

Research Paper

Education



The Effect of Group Tutorials Teaching Strategy of Achievement in Mathematics of Ninth Standard Students

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ABSTRACT

The concern about improving the outcome of mathematics instructions requires that concerted efforts be made to find out tutorial teaching strategy that can be used and operated upon in order to improve the quality of secondary school students in mathematics. Hence, this study investigated the effect of group tutorials teaching strategy on students' achievement in mathematics. The research design is quasi-experimental design. The sample consisted of 60 students assigned to experimental group and control group. Mathematics Achievement Test (MAT) was constructed, validated, and used for the collection of relevant data. The data collected was analyzed using 't' test. The results of the study revealed that there was a significant difference in the level of achievement of students of the treatment group. The experimental group performed better than the control group.

Keywords : Group Tutorials, Teaching Strategy, Achievement

1. INTRODUCTION :

Education is a process of human enlightenment and empowerment for the achievement of a better quality of life. In India the quality improvement of mathematics education is the greater need of today the quality of education can be measured through achievement. Tutorial strategy is considered both as autocratic and permissive type of teaching. It is generally considered to be one of the most valuable educational experiences. Lecture strategy is followed by tutorials because individual difficulties cannot be solved in lecture method. Tutorials are highly individualized type of teaching. Tutorial aims at providing remedial help to the learner or to help individual difficulties of the learner. The cognitive and affective objectives of learning can also be achieved through the tutorial teaching strategy. The key strategy of mathematics teaching should focus on keeping the students' interests on mathematics. If the students are interested in learning mathematics, then the teacher's task becomes easier.

Tutorials help students to link together what they have heard in lectures and what students have read in textbooks, and to give them an opportunity to discuss these ideas. A good tutorial is highly interactive, promotes opportunity for discussion, debate and critical reflection, and engages students in the subject content by way of analysis of the material being studied. Tutorials give students the opportunity to make mistakes (and learn from them) in a collegial and supportive environment. This strategy helps students to review the material they have learned in lectures, develop their ideas and implement their learning through questions and problem-solving. Group tutorials are useful for average students. These can satisfy the needs of less exceptional students. For group tutorials, the teacher should have the background of social psychology and group dynamics so that he can deal with group of learners effectively in solving their problems. Group tutorials are more useful in adult teaching. It is a valuable teaching strategy from individual differences point of view and it provides an opportunity to organize remedial teaching. It can fulfill the need of entering behaviour of the learner. It is also more useful for achieving higher order cognitive, affective and psychomotor objectives of learning.

The literature review of studies conducted on teaching strategies of students with learning difficulties reveals that they predominantly focused on language, reading and writing issues, while little concern was given to mathematics (Osmon et al., 2006). Some authors were greatly concerned with mathematics learning difficulties and their studies, in general, sought to develop remedial strategies basically for students having problems related to attention, memory, perception, and motivation, have ineffective skills in the computational operations, mathematical inference, mathematical concepts and other problems related to executive strategies all of which contribute to their low achievement (Barnes et al., 2006).

The lack of literature on tutorial teaching strategies has uncovered the need for the study on the nature and effect of group tutorials teaching strategy on students' mathematics achievement. Thus, the present study was designed to investigate the impact of tutorial strategies on achievement of mathematics.

2. METHODOLOGY

Research Design : The study adopted an untreated control group, pre test and post test quasi experimental design.

Sample: Participants (N=60) were ninth grade students studying in private aided institution under state syllabus for the year 2011-12.

Procedure The present study follows the experimental methodology and participants were randomly assigned to experimental and control groups to identify effect of the independent variable on the dependent variable.

Instrumentation - Mathematics Achievement Test : Content analysis of ninth mathematics textbooks and screening facts, concepts, and the mathematical operations resulted in developing 30-item mathematics achievement test measuring mathematics achievement level of ninth grade students.

Lesson Plans: The Lesson and Group Tutorials Strategy (GTS) was designed as a teaching material for teaching the treatment group. This was looked into by three mathematics education experts to ensure its suitability and representation

of a true mathematics strategy. The plan was written in two forms. TTS lesson Plan used as a teaching material for teaching for experimental group and ordinary lesson plan used in conventional classroom for traditional group.

3. DATA ANALYSIS

The independent sample 't' test at the 0.05 and 0.01 confidence levels was used to compare means of pre and post test scores among the two groups for possible test of significant difference.

Results from the present study demonstrate statistically significant differences among mean scores of the experimental and control group members on the pre-test and post-test as shown by Table-1.

Table-1: Means and Standard Deviations of students Scores on the Achievement Test

Group	Pre Test		Post Test	
	Mean	Standard Deviation	Mean	Standard Deviation

Group	Test	Mean	Standard Deviation	df	't' table value	't' obtained value	Remarks
Experimental Group	Pre Test	25.966	2.684	58	2.00 (0.05) 2.66 (0.01)	7.38	**(p<0.01)
	Post Test	33.066	4.532				
Control Group	Pre Test	26.133	2.788	58	2.00 (0.05) 2.66 (0.01)	0.96	NS(P>0.05)
	Post Test	26.933	3.600				

**Significant ; NS Not Significant

Table 2 shows the means and standard deviations of the students' pre and post-test scores in the achievement in mathematics of the two groups. The results revealed an insignificant difference in the students' mathematics achievement scores in the control group ('t'=0.96, p>0.05) but significant differences in the students' mathematics achievement scores in the experimental group ('t'=7.38, p<0.01). The result that the experimental group members scored higher compared with the control group members implies that the tutorial teaching strategy effectively improved mathematics achievements of students.

4. DISCUSSION OF RESULTS

The major findings in the research work have shown that group tutorials teaching strategies environment is an important method of teaching which affects students' achievement in mathematics. The result agrees with results from many studies (Sawalha, 2004; Kinder et al. 2005; Seman 1996) that confirmed the effectiveness of direct instruction strategy compared with traditional method on the improve mathematics achievement of students with learning difficulties and increasing their mastery of basic skills.

Experimental	25.966	2.684	33.066	4.532
Control	26.133	2.788	26.933	3.600

Table 1 shows differences among mean scores of the experimental group students (exposed to the tutorial teaching strategy) on the pre-test (M=25.966) versus the post-test (M=33.066).

In addition, the table shows differences among mean scores of the control group students (exposed to traditional teaching method) on the pre-test (M=26.133) versus the post-test (M=26.933).

To identify whether there were differences among pre and post tests mean scores of the experimental and control group on the mathematics achievement, 't' test was conducted to explored the effect of using the tutorial teaching strategy on mathematics achievement of students

Table-2: Comparison of the Students' Pre and Post tests scores of Mathematics Achievement of secondary school students (N=30).

5. CONCLUSION

The effectiveness of lecture and group tutorials based strategies in this study lies in the fact that, it is a valuable teaching strategy from individual differences point of view. It also provides an opportunity to organize remedial teaching. It was also fulfilled the need of entering behavior of the learner. It is more useful for achieving higher order cognitive, affective and psychomotor objectives of learning. The implication of the findings of this study to educational practice is that tutorial based strategies as part of the mathematics curriculum reform is likely to make learning more contextual and engage learner in decision-making, forming cooperative groups, locating resources and applying the knowledge. Furthermore, since the cognitive style level of the students was found to be crucial at determining their achievement in mathematics, teachers of mathematics should endeavour to design lesson plans capable of enhancing the performance of students with varied cognitive style levels. Teachers should provide the remedial help in the subject of students own interest and tutorial groups should be formed on the basis of students' difficulties in the subject. This is because the results of the study showed that mathematics achievement gain resulting from group tutorial based strategy was insightful to students' academic success.

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