

EFFECTIVENESS OF CONCEPT MAPPING STRATEGY IN THE ATTAINMENT OF THE CONCEPTS OF GEOGRAPHY AT SECONDARY SCHOOL LEVEL: A STUDY

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Abstract

Concepts play a key role in teaching learning process at all levels for all disciplines. This experimental study aim at finding out the effectiveness of using concept mapping strategy in the attainment of the concepts of geography for IX class Urdu medium students in Hyderabad. Post test only equivalent group design was adopted with a sample of sixty IX class students.

Objectives of the study were:

- (1) To find out if there is any difference in the post test performance of control group and experimental group of IX class Urdu medium students of Hyderabad.*
- (2) To find out the effect of concept mapping strategy with respect to Boys and Girls of IX class Urdu medium students of Hyderabad.*

Simple random sampling technique was used and the obtained results show that the (i) experimental group performed better than the control group. This shows that concept mapping strategy enhances performance and retention of knowledge in geography (ii) there is no significant difference in the effect of concept mapping strategy with respect to Boys and Girls.

Lastly I conclude that this study certainly helps the teachers to adopt appropriate methods of teaching learning process.

Key words: Concept Mapping Strategy, Geography Concepts, Secondary Level.



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Introduction: “A picture is worth a thousand words”. Ben Shneiderman. Concept maps are diagrams that use various visual metaphors or methods to layout information. Each shape, line arrow and image has a specific meaning for each type of concept map. Concept mapping helps different types of learners and certainly helps to develop logical thinking as well as study skills because concept maps reveal connections and help the learners to see how individual ideas make up a larger whole.

Geography studies the earth in relation to mankind. Knowledge of geography is essential in day to day life. It is useful in many fields such as business, trade, commerce,

agriculture, industry, navigation and military operations. Because of its practical, intellectual, cultural and economic utility, Geography has taken a unique place in school curriculum.

Successful teacher always keeps in mind that teaching must be dynamic, challenging and in accordance with the learner's comprehension. He/ she always tries a variety of techniques and methods to make the lesson much more interesting, inspirational and effective. This paper throws light on the effectiveness of concept mapping strategy used by the investigator in the attainment of concepts of geography in the students of secondary school level.

Review of Literature:

Turan, M. et, al. (2018) has done a study on "*The effect of concept maps, as an individual learning tool, on the success of learning the concepts related to gravimetric analysis*". This study applies a case study research design to quantitatively examine the effect of the use of concept mapping and to conduct a detailed qualitative investigation of the participants opinions about its use. In this study concept maps were used as the data collection tool. Results from the study showed that there was significant difference between the pre and post test scores on all tests. In other words the use of the concept map resulted in an increase in the success of the students.

Sakio, John et.al, (2015) conducted a study on "*Concept mapping Strategy: An Effective Tool for improving Student's Academic Achievement in Biology*". The design of the study was quasi experimental with 122 senior secondary students selected purposively from two senior secondary schools. The result revealed that concept mapping method enhanced students academic achievement in Biology. There was no significant difference between male and female students in the experimental group.

Kumar Manoj, (2014) Conducted a study on "*Effect of Teaching through concept mapping on achievement in social studies*". The sample selected for the study consist of 40 students from class VIII of Government senior secondary school. The study was experimental in nature. The results showed that students taught through concept mapping strategy have higher achievement level.

Alireza et. al, (2012) made a study on "*Effects of Concept Mapping instruction on the academic achievement of students in the history course*". Sample consisted of 43 thirds high school male students. Experimental method was adopted. Results revealed experimental group performed significantly better than control group.

Ahmad O, Qarareh (2010) conducted a study on “The effect of using concept mapping in teaching on the achievement of Fifth Graders in Science” Sample consisted of 80 Students. Experimental method/ study was adopted and the results showed concept mapping has greater effect on academic achievement.

Significance of the Study:

These days geography is considered as a part of the composite science of Human Society. Its purpose is to study the structure and behaviour of human society. Therefore, it is one of the essential branch of social sciences. Though all the social sciences have common purpose i.e. the study of man, yet each presents unique point of view and each has evolved its own technique of studying human affairs and solving social problems. As the review of related literature indicates that the research studies undertaken so far cover mostly other subjects such as Biological sciences, Physical Sciences Mathematics and Languages and only a few studies have been conducted in Social sciences, Specially in geography no such research studies has been conducted on concept mapping Strategy and its effectiveness in the attainment of concepts in geography. Hence the researcher made an attempt to study the effectiveness of concept mapping in the attainment of the concepts of Geography.

