

Enhancing Communication Skills of Students with Intellectual Disability through Sanyog Software

¹Khushi Bhatia, ²Sudhakar Gajam

*1(Special Educator at International inclusive school (Treamis World School)
Bangalore, India*

*2(Faculty (GF) in Special Education, Dept. of Special Education,
National Institute for the Mentally Handicapped, (NIMH)Secunderabad, India*

ABSTRACT: *The study investigated the effect of Sanyog software on enhancing communication skills among students with Intellectual Disability. The sample consisted of students with mild intellectual disabilities between the age group of 9 to 15 years studying at NIOS class at NIMH. Results of the study revealed that students showed significant improvement in their communication skills after intervention. Wilcoxon test was used to find out significant improvements in communication skills of students before and after the intervention through Sanyog software. Besides showing improvement in communication skills students also showed significant improvement in areas like attention span, concentration, eye hand coordination and ability to choose from options given. The findings of the study revealed that Sanyog software, a form of AAC intervention is very much helpful for students with intellectual disability in improving communication skills. From the study we can conclude that intervention through AAC for students with special needs in special and inclusive schools promotes interaction and independent living skills.*

KEYWORDS: *Communication skills, Students with Intellectual Disability, NIOS, Sanyog software, Alternative augmentative communication*

I. INTRODUCTION

It has been said many times in many ways that communication is the essence of life. One can see it when an individual glances or gestures to share feelings with a family member or uses a microphone to lecture audience. These two major purposes of communication - Socialization and information transfer – can be accompanied by individuals with a wide range of abilities and disabilities not only through natural speech and writing, but also through Augmentative and Alternative Communication (AAC). In recent years AAC, which is the supplement or replacement of natural speech and /or writing, has allowed many individuals with disabilities to more fully realize their potentials and enjoy the essence of life. It is important to note that there is not just one type of AAC. Rather, AAC encompasses a whole range of different activities which includes facial expression, eye pointing, gesture, signing symbols, spelling out a message on a letter board or computer, electronic speech output aids etc. Augmentative Communication is an alternative way to help students and adults with language disorders use expressive language or receptive language. Augmentative communication can be accomplished through assistive technology devices such as computers or hand held devices. Low technology such as picture communication systems can also be used as Augmentative Communication.

We communicate to satisfy our needs which keep on changing from time to time. We need to satisfy our needs, get information, and interact with people and so on. This exchange of information is not possible without a tool which should be common to both speaker and listener. Man invented language for this purpose. Language makes communication easier. There is dynamic relationship between children's language and their needs, regulate their own and other people's behaviour. Children with developmental language or speech disorders frequently benefit from augmentative and alternative communication (AAC) strategies. These children have severe expressive or receptive communication disorders or both which sometimes occur in isolation, or as part of a global developmental disorder, developmental apraxia of speech, autism, Down syndrome, or other types of developmental disabilities may need to use AAC strategies to supplement or enhance their language development. Today, professionals realize that AAC strategies can provide children who have developmental delays with an immediate means of communication; can facilitate expressive and receptive language development until other communication modalities improve(i.e. speech); and can serve as a bridge to future spoken language development (Kangas & Lloyd, 1988 [1]; Silverman 1995) [2]. Sanyog is a vernacular AAC system for the aforementioned segment of Indian population.

The primary aim of the project is to develop Indian Language AAC system.

1.1 Objectives

- To find out the achievement in communication skills among students with mild mental retardation who are taught through Sanyog software.
- To compare the pre and post- test achievement scores in communication skills among students with mild mental retardation who are taught through Sanyog Software.

II. METHODOLOGY

The research design used for the study was one group pre-test posttest design.

2.1 Participants

Three subjects between the age group of 9 to 15 years diagnosed with mild intellectual disability and attending NIOS class at SEC, NIMH were selected for the study.

2.2 Instrument

A checklist was prepared by the researcher for recording the performance of the subjects during the pre and posttest intervention on assessing communication skills. The developed checklist was validated by four professionals in the field of special education and Human development.

2.3 Procedure

A total of twenty sessions of intervention was carried out by the researcher. For conducting the research a separate room was allotted. Pre-test scores were recorded for each student before the intervention. Each student was given 30 minutes of intervention twice a day. One session was in morning and one was in evening. After every session five minute was spent for evaluation and recording of performance of each student. Permission to conduct the experiment was obtained from the school principal with consultation with class teacher; investigator met the parents and explained the purpose and method of study. After consulting parents FACP scores of students were collected from class teacher of NIOS class. On the basis of FACP scores three students were selected as sample for the study. Informed consent was taken from parents, class teacher and school authority.

