Effect of Concept Mapping Strategy on Student's Achievement in Mathematics at Secondary Level

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Abstract

Teaching is the enjoyable as well as a great responsibility of teachers, In the recent class room effect of Mathematics teaching is given vital importance. Hence teaching mathematics is anoutdare work on the part of Mathematics teacher. In this research we experiment the effect of concept mapping in teaching during mathematics class room. In this study examine the effectiveness of concept mapping strategy an importance area of teaching mathematics. So, researcher prepare a concept mapping of mathematics of unit "Triangle" in standard $9^{th}$to assess its effectiveness as compared to conventional classroom Teaching. The data analysis with the help of Mean, Standard deviation and t- value and after analysis we reached the result, The Concept Mapping strategy developed for this study found to be effective .The Difference between experimental and control group in are statistically significant for unit 'Triangle' of Mathematics Subject. Concept Mapping strategy are effective teaching method as the comparison of conventional method .

Keywords: Concept Map, Strategy, Mathematics, Achievement

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Introduction

Education is a process of an overall development of human. A child is a gain necessary knowledgefrom family members in there childhood, than after getting admission in school, they learn during teaching learning process from teacher, they can gain get enough knowledge teacher. There are many challenges in 21stcentury in school teaching. Teaching is the enjoyable as well as a great responsibility of teachers, In the recent class room effect of Mathematics teaching is given vital importance. Hence teaching mathematics is outdare work on the part of Mathematics teacher. In this research we experiment the effect of concept mapping in teaching during mathematics class room. Concept maps a diagrammatic representation, which meaningful relationship concepts in the form of propositions.

The present study conducted to examine the effectiveness of concept mapping strategy an importance area of teaching mathematics. So researcher prepare a concept mapping of mathematics of unit "Triangle" in standard 9thto assess its effectiveness as compared to conventional classroom Teaching. Hence the present study is under taken with a view to study effect of concept mapping on mathematics classroom in 9th standard.

Objectives of Research:

1. To develop the concept mapping Strategy to teach mathematics unit " Triangle".
2. To try out the concept mapping Strategy as a compared to the Conventional method of instruction.
3. To compare the relative effectiveness of the concept mapping strategy and the conventional method in terms of scores obtained by students on the teacher's made achievement test.

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What is concept mapping:

Concept mapping is the process of creating a visual representation of your knowledge .This type of System predates the development of alphabets and the written word and is deeply embedded way that's humans organize and communication information.It is a graphic organizer that not only gives a visual representation of concepts and the relationship between and among them and then identifies how they relate to each other.

A concept mapping is a diagram that depicts relationship between concepts. It is a graphical tool that we can use to organize and to visualize content of lesson or theme.
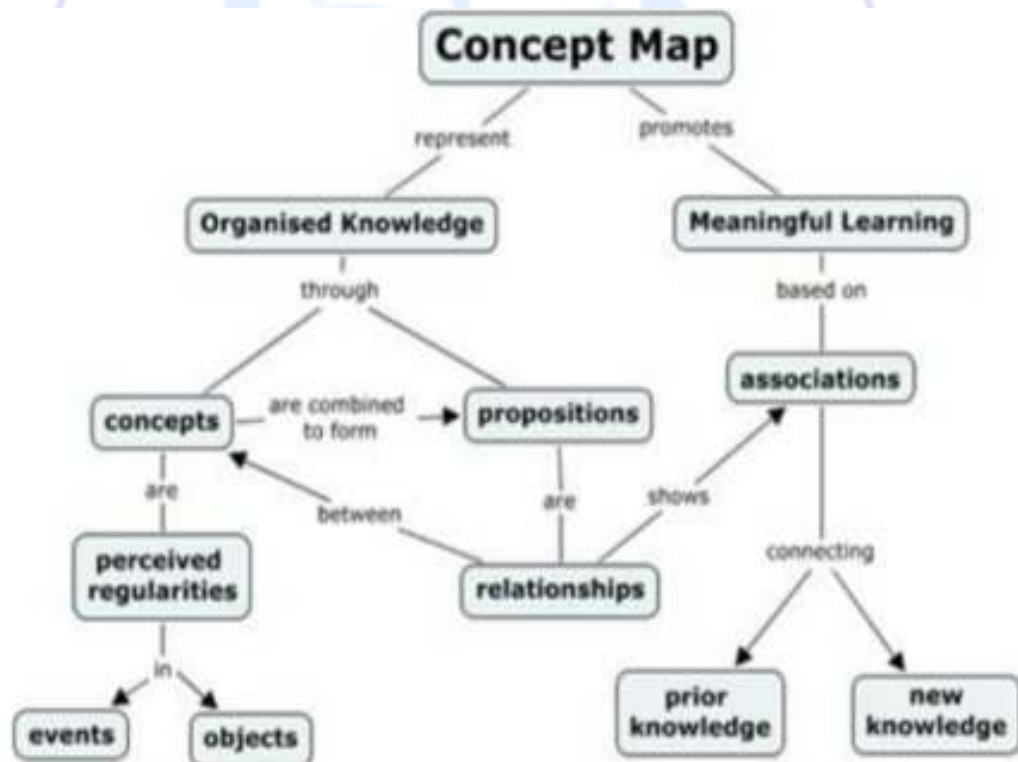
Hypotheses

