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Effectiveness of Co-Operative Learning Method on the Achievement of XIth Standard Students in Learning Science Concepts

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Abstract
In the present study the Investigator has attempt to Effectiveness of co-operative learning method on the achievement of IXth standard students in learning science concepts . The sample consists of Investigator has chosen 204 IXth Standard Students from Virudhunagar District as a Population for this study. Among them 102 students were taught in conventional method and 102 students will be taught in Co-Operative Learning Method and the investigator adopted the sampling in simple random sampling method. The findings of the study were (i) IXth Standard students those who learned Science through Co-operative learning approach scored more than Conventional method of teaching group. The Co-operative learning method facilitate for IXth Standard students in learning science concepts rather than their counterparts in Conventional method of teaching. (ii) IXth Standard students those who learned science concepts through Co-operative learning activities have more Retention ability than Conventional method of teaching group. The Co-operative learning activities facilitated for IXth Standard students to achieve better retention in learning science concepts rather than their counterparts in Conventional method of teaching. (iii) The Co-operative learning strategy has equal impact on the achievement of Boys and Girls

Keywords: Co-operative Learning, Conventional Learning, Achievement of Students, Independent Variables, Dependent Variables, Socio-Economic Status, Educational Qualification.

Introduction

Education is the field of study that deals mainly with methods of teaching and learning in schools. In general any attempt to improve the quality of education ultimately depends on the quality of instruction imparted in the classroom. Developing countries in world like India, if we want to improve the quality of education, we should pay proper attention for changing the strategy of instruction and efforts should be made to introduce innovative teaching and learning methods in class rooms. According to Johnson, Johnson and Holubc, (1994): "Cooperative learning is the instructional use of small groups through which students work together to maximize their own and each other's learning".

Statement of the Problem

To identify the effectiveness method of instruction for children in learning science concepts, the investigator has taken up the problem "Effectiveness of Co-Opertaive Learning Method on the Achievement of IXth Standard Students in Learning Science Concepts". This study attempts to compare the performance of achievement among the children learnt through conventional method of teaching and Co-operative learning method.

Objectives of the Study

To study the effectiveness of using Co-operative learning activities in teaching Science concepts.

- To find significant difference if any in achievement of IXth standard students in learning Science concepts through Co-operative Learning Method and Conventional Teaching Method.
- To find significant difference if any in achievement of IXth standard students in Learning Science concepts through Co-operative Learning Method and Conventional Teaching with regards to their Sex (Boys and Girls).
- To find significant difference if any in achievement of IXth standard students in Learning Science concepts through Co-operative Learning Method And conventional Teaching with regards to their Family Income Levels (Low, Middle and High)
- To find significant difference if any in achievement of IXth standard students in Learning Science concepts through Co-operative Learning Method and Conventional Teaching with regards to their Parents Educational Qualification (Illiterate, School Level and Above School Level).

Hypothesis of the Study

There is no significant difference in the post test performance of IXth standard students in learning Science concepts through Conventional and Co-operative Learning Method.

- There is no significant difference in the Retention ability of IXth standard students in learning Science concepts through Conventional and Co-operative Learning Method.
- There is no significant difference in the achievement of IX^{t}h standard students in learning Science concepts through Co-operative Learning Method with regards to their Sex (Boys and Girls).

Variables of the Study

In this study, the experimental variables were the conventional method of teaching and using Co-operative learning method. The Organismic or attribute variables such as Age, Sex, Mark, Socio-Economic status, Family size, Family income, Parents Educational qualification and Achievement, also determine the effects of the experiment.

Methodology

The study proposed to inquire in to the effectiveness of two methods of instruction, i.e. Co-operative Learning approach and Conventional method of teaching administered to the Controlled and Experimental group of IXth standard students. The equated group design has been selected for the study. The dependent variable of this experiment is retention of information gained IXth standard students learnt through different methods of instruction. One is Co-operative learning approach and the other is Conventional method of teaching.

Population and Sampling Techniques

The population for the study consists of IXth standard students. Who were taught in co-operative learning at virudhunagar district. The investigator used simple random sample from the population. The sample consists of 204 IXth standard students. Among them 110 were girls and 94 were boys. In the present study the investigator used the purposive sampling technique.

