



## **A study on learning ability in elementary school mathematics based on ABL (Activity Based Learning) approach**

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### **Abstract**

In the present study an investigation on the ABL (Activity Based Learning) on the learning abilities of students in mathematics was tested. The sample consisted of 1042 students from 4<sup>th</sup> and 5<sup>th</sup> standard. A survey method was adopted. The results clearly indicate that the ABL (Activity Based Learning) method is suited to the students in understanding mathematical concepts at the school level.

**Keywords :** Survey Method, Activity-Based learning, Elementary Education and Learning Ability

### **Introduction**

Teaching – Learning Mathematics is both a challenging and stimulating endeavor because there are significant changes taking place in mathematics educational. New insights, new materials, and of course, children who are growing up in a very different kind of society, dictate a different approach to teaching – learning. Mathematics is important in everyday life, science and technology, medicine, economy in public decision-making etc.

“Activity Based Learning as the name suggests is a process whereby learners are actively engaged in the learning process, rather than “passively” absorbing lectures. It is based on the core premise that learning should be based on doing some hands-on experiments and activities rather than just listening to lessons only. Activity Based Learning involves reading, writing, discussion, practical activities, engagement in solving problems, analysis, synthesis, and evaluation. Active learning is also defined as any strategy that involves students in doing things and thinking about the things they are doing” (Bonwell and Eison, 1991). If a child is given an opportunity to

explore the learning environment by themselves and provided an optimum learning environment then learning becomes joyful and long lasting (Wikipedia, 2012).

Activity Based methods of teaching - learning has become a trend in teaching – learning particularly at the Elementary School Level. Activities incorporated in lessons have proved to be effective tools in an educational environment. We can use these activities to follow lessons in several subject areas.

The teaching-learning process is the heart of education. According to Khanzode (1995), previously teaching meant nothing more than giving information and imparting knowledge.

Activity Based Learning (ABL) as defined by Prince (2004) is a learning method in which students are engaged in the learning processes. In Activity based learning (ABL) teaching method, in the words of Harfield *et al.* (2007) “students actively participate in the learning experience rather than sit as passive listeners”. Learning activities if based on real life experience” help learners to transform knowledge or information into their personal knowledge which they can

apply in different situations (Edward, 2001). Harfield *et al.* (2007) by quoting Prince (2004) say that the active learning method is different from the traditional method of teaching on two points. First, active role of students and second, collaboration among students. Suydam *et al.* (1977) define activity based learning as the learning process in which “student is actively involved in doing or in seeing something done.”

Activity Based Learning (ABL) is one of the latest trends in education and mathematics teaching. The basis of Activity based learning method is skill development. It considers 663 skills to be developed at the school level. The word activity suggests that something is active. Learning takes place all the time when our senses are activated, sometimes only one or two senses may be used. The greater the number of senses, as a rule, the better is the quality of learning. John Dewey said, “We learn by doing and reflecting on what we do”.

ABL ensures that each and every child participates fully in each activity. The gap between the students and the teacher is lessened and hence the teacher gets an opportunity to act as a facilitator rather than a task master. In the classroom the teacher can spend more time with the slow- learners. Pupils learn at their own pace. Even if a pupil is absent on a particular day s/he can continue from the place where s/he left after he comes back. Students are given full freedom to select the learning experiences on their own. Self-learning, group- learning and peer-group teaching are encouraged.

### **Need and Scope of the study**

According to Dhand (1995) “Child-centered educational aids to faster self learning and allows a child to study according to his/her aptitude and skill. Activities in each milestone include games, rhymes, drawing and songs to teach a letter or a word, or understand a concept”.

The investigator has selected the effectiveness of ABL method at elementary Mathematics level. The NCERT Guidelines on science teaching (1990), NPE (1986) and report of the Education Commission (1964 - 66) have also insisted on development of skills in children. It is a well-established fact that ABL helps to achieve the educational goals. The present study tries to establish the effectiveness of ABL.

### **Objectives of the study**

1. To develop and validate a research tool to measure the Activity Based Learning (ABL) – Student’s Scale.
2. To find out whether there is any significant difference between effectiveness of ABL in elementary school students learning ability and the background variables (i) School (ii) Gender (iii) Type (iv) Union (v) Class (vi) Locality.
3. To find out the effectiveness of ABL in elementary school students teaching learning process.
4. To evaluate the use of ABL method of teaching mathematics in elementary school.

### **Methodology**

The background variables considered for the study with reference to learners of elementary school education, were (i) School (ii) Gender (iii) Type (iv) Union (v) Class (vi) Locality. This study aimed at investigating the effect of independent variables on the dependent variables. The primary attempt is to identify the strength and weaknesses of the above mentioned variables in each school selected for the present study.

In this study, the population refers to prospective School Teachers and Students in Elementary and Middle Schools in Gobi Educational District of Erode. The Gobi educational district includes to Gobi and T.N. Palayam union. Totally 131 schools, 551 teachers, 5476 of government, aided and municipality schools. A sample is a small

**Table - 1. Showing the dimension of learning ability in student approach and the variables**

Variables	Types	Sample size	Mean	SD	t test	F test	Level of Significant
<b>School</b>	Aided	161	70.53	2.89	0.443	2.476	Not Significant
	Government	806	69.76	5.05			
	Municipal	75	70.52	2.89			
<b>Gender</b>	Male	479	70.00	4.76		1.132	Significant at 1 % Level
	Female	563	69.87	4.57			
<b>Type</b>	Elementary	668	70.06	4.34	3.485	Not Significant	
	Middle	374	69.71	5.17			
<b>Union</b>	Gobi	592	69.50	5.61	1.063	Significant	
	T.N Palayam	450	70.51	2.88			
<b>Class</b>	4 <sup>th</sup> Standard	520	70.09	4.68	1.732	Not Significant	
	5 <sup>th</sup> Standard	522	69.78	4.63			
<b>Locality</b>	Rural	850	69.81	4.98	1.732	Not Significant	
	Urban	192	70.46	2.79			

proportion of the population selected for observation and analysis. Here the sample consists of 160 Teachers and 1042 Students studying in Elementary and Middle Schools in Gobi Educational District in 65 different schools like as 53 government, 5 municipality and 7 aided schools. Here the investigator has followed simple random sampling technique.

Activity Based Learning (ABL) – Student’s Scale and Some text materials for teaching mathematics concepts have been chosen from the prescribed text book of class 1 to 5 was also used. Description of the Activity Based Learning (ABL) for students is a self-report which measures the ways in four dimensions, that is, Learning activity, Student activity, Teacher-Student relationship and Evaluation. This inventory has already been developed and validated by the Experts. To ensure suitability, the investigator has modified and validated it for this study.

The data collected through the use of various tools mentioned above were analysed by using appropriate methods of statistical methods (Mean, Standard deviation, ‘t’-test and F-test (ANOVA)). In order to support the quantitative interpretation with adequate details, a qualitative

analysis was done with the available information collected through suggestions.

**Findings**

Learning ability of the students in ABL using the background variables school, gender, locality and the class does not vary, whereas it varies in the union. It shows that the urban areas have more awareness than rural areas.

The classroom teaching should be made joyful through activity based strategies.

Cooperative learning creates an environment that engage students in their own learning in meaningful ways.

**Conclusion**

By adopting Activity Based Learning (ABL) method, the performance strategies of students in spatial visualisation, understanding of concepts, mathematical reasoning, communication, creativity and problem solving have improved significantly. The improvement is significant in Urban areas.

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