1. There is no significant difference among the mean scores of the students of experimental and control groups.
2. In the replication experiment, there will be no significant different between the mean score of the students receiving instruction through concept mapping strategy ant conventional method of instruction.

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Variables:

Independent variable: Concept Mapping Strategy

Dependent Variable: Students achievement scores

limitation of the Research :

The present study delimited to the students of English medium private secondary schools of Shanti Niketan Ideal Academy udhna Surat following the prescribed syllabus of NCERT.

Sample of study:

Researcher had taken 60 students of Shanti Niketan Ideal Academy School at standard 9th are sample of the study. In 60 students break a two groups (30-30 students), first group is experimental group and second is control group.

Research Method:

The Researcher selected the experimental study.

Design and procedure:

In the present study, the control group was taught trough lecture cum design method of teaching and experimental group was taught through concept mapping method . Both group were taught by researcher himself. The next step was the preparation of lesson plans in the form of concept mapping by investigator.

Tool used for data collection :

1. Mathematics achievement test(Post test)
2. Pre- test was used to equalized the two groups.

Data analysis:

At the end of experiment Mean, Standard Deviation and t- value were calculated on the marks obtained by students of both groups.

Table -1**Comparison of sample for experimental and control group of 9th standard in the post test score by using 't' test in the experiment**

Group	Number	Mean	SD	t- value
Experimental	30	19.30	3.22	
controlled	30	14.43	4.59	4.74

Significant at level 0.01

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Table -2

Comparison of sample for experimental and control group of 9th standard in the post test score by using 't' test in the replication experiment

Group	Number	Mean	SD	t- value
Experimental	30	13.50	4.38	4.07
controlled	30	11.27	2.47	

Significant at level 0.01

Observation and Interpretation:

The observation of table first shows that, the calculated t-value was 4.74, which was significant at 0.01 level, so null hypothesis In the experiment. There is no significant difference between means score achieved by the 9th standard students when taught Mathematics by concept Mapping strategy was found effective for "Triangle" unit in Mathematics subject.

Observation of table -2 shows that , the calculated t- value was 4.07 which was significant at 0.01 level, so null hypothesis in the replication experiment, there is no significant difference between mean scores achieved by 9th standard students when taught mathematics by concept mapping strategy and traditional method was rejected. Thus concept mapping strategy was found effective for "Triangle" unit in Mathematics subject.

Table 1 and table 2 shows the comparison of score of post test of experimental and control groups of 9thstandard . from table 1 and 2, it is observed that , the mean of scores of post test of 't' value is significant . hence it is conclude that, the score of post test of the experimental group significantly higher that the score of the post test of the control group. Therefore, it can be say that, the text based concept mapping strategy developed for the study have shown favourable effects on the score of post test obtained by the experimental group of 9th standard in the post test.

Conclusion:

1. The Concept Mapping strategy developed for this study found to be effective .
2. The Difference between experimental and control group in are statistically significant for unit 'Triangle' of Mathematics Subject.

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3. Concepet Mapping strategy are effective teaching method as the coparision of conventional method .

Reference

Joseph D. Novak & Alberto Canas(2008), The Theory Undelying Concepts Mapp and How to construct and use them. Technical Report, IHMCC Map tool.

Raninga N. (2019) Effect of concept mapping strategy on science achievement of secondary school students, Newst international multidisciplinary refferdjounal. Surendranagar.

Uchat, D.A. (2012). Methodology of Research and Social Science (Second Edition). Rajkot: Paras Prakashan.

Parekh, B.,Trivedi, M. (1994). Statistics in education. AhmadabaUniversityGranthNirman Board.