



# PLAY WAY BASED ACADEMIC INTERVENTION ON PRE-ARITHMETIC SKILLS OF STUDENTS WITH INTELLECTUAL DISABILITY

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## ABSTRACT

*The study under investigation is an experimental one, which aims to find out the effectiveness of Play Way Based Academic Intervention on Pre-Arithmetic skills of students with Moderate level of Intellectual Disability. Pretest – Posttest Control Groups Design was used for the study. For this purpose, a sample of 32 students were drawn from a special school. Children having moderate intellectual disability were the sample of the study where 16 students were in the experimental group and 16 students in the Control group. The experimental group students were taught through the Play Way Based Academic Intervention and the control group students were taught through the Conventional Method used for Pre-Arithmetic Skills. Pre-arithmetic Skills selected were Big and Small Identification, Long and Short Identification, More and Less Identification and Shape Identification. Standardized tools were administered for collecting data from the participants. For the analysis of the collected data, the investigator used descriptive statistics like Mean, median, mode, standard deviation and Mean Difference Analysis. The study reveals that there exists significant difference between post test scores of Experimental and Control groups with respect to Pre-Arithmetic skills. Students in the experimental group show significantly better performance in terms of Pre-Arithmetic Skills than that of students in the Control group as higher mean scores are attached with them.*

**KEY WORDS:** Intellectual Disability, Academic Intervention, Pre-Arithmetic skills, Play way method, Experimental approach.

Play is a natural activity which arouses enthusiasm among participants and motivate them to engage whole heartedly in the activity without any external compulsion. Play can be considered as an optimistic activity which provides a positive space to employ vitality level of kids in a creative manner which boosts up their psychosomatic instincts. Attraction towards joyful activities and curiosity towards acquisition of new ideas can be considered as two inborn predispositions of human beings. Play can be considered as a methodology which works on the stimulation of these pleasurable innate natures of humans (Khanna & Anuradha, 1999).

Play Way Method is a systematic method which works under the principle of emancipation of ideas through pleasurable and passionate illustrations. Play offers a favorable environment to children to exhibit their interests, skills and potentials without any embarrassment. Play can be considered as a primary designation which carves the performance of child in future (Nestor & Moser, 2018). Play yard is a platform for every child to enjoy at optimum level and express his/her ideas freely without the control of any extraneous factors. Play offers so many prospects to attain different physical and mental abilities which are necessary to deal effectively with future life requirements. Play can be considered

as a platform of enjoyments which equip children to handle success and failure in a sportive spirit (Nicolopoulou, 1993). The Play Way Methodology is based on the insight that ‘play’ is the natural instinct of children; that every child possesses the same potential at birth, and it is the appropriate educational environment that shapes the growth of the child. Play stimulates the energy and potentials in man and arouses interest and ability to cooperate with others (Özokcu et al. (2017).

Pre-arithmetic skills are the skills like discrimination of objects based upon size, shape, quantity, length etc. (Pendergast, et.al, 2017). In the present study, Play Way Based Academic Interventions was used to enhance the level of pre-arithmetic skills among students with intellectual disability.

Education of children with Intellectual disability is a perplexed matter of debate. But it is a fact that if an academic intervention is designed exclusively on the basis of their individual needs, then such an activity will remove the academic barriers in front of them (Beirne-Smith, Parton & Kim, 2006). The academic system should be free from the biased and disabling view of intellectually disabled students as ‘a burden or liability’. Instead, it must recognize them as ‘productive members’ of the society. The



educational and social institutions must enlarge themselves responsively and must undertake that it is their responsibility to include all children into its texture and support all in their pursuit of self-development and growth (Kick et al, 2000).

An Activity Oriented Approach of learning will definitely be an effective method of teaching in case of children with Intellectual Disability since it is a known and proven fact that practice oriented academic transaction will arouse interest and better performance among the children. Teachers must be skilled and trained enough to deal with all levels of Intellectual disability and a level based practical oriented approach will definitely add brightness to academic skills of the mentally retarded.

### NEED AND SIGNIFICANCE OF THE STUDY

Different types of disabilities or inabilities act as a stumbling block on the way of these underachievers and deny access for them to have better accomplishments. Children with Intellectual Disability constitute a section that faces this plight to an extent, perhaps, larger than most other disadvantaged groups. It naturally follows that they need strong scaffolding in order to come up and acquire optimal competency. The study is socially relevant since it ensures the active participation of children with Intellectual disability in the social life of the community. The dynamic process of this interaction with a previously marginal group of children, in turn, educates the society and brings forth more sensitized sophistications in the academic planning and social decision making.

### OBJECTIVES OF THE STUDY

Objectives of the present study are:

- To study whether there exists any significant difference between the mean posttest scores of pre-arithmetic skills of experimental and control groups with regard to the skill of big and small identification.
- To study whether there exists any significant difference between the mean posttest scores of pre-arithmetic skills of experimental and control groups with regard to the skill of long and short identification.
- To study whether there exists any significant difference between the mean posttest scores of pre-arithmetic skills of experimental and control groups with regard to the skill of more and less identification.
- To study whether there exists any significant difference between the mean posttest scores of pre-arithmetic skills of experimental and control groups with regard to skill of shape identification.
- To study whether there exists any significant difference between the mean posttest scores

of experimental and control groups with regard to overall pre-arithmetic skills.

### HYPOTHESES OF THE STUDY

Following were the hypotheses set for the study.

