
THE EFFECTIVENESS OF COOPERATIVE LEARNING (STAD APPROACH) ON THE ACHIEVEMENT IN MATHEMATICS AT HIGH SCHOOL LEVEL

Article Particulars

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Abstract

The present study aims at finding out the effectiveness of cooperative learning (STAD Student Teams-Achievement Divisions) approach) in learning the subject Mathematics at High School level. The purposive sampling technique was adopted for the study. The High school students of Govt. Higher Sec. School, at Chennai district formed the control and experimental groups. Each group consisted of 40 learners. The cooperative teams were formed based on the mid-term test scores. The achievement test, constructed and validated by the investigator was used to collect data from the subjects. The 't' test was used to analysis the data. The 't' result showed that cooperative learning (STAD approach) is effective than the conventional method in learning mathematics. There is a wide scope for the application of cooperative learning (STAD approach) among high school students in learning Mathematics.

Keywords: STAD, anthropology, learning, small group learning, academic, psychology

Introduction

Cooperation is basis to all human interactions and provides the context for constructive competition and development of individual competencies. It would be interesting to use this cooperation as a formal learning technique in the teaching – learning process, cooperative learning is one such example. Johnson et al. (1991) defines cooperative learning, also called 'small group learning' or 'peer interactive learning', as an instructional approach in which learners attain interdependence and cooperation with one another. The model also involves enhancement of particular task-related and inter-personal behaviors that facilitate cooperation among learners. An informal situation is created based on mutual dependence, feeling of being accepted, liked and supported by fellow students. Though cooperative learning has its provisions from a variety of theories related to anthropology, sociology, economics,

political science, social and cognitive psychology, its roots are strengthened by different perspectives of educational psychologists and thinkers. The cooperative learning in practice is found in many forms such as jigsaw, STAD, teams-games, tournament, reciprocal questioning among others. It generates more intrinsic motivation than does individualized learning. The review of literature also supports the instructional procedure of cooperative learning and also highlights some particular aspects of the process. The review is also evidence for the fact that there were few Indian studies to support the theme and for higher education even fewer. Such a humanistic method needs a fair space in the classrooms of school and those of higher education also. Teacher training institutions can provide a fertile ground for the same because experiences here would filter down their way to the school classrooms. The present study was planned keeping in mind the strengths of cooperative learning approach and its feasibility in Indian classrooms.

Statement of the Problem

The present study the effectiveness of cooperative learning (STAD approach) on the achievement in mathematics at high school level

Objectives of the Study

1. To find out the significant difference in the achievement in mathematics between the control and experimental group students.
2. To find out the significant difference in the achievement in mathematics between the control and experimental group of boys students.
3. To find out the significant difference in the achievement in mathematics between the control and experimental group of girl students.
4. To find out the effectiveness of the STAD approach in learning mathematics to the conventional method.

Hypotheses

1. There exists significant difference in the achievement in mathematics between the control and experimental group students.
2. There exists significant difference in the achievement in mathematics between the control and experimental group of boys students.
3. There exists significant difference in the achievement in mathematics between the control and experimental group of girl students.

Methodology: The present study is an experimental study involving two groups, as control and experimental group. The control group exposed to conventional method, where as the experimental group was exposed to STAD approach of cooperative learning.

Sample: The sample consisted of 40 students as Control Group and 40 students as Experimental Group from High school students of Govt. Higher Sec. School, Chennai district.

Tools: The Achievement test was developed and validated.

Procedure: The study comprised of several phases in using the cooperative learning method in a classroom situation.

**Student Teams-
Achievement Divisions**



Statistical Technique Used

The following Statistical techniques were used in the study: Mean, Standard Deviation and 't' test.

Results and Discussion

The results of the study are presented below in tabular columns with interpretation.

Table 1: Pre-test and Post-test mean Achievement Scores of Experimental Group and Control Group

Test	Group	N	Mean	SD	't' Value
Pre-test	Control Group	40	2.49	0.912	0.54
	Experimental group	40	2.36	1.04	
Post-test	Control Group	40	2.49	0.912	38.4
	Experimental group	40	40.88	3.742	

Table-1, pre-test scores reveals that 't' value 0.54 the difference in mean achievement scores of experimental group and

control group before the experiment was not significant at 0.01 level, i.e. both the groups experimental and control are similar in respect to their achievement scores.

Table-1, post test scores reveals that 't' value 38.4, difference in mean post-test scores of students in experimental group and control group is significant at 0.01 level of significance. When the results are compared in context of mean scores, it is found that the mean scores of experimental group is higher than the control group. It indicates that the students perform well when learned in small groups.

Conclusion

The present study clearly reveals the supremacy of STAD approach over the conventional method of instruction. It is found that STAD approach is more effective than the conventional method in enhancing the academic achievement in mathematics among learners. The National Policy on Education, Programme of Action (1992) observes that teaching at secondary level should primarily be directed towards problem solving and decision making through the learning of key concepts. The instructional approaches followed in the classroom should develop in the child the spirit of enquiry, creativity, objectivity, scientific temper and other desired values.

The curriculum planners and educational policy makers may take note of this finding and restructure the curricula by incorporating cooperative learning approaches as appropriate methods of learning. The curriculum of various courses should be activity-based rather than knowledge – based.

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