Research Paper Education

Efficacy of Learning Resources in Arithmetic Skills for Children with Mild Intellectual Disability at Pre -Primary Level.

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Introduction

In everyday life, children with intellectual disability must be given opportunities to learn preliminary arithmetic concepts. As children become better acquainted with the arithmetic concepts in their everyday life experiences, they must be gradually helped to build up a good foundation for cognitive development. Through a variety of activities such as hands-on experience and play, they were able to grasp basic mathematical concepts. These activities and experiences are essential for children to develop their interest, positive attitude, necessary communication skills and thinking abilities for learning mathematics. Achievement of basic arithmetical concepts at pre-primary level is essential for the acquisition of time concept, money transaction skills, and measurements.

Hence an attempt is made on this direction to analyse the effect of learning resourcesin Arithmetic Skills for Children with Mild Intellectual Disability at Pre -Primary Level. Thestudy is carried out with hundred samples. The samples were selected using purposivesampling technique. Manual was prepared by the investigator.

This manual helped parents and teachers to gain an insight into what, when and how to teach their children at pre- primary level. The intervention was given for a period of six months using the developed manual. As a result it was found out that the children with mild intellectual disability were able to acquire the arithmetic skills.

Children with Mild intellectual disabilities need to be taught with the help of methods and learning resources that are simple, concrete, practical and that which provide systematic experiences. Learning resources used for children with Mild intellectual disabilities include concrete objects, models, pictures, simplified text books, manuals, flash cards, tape-recorder, charts, audio-visual aids and technological innovations such as calculators, word processor, spell checkers and many other appliances which are being added each day.

Need for the Study

Well established structured curriculum frame work is essential for children with Mild intellectual disability at pre- primary level.It is important to ensure that all children with intellectual disability have equal opportunities to participate in rich learning experience that aim at promoting holistic development and lifelong learning. Six learning areas have been identified to be included in the curriculum frame work of children with intellectual disability to provide a strong base for learning experiences. Though the need for a structured curriculum frame work has been emphasized in many research studies to date in India, there is no uniform framework for this population of children who constitute 2 to 3 percent of the total population. Though today Inclusive Education is a slogan even for those with intellectual disability, not many of these children acquires basic academic skills through Inclusive Education. They need a curriculum that needs to be adapted from the regular stream to help them to bring out their innate potentials and pave the way for adapting themselves as contributing members of the society. The parents need to be partners with the educators in the process of education of their children with Intellectual Disability.

Objectives of the study

The major objectives of the study are to:-

- Identify children with Mild Intellectual Disability belonging to the age group of 3 to 8 years enrolled in special school.
- Explore the current level of Arithmetic skills in children with Mild Intellectual Disability
- Develop and Use the Learning Resources in the form of textbook for Arithmetic skills.
- Study the Efficacy of developed textbooks among the children with Mild Intellectual Disability.
- Study the influence of Age, Gender, and Locality, in the acquisition of Arithmetic skills.

Hypothesis

1. There is no significant difference in the acquisition of Arithmetic skills before and after using learning resources among children with Mild Intellectual Disability..
2. There is no significant difference in the acquisition of Arithmetic skills before and after using learning resources among children with Mild Intellectual Disability with respect to Age,Gender,and Locality.

Methodology:-

The study is to find out the "**Efficacy of Learning Resources in Arithmetic Skills for Children with Mild Intellectual Disability at Pre-Primary Level".** Quasi experimental method was followed to get the required data within a particular time.

The manual comprised of skills ranging from lower order of arithmetic skills such as Big and small, long and short etc. to the higher order of skills like Number, Time, Coin and Currency. All the skills comprised of various activities and thereby skills were developed.

The manual was introduced in the classroom for a period of six months. The knowledge of skills before and after the introduction of learning resources was measured and it is analysed.

Results and Discussion

Table 1

Pre and Post Mean Scores of Children with Mild Intellectual Disabilityon Arithmetic Skills With Respect To Age.