Operational definition of the terms used:

Concept mapping: concept mapping is a diagram that depicts relationship between concepts and sub-concepts arranged in hierarchical manner with connectives which help in grasping the content.

Strategy: strategy is a plan or design of class room teaching involving method, technique, approaches and materials to make the process of learning effective which helps in the attainment of concepts.

Concepts of geography: Concepts of geography under study include concepts from the lesson on Latitude, Longitude, Movement of Earth, Internal structure of Earth, Earthquake, Rock cycle, Hydrosphere, Water cycle, Atmosphere, Biosphere.

Secondary school level: Secondary school level includes classes from VIII to X. In this study only IX class students were selected.

Objectives of the study:

(1) To find the difference in post test scores of control group and experimental group of IX class Urdu medium students of Hyderabad.

(2) To find the effectiveness of concept mapping strategy with respect to Boys and Girls of IX class Urdu medium students of Hyderabad.

Hypotheses:

H0: There is no significant difference between post test scores of control group and experimental group of IX class Urdu medium students of Hyderabad.

H1: There is significant difference between post test scores of control group and experimental group of IX class Urdu medium students of Hyderabad.

H0: There is no significant difference between the effect of concept mapping strategy with respect to Boys and Girls of IX class Urdu medium students of Hyderabad.

H2: There is significant difference between the effect of concept mapping strategy with respect to Boys and Girls of IX class Urdu medium students of Hyderabad.

Delimitations of the study:

- (i) The investigator delimited the study to students of class IX.
- (ii) Delimited student's strength to 60 only. (10 Boys and 20 Girls of control group, 10 Boys and 20 Girls of experimental group.)
- (iii) The study is restricted to Hyderabad City only.

Research Design:

The present study intended to find out the effect of concept mapping strategy in the attainment of concepts of geography at secondary school level. Population of the study covered Urdu Medium Govt. Schools of Hyderabad. A representative sample consisted of 60 students of IX class with 10 Boys and 20 Girls in control group and 10 boys and 20 girls in experimental group. Female students were more in number than male students studying in class IX Urdu medium school. Proper care was taken to get proper representation of male and female students. Simple random sampling technique was adopted for the study. The study is experimental on post test only equivalent groups design.

Tools used:

To measure I.Q of IX class students Raven's Coloured Progressive Matrices Scale was used. Based on I.Q means t- Scores were calculated, with the help of t- Score control group and experimental group were made.

Achievement test paper was constructed by the investigator to obtain post test scores, keeping in view the blue print and weightage-table norms.

Data analysis:

Objective 1: To find out the difference between post test scores of control group and experimental group of IX class Urdu medium Students.

Table: 1

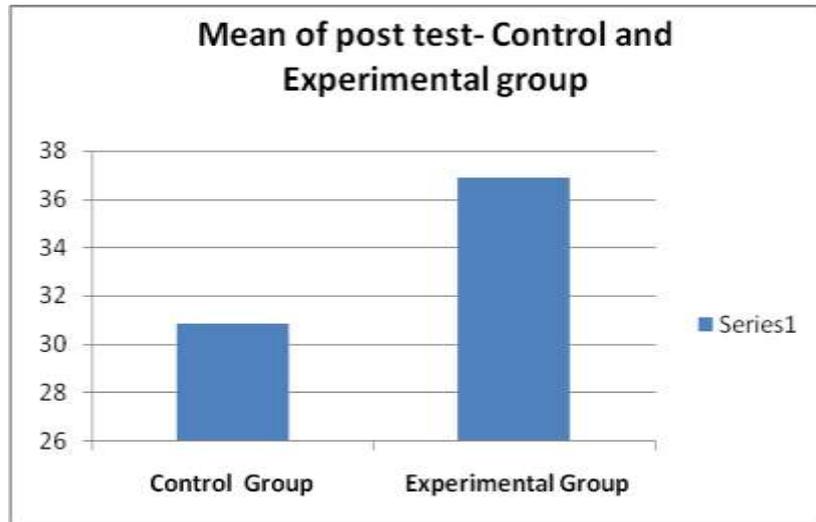


Figure: 1.1

Figure 1.1 Shows post test mean of Experimental group is greater than Post test mean of Control Group.