III. RESULTS

Data was analyzed and interpretation of the results was done using Statistical Package for Social Sciences (SPSS). Mean, Standard Deviation (SD) and Paired t-test was calculated for finding out the statistical significance. The results are discussed in the table below.

Table – 1: Overall Achievement scores of subjects with mild intellectual disability in communication skills taught through Sanyog software

Score of 3 students	Pre test		Post test		Z value
	Mean	SD	Mean	SD	
N = 3	129.00	29.512	200.00	40.286	1.604

Significant at $p < 0.05^*$

Data in table 1 shows the pre and post-test mean scores of the group (3 students), Standard deviation and Wilcoxon score of 3 students together. Pre-test mean for 3 students is 129.0, SD is 29.512. Post-test mean score for 3 students is 200.00 and SD is 40.286. Z value for 3 students is 1.604. The difference between pre and post-test mean scores is 71. To find out whether there is any statistical difference in the mean scores, Wilcoxon signed rank test was conducted. Results showed that calculated value of z is greater than table value. This indicates that the difference in achievement score is significant ($p < 0.05$). The findings of the present study are in concurrence with the studies conducted by RubinaLal (2010) [3] and Jennifer, Ganz and. Simpson (2004) [4] which says that various form of alternative and augmentative communication tools help students with intellectual and developmental disabilities in enhancing their communication skills.

Further the achievement scores of subjects before intervention and after intervention are discussed below.

Table –2: Achievement in communication skills of subjects taught through Sanyog software.

Name of students	Pre-test mean	Post-test mean	Pre-test SD	Post-test SD	Z Value
A	18.111	26.777	11.285	12.507	2.670
L	12.666	20.333	5.477	10.839	2.366
S	13.111	21.000	6.372	7.549	2.524

Significant at $p < 0.05^*$

Table 2 clearly shows difference between the pre and post-test mean scores of each subject. For subject 1 pre-test mean is 18.111 and post-test mean is 26.777. The difference between mean scores is 8.666. Wilcoxon value for child 1 is 2.670 (Z value). The obtained Z value is higher than table value. This indicates that the difference in the pre and post-test achievement is significant at $p < 0.05$. For subject 2 pre-test means score is 12.666 and post-test mean score is 20.333. The difference between both the mean scores is 7.667. The SD of pre-test is 5.477 and SD of post-test is 1.0839. The z value of the student is 2.366, which is greater than table value. This indicates that the difference in the pre and post-test achievement score is significant at $p < 0.05$. For subject 3 pre-test mean score is 13.111 and post-test mean score is 21.000. The difference between the mean score is 7.889. The SD of pre-test is 6.372 and post-test is 7.549. The z value obtained for the student is 2.524. As the calculated value of Z is greater than the table value the difference in the pre and post-test achievement scores is significant at $p < 0.05$. The findings are in agreement/ alignment with study conducted by Rubina Lal (2010) [3] and Jennifer B. Ganz and Richard L. Simpson (2004) [4] which shows that as a result of intervention through various augmentative and alternative communication tools /devices each child demonstrate improvement in communication skills individually.

IV. DISCUSSION

The rate of learning during the sessions was compared and it was observed that all the subjects showed steady improvement in all sessions. There is no decline in their performance. Hence, it can be concluded that students need continuous and structured intervention on Sanyog software for enhancing their communication skills. As a result of intervention students not only learned specific skills but associated learning also took place. Associated learning took place in areas of general skills which include skills such as student's fine motor abilities, attention span, ability to filter information, ability to make choices from many given options, student's sitting posture etc. In the area of communication students also showed improvement in receptive and expressive communication – such as following instructions both related and unrelated, expressing feelings through gesture, vocalization and small sentences etc. In computer skills, although all students had some exposure this intervention programme helped them to be more efficient. Therefore, we can conclude that lots of associated learning took place along with domain wise learning among students through Sanyog software. Continuous and planned intervention is definitely going to help students with Intellectual Disabilities in enhancing their communication skills.

V. CONCLUSION

For individuals with Intellectual Disabilities, chronological age is often linked to language development level and together these two factors may influence the outcomes of AAC interventions in complex ways. The majority of research about individuals with Intellectual Disabilities who employ AAC are at least school aged. There has been little empirical investigation about the use of AAC intervention at very young age. The more significant the developmental delay, the more important it may be to initiate intervention early in childhood to ensure steady developmental progress (Shonk off, Hauser-Cram, Krauss, & Upshur, 1992) [5]. For children, education must foster acquisition of not only academic skills, but also language and communication, socialization and adaptive behaviour. Practices in education of children with Intellectual Disabilities emphasize need based use of AAC strategies to facilitate communication and social participation. The result of the study conforms to above findings. AAC training and usage were effective in enhancing language and communication and also social behaviour of children with Intellectual disabilities.

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