

EFFECT OF THINK PAIR SHARE TECHNIQUE ON STUDENT ACHIEVEMENT IN SCIENCE OF SECONDARY SCHOOL STUDENTS

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Abstract

The aim of this research was to describe the effect of Think Pair Share technique for teaching science . Think pair share is the cooperative teaching technique that include three components time for thinking, time for sharing with a partner and time for each pair to share back to a large group. The use of Think Pair Share unites the cognitive and social aspects of learning, promoting the development of thinking and the construction of knowledge.

The study took place in ninth class with two equivalent groups. Control and experimental group each are containing twenty students. The equivalent group design was employed using equivalence test , posttest format. Researcher taught the unit in science Highway to Health by Think Pair Share technique to experimental group and conventional method to control group.

The result confirmed the positive effect of the Think Pair share technique on achievement of secondary students in science. Think pair share technique gives the opportunity for students to work independently and in collaboration with others .Students can develop the ability to express an idea or ideas with words verbally and compare it to others ideas and gain an understanding of their own ideas tested, interaction that occurs during learning can increase motivation and gives stimulus to think so beneficial in the long term learning process.

Keywords: Cooperative teaching, Think pair share technique , students achievement.

Introduction

Education is the most important intention of mankind. It begins at birth and end at his death. It is a process of growth in which the individuals is helped to develop his talent, powers, interests and ambitions. This growth is an integrated and harmonious process. School education of any individuals is making shape his/her life.

The National curriculum framework NCF 2005 recommends that children life at school must be linked to their life outside the school. Good science education is true to the child, true to the life and true to science. At the secondary stage the student should be engaged in learning science as a composite discipline, in working with hands and tools to design more advanced technology and activities an analysis on issues surrounding environment and health. Systematic experimentation as a tool to discover/verify theoretical



principles and working on locally significant projects involving science and technology are to be important parts of the curriculum.

Need and significance of the study

In our daily life the science has its great importance. The incident events has real ted with our daily life. To boost the ideas, concepts, scientific attitude of students the teacher should change himself with new concepts and ideas in teaching method. Teacher acquired the new teaching methods and new techniques. Cooperative learning is doubtlessly a great way of learning co-operative learning encourages students to work in groups and teams. Co-operative learning as a constructivist teaching method is recognized as a valuable component of classroom learning.

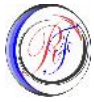
According to Johnson and Johnson (1998) a co-operative learning group “is a group whose members are committed to the common purpose of maximizing each other According to Johnson and Johnson there are five elements of co-operative learning. Individual’s accountability, positive independence, face to face primitive interaction, group processing and interpersonal and small group skills. Co-operative learning is a new concept and new approach to the educational process. Cooperative learning methods are very effective when problems are created due to large classes.

Think Pair Share technique is a type of co-operative learning that is designed to influence the pattern of student interaction. Think Pair Share teaching strategy was developed by Lyman and associates. Learning model Think Pair and Share is an effective way to create mood variation pattern class discussion. Assuming that all of recitation or discussion requires a setting to control the class as a whole, and the procedure used in the Think Pair and Share can give students more time to think, to respond and help each other.

Survey of related studies

Robert E. Salvin (John Hopkins University.) completed his research on Research on classroom cooperative learning techniques, in which students work in small groups and receive rewards or recognition based on their group performance, has been increasing in the past few years. The pattern of research findings supports the utility of cooperative learning methods in general for increasing student achievement, positive race relations in desegregated schools, mutual concern among students, student self-esteem, and other positive outcomes. The various cooperative learning methods are contrasted in terms of characteristics and outcomes, and the next steps for research in this area are outlined.

Redha Maidatija completd his research on The use of Think Pair Share (TPS) in teaching speaking Think Pair Share is a grouping strategy that lets students collaborate on ideas, opinions, research, topics, problem solving procedures, debate resolutions, textual analysis and small group activities. The aim of this study is to elaborate theories and research finding related to the use of Think Pair share model in teaching speaking. The research finding showed that activity such as Think Pair Share’ TPS is designed to deepen students



abilities to communicate about the expository ideas related to the academic content of the disciplinary subjects which plenty opportunities for feedback peers and the teacher.

Besides using this model in teaching speaking is very helpful because TPS allow student time to process the task individually before sharing it with other students. In this situation every student involved and no one is permitted to sit passively based on theories and research finding, the writer concluded that using TPS is solution to improve students in speaking skill

Objectives

The objectives of the studies are

- 1) To study the co-operative learning in teaching science.
- 2) To study the Think Pair Share technique for teaching science for secondary school student.
- 3) To select the unit suitable for Think Pair share technique and prepare the lesson for it.
- 4) To find the effectiveness of Think Pair share technique on students achievement in science of secondary school students .

Hypothesis

There is no significant difference between means obtained through teaching by conventional method and Think Pair Share technique.

