said that they possess a good sense of understanding. Whether comparison between a mentally retarded

child and a non-impaired child is done in the family? 80% said that this kind of comparison is always done. How much freedom is there to express personal thoughts in such family? 28% said that there is total freedom. What is the level of dissatisfaction among the family members for not being able to maintain family relations and social calls? To this, 9% said that they have the total discontent, whereas 5% said that they had no such complain, and 86 % said that they have little dissatisfaction.

C) Information about the anxiety for child's future

- In this survey, 7 questions were asked about the anxiety for the child's future. To this question, 88% parents said that they are too worried, 10% parents said that they are 'not particularly worried', whereas 2% said that they are not at all worried.
- Whether in absence of the parents, other family members will look after the child? To this question, 81% answered that they are too worried; whereas 14% said that they are not at all worried and 5% said that they are little worried on this issue.
- The parents were asked as to whether do they wish that their child should be put into a hostel in their absence? 'No' was the answer of 86% Parents and 14% said 'YES'.
- While replying to the question that "so far as financial condition is concerned, are you worried about your child in your absence? 71% parents said that they are too worried, whereas 19% parents said that they are not at all worried and 10% said that they are little worried.

Conclusion

On the basis of the study, some observations which have strikingly emerged are as under:

A) Birth of Mentally Retarded Children in any family leads to mental stress.

B) The intensity of this mental stress largely depends on the acceptance of the child in the family, and the educational, social and financial condition of the family.

C) Comparison of a mentally retarded child with a non-impaired child is always done in the family and the society as well.

D) The centre point of the worries of all the parents is – what would happen to their child in their absence? Who will take care of the child?

E) A hidden worry, which haunts the parent, is about their financial security.

Recommendations

A) An atmosphere in the family should be created so that the mentally retarded child gets acceptance in the family.

B) Soon after the child is diagnosed as mentally retarded, necessary arrangement for parent training should be made.

C) Parents should be provided with the assistance in managing finances so as to ensure savings in such a way that the child gets regular and adequate income in future in the form of interest payable on principal amount.

D) Residential accommodation for the child should be made and that Legal Guardians should be nominated.

E) Services like 'Parent Counselling', guidance and training should be regularly arranged and easily available at the school.

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A Study of Nature of Hearing Impairment of Children Enrolled as Children with Special Needs in Sarva Shiksha Abhiyan in the State of Bihar

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Abstract

Numerous studies are prescribed on the incidence of hearing loss in school going children. The national policy like SSA and inclusive education are just beginning to catch attention and have a long way to go. The majority of hearing impaired in rural areas of India is left out without proper education - few get educated in special schools for students with hearing impairment. The objectives of the said research were to investigate the probable etiology of hearing impairment, to investigate the degree and type of hearing loss, to investigate the status of Middle Ear among the school going population and to study the hearing aids being used. A group of audiologists of AYJNIHH ERC Kolkata assessed 1427 students in age range 3 to 14 years from 10 districts stretched throughout Bihar for a period of 19 days. From the results we can see that sensorineural hearing loss is the greatest factor accounting for about 53% of total number of hearing impairment children. Middle ear and outer ear problems consist of 34-38% of the total number of hearing impaired. The study reveals that nearly 74% of the cases tested have obtained hearing aids. 30% of the cases got extra strong class υ cord hearing aids and 23% of the cases were prescribed strong class υ cord hearing aids.

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Introduction

There are numerous studies, which are recently being conducted on the epidemiology of permanent hearing loss. A study by Mann et al. (1998) screened 1,670 school going children in the age range of 12-14 years for hearing loss. They found that 6.31% of the cases in the urban group were found to have hearing loss as compared to 32.81% of the cases in the rural group. Otitis media was found to be the most common cause of hearing impairment in both urban and rural group accounting for 5.33% and 33.59% respectively. There have been numerous studies in India on the etiology and prevalence on a regional basis. All studies have shown rural population to be more affected than the urban population (Kumar, 1997).

Sarva Shiksha Abhiyan (SSA) is a Government of India's flagship programme launched in 2001 for achievement of Universalization of Elementary Education (UEE) in a time bound Sarva Shiksha Abhiyan manner, as mandated by 86th amendment to the Constitution of India making free and compulsory Education to the children of 6-13 years age group (i.e., those above 6 but below 14 years) a Fundamental Right. One of the provisions of SSA is identification of children with disabilities who are of school going age both within and outside educational system.