- There will be no significant difference between the mean Posttest scores of pre-arithmetic skills of Experimental and Control groups with regard to skill of big and small Identification.
- There will be no significant difference between the mean Posttest scores of pre-arithmetic skills of Experimental and Control groups with regard to skill of Long and short Identification.
- There will be no significant difference between the mean Posttest scores of pre-arithmetic skills of Experimental and Control groups with regard to skill of more and less Identification.
- There will be no significant difference between the mean Posttest scores of pre-arithmetic skills of Experimental and Control groups with regard to skill of shape Identification.
- There will be no significant difference between the mean Posttest scores of Experimental and Control groups with regard to overall pre-arithmetic skills.

### METHOD

The present study comes under the purview of experimental study and it has been conducted by employing the Quasi Experimental Design. The design used in the present study was the Non-Equivalent Groups Pre-test-Post-test Control Groups Design.

#### *Participants of the Study*

For the present study, a sample of 32 students were drawn from a special school. Students with moderate level of intellectual disability were the sample of the study where 16 students were in the experimental group and 16 students, in the Control group. Age group of the students were in between 13-15. The experimental group students were taught through the Play Way Based Academic Intervention and the control group students were taught through conventional method of teaching used for students with Intellectual Disability.

#### *Tools and Learning Materials Used*

Pre-Arithmetic Skill Assessment Test developed by Hameed and Aiswarya (2018) was used as the tool for data collection. Play Way Based Academic Intervention modules for each skill were prepared and used.

#### *Statistical Techniques Used for Analysis*

For the analysis of the collected data, the investigator used descriptive statistics like Mean, Median, Mode, Standard Deviation etc. Mean Difference analysis was done using paired sample student's t test to study whether there exists any



significant difference between the mean posttest scores of experimental and control groups with regard to pre-arithmetic skills.

### RESULTS AND DISCUSSION

Summary of Mean Difference Analysis in case of pre-arithmetic skills are summarized and discussed in this section

Data and results of the comparison of post test scores of experimental and control groups with respect to the skill of Big and small identification are presented in Table 1.

**Table 1**

**Data and Results of the Comparison of Post Test Scores of Experimental and Control Groups with Respect to the Skill of Big and Small Identification**

Sl. No.	Groups	N	Mean	SD	t- value
1.	Experimental Group	16	2.56	0.51	
2.	Control group	16	2.06	0.44	3.16

From Table 1, the obtained t value (3.16) was found to be significant at 0.01 level. The results depicted that there exists significant difference between the mean post test scores of experimental and control groups with respect to the skill of big and small identification.

Data and results of the comparison of post test scores of Experimental and control groups with respect to skill of long and short identification are presented in Table 2.

**Table 2**

**Data and Results of the Comparison of Post Test Scores of Experimental and Control Groups with Respect to the Skill of Long and Short Identification**

Sl. No.	Groups	N	Mean	SD	t- value
1.	Experimental Group	16	2.25	0.44	
2.	Control group	16	1.81	0.40	3.41

Table 2 shows that the obtained t value (3.41) was found to be significant at 0.01 level. The results further underlined that there exists significant difference between the mean post test scores of experimental and control groups with respect to the skill of long and short identification.

Data and results of the comparison of post test scores of Experimental and control groups with respect to skill of More and Less Identification are presented in Table 3.

**Table 3**

**Data and Results of the Comparison of Post Test Scores of Experimental and Control Groups with Respect to the Skill of More and Less Identification**

Sl. No.	Groups	N	Mean	SD	t- value
1.	Experimental Group	16	2.68	0.47	
2.	Control group	16	2.25	0.57	2.40

From Table 3, the obtained t value (2.40) was found to be significant at 0.05 level. The result shows that there exists significant difference between the mean post test scores of experimental and control groups with skill of More and Less Identification.

Data and results of the comparison of post test scores of Experimental and control groups with respect to skill of shape identification are presented in Table 4.

**Table 4**

**Data and Results of the Comparison of Post Test Scores of Experimental and Control Groups with Respect to the Skill of Shape Identification**

Sl. No.	Groups	N	Mean	SD	t- value
1.	Experimental Group	16	2.87	0.34	
2.	Control group	16	2.37	0.61	2.44

Table 4 presents the comparison of post test scores of Experimental and control groups with respect to skill of shape identification. From the Table, the obtained t value (2.44) was found to be significant at 0.05 level. The results clarified that there exists significant difference between the mean post test scores of

experimental and control groups with respect to the skill of Shape Identification.



### Educational Implications of the Study

Educational implications derived from the study are as follows.

- Pre reading performances of students with Intellectual disability can be improved using different level based academic interventions.
- All academic interventions provided to children with Intellectual Disability have to be level based and need based.
- Play way method provide students an opportunity to enjoy learning through creative activities and find the learning process as an enjoyable activity
- Learning process must provide chances for repeated practice which in turn helps students with Intellectual Disability to register and retain the information for a long time.
- Considering different factors in a classroom; teachers should experiment innovative instructional procedures which presents learning as a process which is as natural and realistic as possible.

### CONCLUSIONS

Major aim of any educational intervention must be equipping each learner to be independent and self-sufficient. Children with Intellectual Disability are also a group who deserve to come up to the mainstream of the society through educational empowerment. Students with Intellectual disability differ among themselves, with each one having his/her own characteristics in various aspects. Individual differences and uniqueness in efficiency level are clear and obvious among children with disabilities, particularly in children with intellectual disabilities. So many studies (Chung & Tam, 2005; Podell et al, 1992; Milo et al ,2004) indicate that interventions for children with Intellectual disability are effective enough to enhance their mathematical potential.

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