Methodology of Research

There are various methods of research. Researcher uses the experiment method of research. Researcher completed research with following procedure.

- 1) Forty students of ninth class are selected for the research.
- 2) Researcher will frame two equivalent groups by using the marks obtained in unit test conducted by school . Researcher will calculate the mean, standard deviation and t value. By the statistical analysis these two groups are equivalent.
- 3) By using the random sampling one group is control group and other is Experimental group.
- 4) Researcher taught the same unit by the Think Pair Share technique to experimental group and by conventional method to control group.
- 5) At the end of experiment an achievement test in science is administered to both the groups and a comparison is made of the achievement of students of the two groups. Researcher calculate the mean, standard deviation and t value

Experimental design

There are various types of experimental designs for present research. Researcher use the post test only control group design was used .In this design by using the marks obtained in unit test conducted by school. Two equivalent groups are selected In this design dependent variable measures for the two groups are then compared (post Test) to determine the effect of independent or treatment variable x.

Sample size

Researcher selected the 40 students of 9th class in Annasaheb Kalyani Vidyalaya, Satara. Before starting the treatment for the experimental group equivalence tests were administered on world of matter, Cell-The unit of life ,Life simple and complex to both experimental and control group. Following table shows mean ,standard deviation and t value calculated for equivalence test of experimental and control group.

**Table 1 – Formation of equivalent groups
Mean , standard deviation & t value of experimental and control group**

Sr. no.	Groups	Sample	Mean	Standard deviation	t - value
1	Experimental	20	12.45	2.747	0.355
2	control	20	12.15	2.594	

In the above observation table the mean of experimental group is 12.45 and control group is 12.15 and standard deviation of Experimental group is 2.747 and control group is 2.594 and t value is 0.355. This value is smaller than the entry of 2.09 at 0.05 level that means experimental and control groups are equivalent.

Scope and Limitation

The study was restricted to students of 9th class from Annasaheb Kalyani Vidyalaya, Satara. Researcher selected **Highway to Health** unit in 9th standard textbook of science and technology.

The treatment period for both groups was forty minutes per day and it was spread over only for six days.

Data Collection (Treatment) and Analysis

The experimental group was taught using Think Pair Share technique, the control group was taught by conventional method. The co-operative learning strategy involved students working in group heterogeneous or study material and were give instruction to discuss and do the activities together.

Think Pair Share technique is co-operative learning technique. To implement this technique the following steps were used during 40 minutes classroom lesson.

1) Teacher submit a question.

Activity: Teacher do apperception explaining the purpose of learning and asking question related to the material to be delivered.

2) Students think individually.

Activity: The teacher provides the opportunity for students to think about the answer to the problems submitted by teacher.

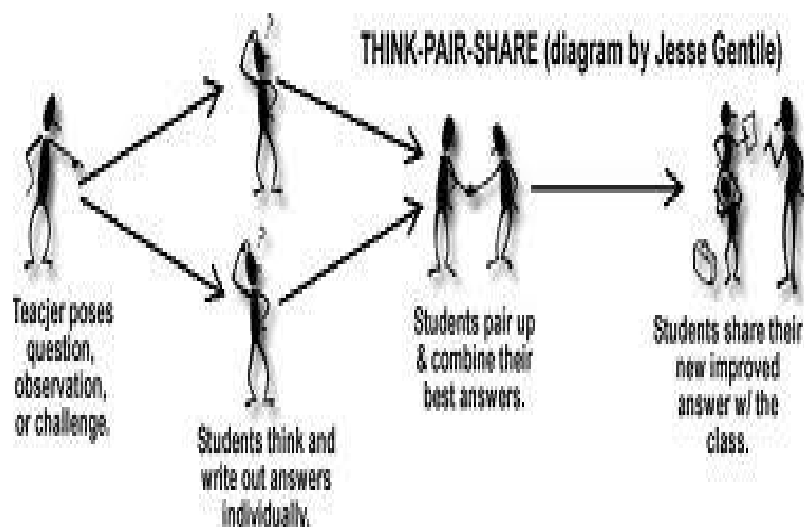
1) Each student discuss the ideas of each with a pair

Activity: The teacher organizes students into pairs and give an opportunity to the students to discuss their answers

4) Students share answers with the whole class.

5) Analyze and evaluate the results of solving problem.

The following diagram shows the Think Pair Share



The following observation table shows the treatment period and topics covered.