Tools used for this Study

Proforma and Achievement Test tools are used for the study.

Proforma

It consists of details regarding Age, Sex, Socio economical status, Family size and parent's educational qualification.

Achievement Test

For standardizing the achievement test the investigation found item analysis, Reliability and Validity values. Further, the scoring key for this test is also prepared by the investigator.

Statistical Techniques Used in the Study

Descriptive Statistics like mean, standard deviation, t-test were used in the present study.

Analysis and Interpretation of Data

Hypothesis 1

There is no significant difference in the Post-test performance of IXth standard students in learning science concepts through Conventional and Co-operative Learning Method.

Table 1 Difference between Control and Experimental Group in Post Test

Groups	N	Mean	SD	Mean Difference	SE	"t" Value
Control	102	15.696	3.33	3.569	0.46	7.746**
Experimental	102	9.265	3.25			

**Significant at 0.01 level.

From the table it is found that there is a significant difference between the Means of Control and Experimental group with regards to their Post-test scores. The mean difference is significant at 0.01 level.

Hypothesis 2

There is no significant difference in the Retention ability of IXth standard students in learning science concepts through Conventional and Co-operative Learning Method.

Table 2 Difference between Control and Experimental group in Retention Test

Groups	N	Mean	SD	Mean Difference	SE	"t" Value
Control	102	12.245	3.413	3.49	0.485	7.192**
Experimental	102	15.735	3.353			

Significant at 0.01 level.

From the table it is found that there is a significant differences between the means of Control and Experimental group with regards to their Retention scores. The mean differences is significant at 0.01 level.

Hypothesis 3

There is no significant difference in the achievement of IXth standard students in learning science concepts through Co-operative Learning Method with regards to their Sex (Boys and Girls) with reference to their retention test score" is accepted.

Table 3 Difference Between Boys and Girls of Experimental Group in Retention Test

Groups	N	Mean	SD	Mean Difference	SE	Calculated "t" value
Boys	47	16.06	3.02	0.61	0.7312	@
Girls	55	5.45	3.62			0.834

Note:@ Not Significant at 0.01 level.

From, the table it is found that there is no significant difference with regard to their Retention test scores. The mean difference is not significant at 0.01 level.

Major Findings of the Study

- IXth standard students those who learned Science through Co-operative learning approach scored more than Conventional method of teaching group. The Co-operative learning method facilitate for children in learning science concepts rather than their counterparts in Conventional method of teaching.
- IXth standard students those who learned science concepts through Co-operative learning activities have more Retention ability than Conventional method of teaching group. The CO-operative learning activities facilitated for children to achieve better retention in learning science concepts rather than their counterparts in Conventional method of teaching.
- The Co-operative learning strategy has equal impact on the achievement of Boys and Girls.
- The conventional teaching strategy has equal impact on the achievement of Boys and Girls.

Suggestions for the Study

The following suggestions are made for furthering research in this area.

- The present investigation was attempted with limited number of students. The validity of this finding could further be substantiated with larger sample.
- Only the Secondary level was taken for this study this can be extended to other levels like higher secondary and college levels.
- Experimental studies should be carried out to further examine the effect of other instructional strategies on students achievement.
- In this study, the Co-operative activities developed for science subject only. A similar kit can be development for other subjects like English, Mathematics, History, Geography etc.,

Conclusion

In the present study, the IXth standard students studying in higher secondary school in Virudhunagar district were investigated. A knowledge about leaning method is quite essential to inculcate proper thinking and corrective methods on the part of the students in learning science concepts. Hence, the curriculum for the teaching methods must be provided in all educational institutions. Co-operative learning method is a successful teaching technique. It provides greater educational opportunities for the IXth standard students. It helps in bringing new kinds of experience for the IXth standard students in the school to make education more interesting and meaningful. This research study reveals that the IXth standard students learn better through small group activities than the conventional method. The Co-operative learning method helps the IXth standard students to achieve better and to perform well in their studies. Hence, the teachers, Heads of the institutions and the policy makers should make effort to maximize the usage of Co-operative activities in the classroom climate.

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