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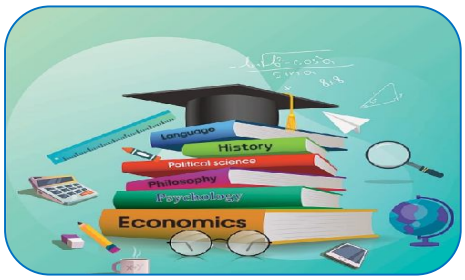
REVIEW OF RESEARCH

THE IMPACT OF CONCEPT MAPPING ON ACHIEVEMENT IN MATHEMATICS OF THE STUDENTS AT SECONDARY LEVEL



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ABSTRACT

Mathematics *is of crucial importance in today's modern society. It is very essential element in in the physical sciences, social sciences, technology, engineering, commerce, management, ICT and even in Biological sciences.etc. The students are scared of Mathematics because they find it difficult as compared to other school subjects, but this is because, their understanding of the fundamental concepts in Mathematics is not up-to the mark.*

KEYWORD : *social sciences, technology, engineering, commerce, management.*

INTRODUCTION

Concept maps are diagrammatic organization and presentation of knowledge. Use of concept maps is technique which still has not been used at large in teaching process. The teachers should be initiated to create the concepts in diagrammatic and innovate new teaching process. This paper is an attempt to describe concept maps and their impact in teaching of Mathematics and knowledge assessment.

The concept maps help to students to brainstorm and develop new ideas and help the students to integrate new concepts with old concepts. There are main four types of concept maps viz. spider map, hierarchical maps, flow charts, systems maps etc.

Though conventional methods are widely used in the Mathematics classroom, this paper focuses on the need to test the Impact of Concept Mapping on achievement in Mathematics of the students at secondary level.

RESEARCH QUESTION :

What is the effect of the inclusion of Concept Mapping in teaching of Mathematics on achievement of the students ?

OBJECTIVE :

To study the Impact of Concept Mapping in teaching Mathematics at Secondary level.

Hypothesis : H_0 – There is no significant difference in achievement of students taught Mathematical content using conventional methods and Concept Mapping.

RESEARCH METHODOLOGY:

In order to study the given objectives, the researcher has selected the following method, tools and sample.

Method: In view of the research problem, the Quasi-Experimental method was selected to carry out the research work. For this study Non-equivalent groups design was used. In nonequivalent group design, the researcher chooses existing groups that appear similar, but where only one of the groups experiences the treatment.

Tools: The Post-test (Achievement test) was used as tool to measure and compare the effectiveness of the two teaching methods. The mean scores of both the groups were compared using t-test so as to find the effectiveness of the teaching methods.

Study Sample: For this research, the sample consisted of 50 students from two divisions A and B of standard IX from Shri. Sidheshwar High school, Solapur. Twenty five students from division A and 25 students from division B were selected as study sample. Thus two groups of 25 students were formed. The Experimental group and the Controlled group, thus consisted of 25 students each.

Research Procedure: In view of the research problem, the Quasi-Experimental method was selected to carry out the research work. The Non-equivalent groups design was chosen to conduct the study. After forming the groups of 25 students both the groups were taught the Unit Operation on Sets prescribed for IX th standard Mathematics. The Experimental group was taught by using Concept mapping method and the control group was taught by using conventional method. A post test of 20 marks was conducted and the difference in Mean scores of both the groups was compared using t-test for statistical significance and the results were interpreted.

MAJOR FINDINGS:

1. The experimental group (M1= 17.68 S.D.= 2.04) obtained very higher mean than the control group (M2 = 11.40 S.D= 1.78).
2. The impact of use of Concept Mapping method was proved to be more effective than the Conventional method for teaching Mathematics at IX^{th} std. which is interpreted as highly significant.
   [t- value = 11.59 > t- alpha= 2.00 df = 48 level of significance = 0.05]
3. Students take interest and engage themselves in drawing the Concept maps and finding the linkages and relationships. They try to understand the concepts by visualization of maps.

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