Variables	Levels	Testing	N	Df	Mean	S.D	t-value

Age	3-5 years	Pre test	27	26	23.15	3.23	55.83**
		Post test	27	26	70.56	3.00	
	6-8 years	Pre test	13	12	21.09	3.20	44.62**
		Post test	13	12	71.13	4.31	

*Significant at 0.05 level

The above table portrays that the't' value of the samples of the two age groups namely 3-5years (t=55.83) and 6-8years(t= 44.62) indicated significant difference between pre and post means at 0.05 level for the arithmetic skills. Hence the Null Hypothesis stated as "There is no significant difference in the acquisition of arithmetic skills before and after using learning resources among children with Mild Intellectual Disability with respect to Age" is rejected.. This shows that the Learning Resources made a significant influence in the acquisition of arithmetic skills of children with different age groups. The result coincides with Mastro Pieri and Scruggs (2003) who had highlighted that direct intervention and practice help children with Intellectual Disability to acquire arithmetic skills.

Table 2
Pre and Post Mean Scores of Children with Mild IntellectualDisability on Arithmetic Skills With Respect To Gender

Variables	Levels	Testing	N	Df	Mean	S.D	t-value
Gender	Boys	Pre test	25	24	22.14	2.67	72.76**
		Post test	25	24	71.92	2.14	
	Girls	Pre test	25	24	21.89	2.97	67.56**
		Post test	25	24	70.78	1.89	

*Significant at 0.05 level

The t value of the samples presented in the table indicated a significant difference between pre and post scores of Boys (t=72.76) and Girls (t= 67.56) at 0.05 level in arithmetic skills. Hence the Null Hypothesis stated as "There is no significant difference in the acquisition of Arithmetic skills before and after using learning resources among children with Mild Intellectual Disability with respect to Gender" is rejected. Learning Resources made a significant impact upon language skills of Children with Mild Intellectual Disability irrespective of Gender. The result coincides with the study of Singh andAgarwal (2013)that computer games as Learning Resources produced greater gain in the acquisition of Mathematical concepts among children with Mental Retardation.

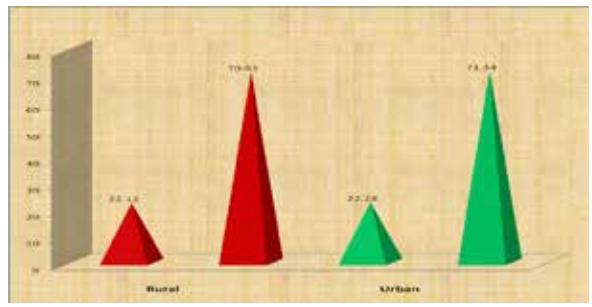
Table 3
Pre and Post Mean Scores of Children with Mild Intellectual Disabilityon Arithmetic Skills With Respect To Locality

Variables	Levels	Testing	N	Df	Mean	S.D	t-value
Locality	Rural	Pre test	25	24	22.12	3.62	48.11**
		Post test	25	24	70.93	3.79	
	Urban	Pre test	25	24	22.28	3.12	56.54**
		Post test	25	24	71.34	3.22	

*Significant at 0.05 level

The t value of the sample indicted a significant difference between pre and post mean scores of Children with Intellectual Disability belonging to rural area (t=48.11) and urban area (t= 56.54) at 0.05 level. Therefore the Null Hypothesis stated as "There is no significant difference in the acquisition of Arithmetic skills before and after using learning resources among children with Mild Intellectual Disability with respect to locality" is rejected. Portraying that Locality had significant influence of Learning Resources upon the impact of Learning Resources in acquisition of Arithmetic skills. This is supported by the study conducted by Mackay (2002) who found out that visual attention in Arithmetic skills increased when the number of stimuli was increased.

Figure 1
Pre and Post Mean Scores on Arithmetic Skills with Respect to Locality.



CONCLUSION

The care and concern for individuals having disabilities have been a component of Indian heritage from time immemorial. As far as the education of children with special needs is concerned, education should be a mandatory to bring about change in the individuals with special needs. This study had attempted to create awareness among the people who work for the disabled who will in turn bring out the maximum potentials of the children with Intellectual Disability at the Pre Primary Level.

The long cherished dream of parent of children with Intellectual Disability had come true through this manual. This manual helped parents to gain an insight into what, when and how to teach their children at pre- primary level. It enabled parents to set standards of achievement for their children with special needs. The activities mentioned in the manual facilitated the parents as how to enable their children to generalize the concepts that they had learnt in their day to day life.

Thus this Manual paved the way for comprehension, expression, communication and reasoning. In the long run this manual could be a strong base in developing prescribed text books for children with intellectual disability in India. Since it stands evidence that the impact of Learning Resources in the acquisition of Language and Arithmetic skills to children with Intellectual Disability.