Need of the study

Numerous studies are prescribed on the incidence of hearing loss in school going children. The national policy like SSA and inclusive education are just beginning to catch attention and have a long way to go. The majority of hearing impaired in rural areas of India is left out without proper education - few get educated in special schools for students with hearing impairment. This study is an attempt towards drawing up a hearing loss profile of the students attending regular school in rural Bihar as enrolled under SSA. Further an attempt is made towards understanding the quality of life of the students living in rural areas.

Objectives

- To investigate the probable etiology of hearing impairment,
- To investigate the degree and type of hearing loss,
- To investigate the status of Middle Ear among the school going population,
- To study the types of hearing aids being used

Methodology

A group of audiologists of AYJNIHH ERC Kolkata assessed 1427 students in age range 3 to 14 years from 10 districts stretched throughout Bihar for a period of 19 days.

Instrument used

Pure tone Audiometer (Arphi MKIS) and otoscope.

Testing procedure

The students were assessed on one to one basis. First, case report was taken of the child wherein special attention was given to explore the possible etiology of problem – if any. An otoscopic examination was done followed by pure tone audiometry or behavioral observation audiometry.

Rusults

1427 children attended the camps stretched through 10 districts of Bihar for a period of 19 days as shown in Table 1. 86.8% (1239) of the children were found to have hearing impairment. About 64.2% (795 students) were male and about 35.8% (444 students) were females. The students with hearing impairment are classified according to the age range as shown in the table 1.

Table 1. Age wise Percentage of The Assessed Children

Age	Frequency	Percentage
3-5yrs	51	4.16%
6-8 yrs	395	31.88%
9-11 yrs	537	43.34%

The degrees of hearing loss are computed and shown in the following table.2 and table .3

Table 2. Degree wise percentage of loss: Right Ear

Degree of HL (right ear)	Frequency	Percentage
Mild	14	1.12%
Moderate	323	26.06%
Moderately severe	301	24.29%
Severe	306	24.69%

Table 3: Degree wise percentage of loss: Left Ear.

Degree of HL (Left ear)	Frequency	Percentage
Mild	12	0.96%
Moderate	336	27.11%
Moderately severe	310	25.02%
Severe	298	24.05%
Profound	283	22.84%

It has been seen that moderate hearing loss is relatively the frequently occurring hearing loss accounting for 26% of the total population. Most frequently encountered type of hearing loss is sensorineural hearing loss (table.4) accounting for 53% of the total ears having hearing impairment.

Table 4 Type Wise Hearing of Loss.

Type of hearing loss	Frequency	Percentage
Sensorineural	658	53.1
Mixed	279	22.5
Conductive	302	24.3

Otoscopic examination revealed that 65.5% of ears didn't have any abnormality (NAD). Central perforation is the most common problem accounting for 19.6 % of the total ears tested.

Otoscopic examination results

Table 5 : Status of Outer and Middle Ear of Right Ear:

Right ear	Frequency	Percentage
NAD	812	65.53%
Central perforation	243	19.61%
Dull retracted TM	116	9.36%
Wax	41	3.30%
Subtotal perforation	10	0.8%
Discharging	16	1.29%

Table 6: Status of Outer Ear and Middle Ear of Left Ear

Left ear	Frequency	Percentage
NAD	758	61.17%
Central perforation	233	18.80%
Dull retracted TM	98	7.90%
Wax	90	7.26%
Subtotal perforation	45	3.63%
Discharging	15	1.21%

In the case history the prominent etiologies encountered were identified as pus-secretion prematurity, typhoid and hereditary causes. The table-7 shows the etiology according to the report of parents or accompanying individuals.

Table 7: Percentage of Etiologic Factors of the Hearing Loss

Etiology	Frequency	Percentage
Unreported	823	66.42
Pneumonia	11	0.88
Genetic	30	2.42
Injury	18	1.45
Pus	293	23.64
Measles	6	0.4
Prematurity	15	1.2
Typhoid	21	1.69
Chicken pox	12	0.96

30% of the cases got extra strong class v cord hearing aids and 23% of the cases were prescribed strong class v cord hearing aids under ADIP scheme. But a prominent 24.37% of the cases weren't given aids but sent for ENT consultation or referred to AYJNIHH, ERC for further assessment (Table 8).