Table 2- Time table for teaching experimental and control group

Sr. no	Sub unit	Date	Time	Group
1	Health	2/9 /2013	9.45to 10.25	Experimental
		2/9 /2013	5.00 to 5.40	Control
2	Disease-symptoms of disease	3/9/2013	9.45 to 10.25	Experimental
		3/9/2013	5.00 to 5.40	Control
3	Types of disease	4/9/2013	9.45 to 10.45	Experimental
		4/9/2013	5.00 to 5.40	Control
4	Prevention of infectious disease	6/9/2013	9.45 to 10.25	Control
		6/9/2013	5.00 to 5.40	Experimental
5	Bacterial disease	7/9/2013	12.00 to 12.40	Control
		7/9/2013	12.45 to 1.00	Experimental
6	Viral disease	10/9/2013	9.45 to 10.45	Control
		10/9/2013	5.00 to 5.40	Experimental

After completing the treatment for the experimental group post tests were administered on **Highway to health** to both experimental and control group. Following table shows mean, standard deviation and t value calculated for post test of experimental and control group

Table 3 - Post test-Mean, standard deviation & t value of experimental and control group

Sr. No.	Groups	Sample	Mean	Standard deviation	t value
1	Experimental	20	16.35	0.82	5.227
2	Control	20	14.55	1.745	

Observations and Findings

- 1) In the above observation table the mean of experimental group is 16.35 and control group is 14.55 and standard deviation of Experimental group is 0.82 and control group is 1.745 and t value is 5.227 .
- 2) We find that t of 5.227 is larger than the entry of 2.09 at 0.05 level therefore that null hypothesis is rejected and mean of experiment group is larger than the control group.
- 3) Researcher concluded that the Think Pair Share technique is more effective on students achievement of secondary school students in science.

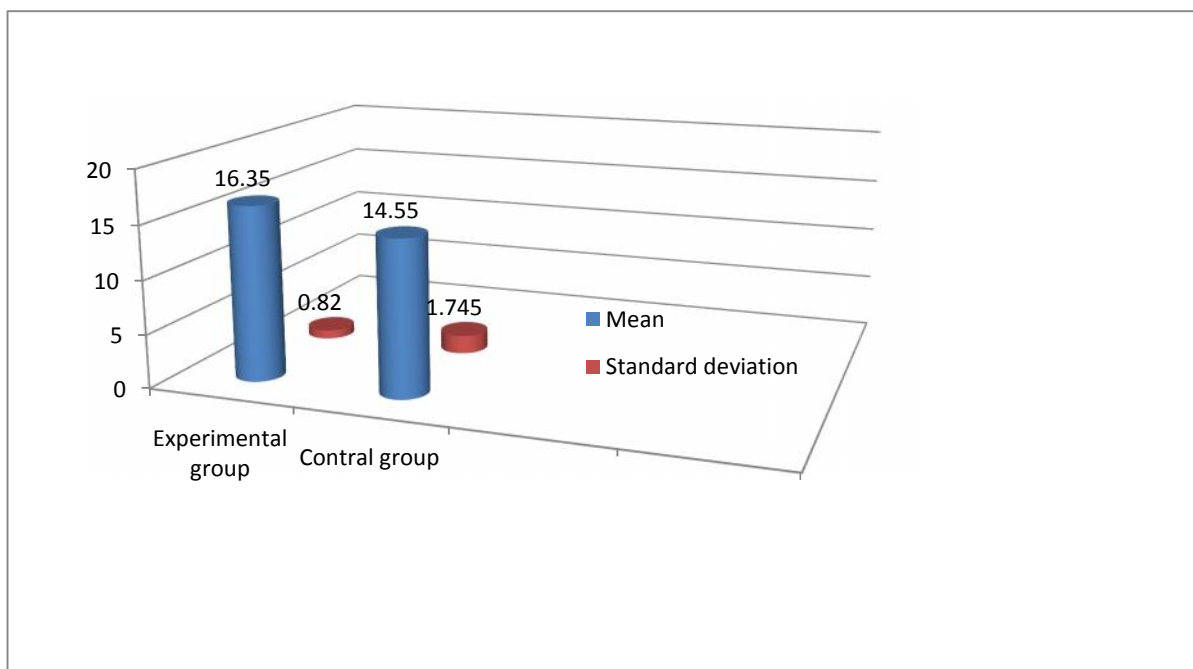
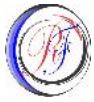


Fig:2: Graphical representation Mean ,standard deviation of experimental and control group



Conclusions

- 1) There was a difference between mean gain scores of experimental and control group. The experimental group is greater than control group.
- 2) The Think Pair Share technique gives the opportunities for students to work independently and in collaboration with other.
- 3) Think pair Share technique is a great way to motivate students and promote higher level thinking.
- 4) Think pair share technique is more effective than conventional teaching method
- 5) Think Pair Share technique is more effective on student achievement of secondary school student in science.

Scope for future work

- 1) Think Pair Share technique is useful in mathematics and social science and other subject.
- 2) Think Pair Share technique is used effectively in large classes in school
- 3) Co-operative learning strategy is effective to all students with different learning abilities as individual difference can be overcome by group activities.

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