From table 1: Mean of Post test scores of control group is 30.83, SD is 7.17 and Mean of Post test of Experimental Group is 36.9, SD is 5.19. at 58 df, obtained t-value is 3.57; critical t-value at 0.05 level is 2.00 and at 0.01 level of significance is 2.66.

Here, critical t-value < obtained t- value; Hence Null hypothesis is rejected i.e.

H0: There is no significant difference between the post test scores of control group and experimental group of IX Class Urdu Medium Students.

Therefore research hypothesis is accepted i.e.

H1: There is significant difference between the post test scores of control group and experimental group of IX Class Urdu Medium Students.

Category	Sample Size	Mean	SD	df	Tabulated t-value		Obtained t-value	Level of Significance	H0
					0.05 level	0.01 level			
Control Group	30	30.83	7.17	58	2.00	2.66	3.57	Significant at both level	Rejected
Expt. Group	30	36.9	5.19						

Conclusion: The results reveal Experimental group Performance is better than control group performance. Concept mapping Strategy is more effective when compared to traditional or conventional teaching.

Objective 2: To find out the effect of concept mapping strategy with respect to Boys and Girls of IX class Urdu medium Students of Hyderabad.

Table: 2

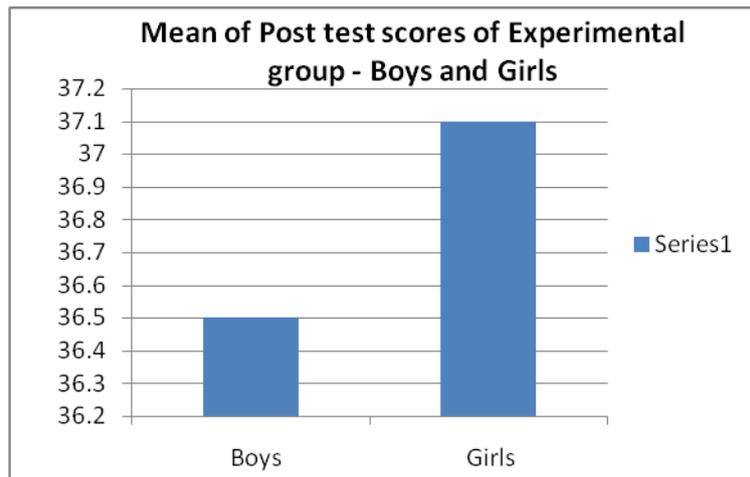


Figure: 2.1

Figure 2.1 shows mean of post test scores of girls is higher when compared to mean of post test scores of boys.

From table 2: mean of post test scores of Boys for experimental group is 36.5; SD- 4.54 and for Girls mean of Post test scores for experimental group is 37.1; SD- 5.45; Obtained t- value is 0.32 and critical t-value at 0.05 level of significance is 2.05 and at 0.01 level of significance is 2.76.

Here obtained t- value < Critical t- value; Hence Null Hypothesis is accepted i.e.

H0: There is no significant difference in the effectiveness of concept mapping strategy on the attainment of the concepts of Geography with respect to Boys and Girls of IX

Category	Sample Size	Mean	SD	Df	Tabulated t- value		Obtained t- value	Level of Significance	H0
					0.05 level	0.01 level			
Girls	20	37.1	5.45	28	2.05	2.76	0.32	Not Significant at both Level	Accepted
Boys	10	36.5	4.54						

Class Urdu Medium Students of Hyderabad

Therefore the research hypothesis is rejected.

H1: There is significant difference in the effectiveness of concept mapping strategy on the attainment of the concepts of Geography with respect to Boys and Girls of IX Class Urdu Medium Students of Hyderabad.

Conclusion: The results reveal that in the attainment of the concepts of Geography concept mapping strategy is equally effective on both boys and girls of IX class Urdu medium students of Hyderabad.

Recommendations: Finally the study recommends the use of concept mapping strategy in teaching Geography concepts. More researches should be conducted to test further effects of concept mapping as instructional method with a large number of students in different types of schools and for different age groups for other branches of social studies such as History, Civics and economics.

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