Table 8 : Types of hearing aids

Hearing Aid	Frequency	Percentage
Mild	23	1.85%
Moderate 'v'	258	20.82%
Strong class 'v'	285	23.00%
Extra strong class 'v'	371	29.9%
No Hearing Aid	302	24.3%

Discussion

From the results we can see that sensorineural hearing loss is the greatest factor accounting for about 53% of total number of hearing impairment children. It is conductive pathology which accounts for 24% of the hearing impaired population. Prevalence of moderate hearing loss (27%) is a prominent thing to be noticed as findings are supported by a comparative study between urban and rural children.

Middle ear and outer ear problems consist of 34-38% of the total number of hearing impaired. Tympanic membrane perforation from central to subtotal consists about 21-23% of the total population, thus indicating the presence of chronic otitis media. The factors may be attributed to overcrowding, inadequate housing, poor hygiene, and passive smoking anecdotally to wood-burning smoke.

In 279 ears diagnosed with mixed hearing loss cases, 1067 cases (38.35%) were diagnosed to have dull and retracted tympanic membrane and in just 47 cases no abnormality was detected. Correlation factor was computed to be.648 for both ears.

However about 7-5 %(21) of mixed hearing loss account for ear drum perforation which could gradually give way sensorineural hearing loss. A statistical evaluation by Kirtane and Merchant have drawn attention to fact that *quiet development of sensorineural hearing loss can occur concomitantly or as sequalae of otitis media.*(Paparella et al.,1972)

Known causes of sensorineural hearing loss such as hereditary deafness and ototoxicity due to systemic drugs would not bias since these conditions cause essentially bilateral and often symmetrical cochlear dysfunction. Paparella et al(1972) hypothesized that the round window membrane permits toxic materials to enter the inner ear and biochemically alter the inner ear fluids, resulting in gradual end-organ dysfunction. There is a growing experimental,

clinical and histopathological evidence to support this view. Various animal studies have conclusively demonstrated the ability of this membrane to serve as a portal. (Schachern et al.,1984).

According to the study there is not much statistical difference between safe and unsafe type CSOM. 66.42% of the subjects could not report the cause of hearing loss. This finding is in support with study by Doris et al (2001) who reports that 81% of the cases cause of hearing loss is known. Various studies alone in western countries have stated that maternal rubella (Doris et al 2004) is thought to be most frequency known cause of hearing loss but in our study none of our subjects reported that maternal rubella is cause of hearing loss.

The study reveals that nearly 74% of the cases tested have obtained hearing aid. Maximum children who attended the camp were of age range 9-11years comprising 43.34% of population. The lowest age of early identification found in the present study is of 3 years comprising of 0.6% of the population. Hence screening camps should focus more on early identification as early management of otitis media could lessen the impact. In our country, where there is high prevalence of COM in young children, the potential hazards of such cumulative sensorineural hearing loss in terms of language and educational impairment are obvious. Examination of etiology of hearing loss in 1239 cases revealed that in 66.5% cases the etiology was unknown. Hence more work should focus on spreading awareness regarding care at prenatal natal and postnatal stages, so that causative factors can be traced and appropriate rehabilitative measures can be taken. Studies estimate that one third children in rural areas suffer from COM, many of them bilaterally. Each child is a potential candidate for the development of sensorineural hearing loss. In India, where there is high prevalence of COM in young children, the potential hazards of such cumulative sensorineural hearing loss in terms of language and educational impairment are obvious. Hearing screening camps are valuable but probably unrepresentative of the population. Hence it has to be coordinated with working of primary health care workers to detect ear disease and spread awareness about hygiene. Recently the government has chalked out a comprehensive programme to provide a level playing ground for the handicapped children of the State. It has decided to start summer education camps with duration of 30 days, exclusively for the handicapped children in 11districts of the state of Bihar. There are only 40 special schools (both private and government) for disabled children in the State and 199 resource teachers as on March 2007 in comparison to 16 resource teachers as on 2005-06. Each camp would have a maximum of 500 students per district.

The pupil-teacher ratio would be 20:1 in each camp. The camps will be mostly for students of classes III, IV and V.

It is felt that deafness prevention programmes should focus rural areas so as to combat the incapacitating handicap. The combined approach of intervention along with a comprehensive management, including resource teachers would help in retention of hearing impaired child in mainstream school thus bridging the gap between school going children of urban and rural area of our country.

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