

## SELF DIRECTED LEARNING IN MATHEMATICS AT SECONDARY LEVEL

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### ABSTRACT

*The main objective of the study was to identify the self-directed learning and traditional learning in Mathematics at secondary level. An experimental research study was conducted to check the effectiveness of self-directed learning. For this purpose, the pretest-posttest Equivalent Group Design was used in the study. All students studying in 9<sup>th</sup> class district Swabi were considered the population of the study. GHSS Chanai was randomly selected as a sample of the study. Sixty students of 9<sup>th</sup> class of GHSS Chanai were given pre-test and then they were divided into two groups i-e experimental and control groups. A posttest was administered after 6 weeks of the treatment period. The difference between the Scores of pre-test and posttest of both groups were calculated by applying t-test and analysis of variance. Obtained data was analyzed, interpreted in tabular form. It was concluded that self-directed learning techniques was more effective as traditional learning of Mathematics.*

**Keywords:** SDL, mathematics, learning,

### INTRODUCTION

Teaching technology is subsystem of educational technology which systemize the process of teaching and learning. For effective teaching only skills are not required but require that how these skills will be use. The teacher applied these skills like good technician. In this sense, teaching must be regarded as a technology that a teacher should try to know well if he wishes to be successful in his teaching job. It will be technical knowledge if the task require reasonable economy, less time and greater efficiency. If a teacher can teach well with less efforts and the outcome of student are maximum then it will be effective technology. (Uma-mangal,2009)

Technology offers individualized curriculum according to the needs of learners. They can express their idea more openly. Technology decrease absenteeism and motivate the student to continue their education. The learners who use technology regularly take pride in their work, have greater confidence in their abilities, and develop higher levels of self esteem. (Daniel,2006)

There is different teaching technology in which self directed learning strategies are most economical. Self directed learning is learners in which the leavers learn the content without teacher and make more

efforts. It will be a great and marvelous achievement if teachers make their students to learn the desired things. If self study is picked up by the learners then the objectives of the learning will be automatically achieved. Self directed learning is suitable way of learning for every subject and with the help of this method the students utilize their leisure time. (Poul.j , 1979)

Self directed learning are learning in which students are engaging in thinking and practicing on the borders of their knowledge. Challenging students take risks, to apply knowledge, to adopt new understanding, to work in context and to experience the thrill of being discovers. All students can be challenged at their own level. It is not only target for intelligent student. Students like to repeat those part of the lesson on which they have full command. (capel,s, 2001).

It is great credit for teacher to run the student on the track of self directed learning. To achieve this goal, lots of things have to come together. Students need to behave well and want to do good work the students have to learn to be decision makers. They involved in work which they have to do. Because they want to do it not because of teacher stress. They have to know what they want to achieve. They should want to conduct themselves well in classes and to treat each other with respect, because it feels right to them. Students need to be confident about their own decision making they need to know the purpose of task (Lyn Overall,2006)

If an individual want to learn something it is not necessary to wait for teacher and formalities of classroom. He may directly learn from books and experiences. Self study may help him to achieve the target. Learning is purely one sided activity needing no interaction. (Uma-mangal:2009)

If self directed learning the learners ask different questions from teacher on which the learners are in doubt and the question are discuss to get more information. The concept of 'learning to learn' is emphasized. Self learning provide base for creative learning. The objectives of the learning process is to learn about the sources of learning and the method to use them creatively. Learning sources can be classified into two categories.

- Organized Learning Sources.
- Unorganized Learning Sources.

Organized learning sources that present learning materials in on organized way. For example, Newspapers, Magazines and books. We frequently use them for learning.

Unorganized learning sources are such sources that are casual in nature and are not organized. They include leaflets, posters, banners, and wall writing etc. The major tasks of the creative learning system is to prepare children to make use of both organized and unorganized learning sources. The learner have to train the children to use these leaning materials. (Prakash,2007)

In traditional learning, knowledge can be transfer when learners decontextualized concept. Only teachers are provider of information to learners and the learners are information receivers Learning is a behavioristic endeavor learners are like blank slates waiting to be written upon. Knowledge can be obtain only form context with the help of teacher only. The success of this method depend only on the hardwork and sincerity of teachers. This method requires the use of various teaching skills. In this method the teacher depended too much on verbal exposition. The pupil only hears and forgets. The students through this method physically present and looking at the teacher, does not pay attention; he daydreams. The teacher stress to remember the lesson by punishment. Punishment play an important role in education. (Dawson,2005)

## RESEARCH METHODOLOGY

The purpose of this study to check the effectiveness of self directed learning in Mathematics at secondary level. To test the effectiveness of self directed learning in Mathematics the pre-test post-test

control Group Design was used for the treatment of the data. The students of 9<sup>th</sup> class of District Swabi were considered the population of the study. There was sixty student which divided into two equivalent groups i.e Experimental group and control group. To check the present ability of the students of both groups pretest is given to solve. After treatment to experimental group's student the posttest was administered after 6 weeks to measure the retention level of both groups. To know the significance of difference at 0.05 level the t-test were applied and obtained data was analyzed and interpreted and found the result that self directed learning technique was effective in Mathematics at secondary level.

### Population and sample

The students studying at secondary level was the population of this study. The students of Government Higher Secondary school Chanai, Khyber Pakhtunkhwa (Pakistan) were taken as sample. This sample consist of sixty students which were divided into two groups i.e. The experimental group and the control group. Two teachers of Mathematics of equal experiences and equal qualification were selected for teaching. Experimental group was taught by self directed learning while control group was taught by traditional method.

### Research Instruments

Pre-test and post test were review by two subject specialist and then the pretest was given to both groups to solve. At the end of treatment, the post test was administered to both groups. The post test was given to solve for measure the achievement of the students.

### Data Collection

The experiment continued for three weeks and after the ending of treatment, post test was given to solve. The scores of both groups of pretest and post test were tabulated.

### Analysis of Data

Mean standard deviation, standard error and t-value were calculated for pre-test and post test of both groups. The significance of difference of both groups was tested at 0.05 levels by t-test.

### CONCLUSIONS

Using statistical analysis and findings of the study the conclusions drawn were as under.

- I. Self directed learning plays important role in teaching of Mathematics at secondary level.
- II. The academic achievement of students in the self directed learning was better than that of traditional methods.
- III. Using self directed learning as a teaching technique for Mathematics is more effective and suitable as compared to traditional learning methods.
- IV. The students who treated by self-directed learning method; retain the learning for longer duration.
- V. High achievers learnt Mathematics by both methods but low achievers can learn by self directed learning.

### RECOMMENDATIONS

In the light of conclusions and findings of study the recommendations are given below.

1. The teachers of Mathematics require a great deal of training in self directed learning of teaching Mathematics. For this purpose it is very necessary that every school should be

- provided with the practice book of Mathematics. Moreover the arrangement for seminars, speeches, and conferences on self-directed learning method should be held..
2. Textbook of Mathematics contain examples before exercise which is use in the method of self directed learning so it is recommended for teachers to adopt self directed learning method for teaching of Mathematics.
  3. Separate textbooks of Mathematics should be adopted for weaker students in which those chapters are included which are easily solved by self-directed learning methods.
  4. Individual differences of weaker students in Mathematics should be reduced by applying self-directed learning method.
  5. The interest of student should be increase in self-directed learning method in Mathematics by the teacher of Mathematics.
  6. Mathematics is subject in which self practices are more helpful therefore the student should adopt this method in this subject.

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