



MIND MAPPING AND ACHIEVEMENT MATHEMATICS OF THE HIGHER SECONDARY SCHOOL STUDENTS

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ABSTRACT

The primary goal of teaching and learning mathematics is to encourage and enable students to recognize that mathematics is an interesting subject. The present study aims to find out the relationship between mind mapping and achievement in mathematics of higher secondary students. Fifty five higher secondary students were randomly selected as sample. Survey method was adopted for the study. The data was collected using a test on mind mapping method. Interpretation was drawn based on the findings. Mind mapping ability of the higher secondary students was found to be an average and there was a high positive correlation between mind mapping and achievement in mathematics.

KEY WORDS: *Mind Mapping, Achievement, Higher Secondary School Students.*

INTRODUCTION

Mind mapping is a way of linking key concepts using images, lines and links. A central concept is linked via lines to other concepts which in turn are linked with other associated ideas. It is similar as a technique to concept mapping and spider diagrams, the difference being that true mind mapping involves constructing a hierarchy of ideas instead of pure random association. Mind mapping uses the concept of "radiant thinking" – that is, thoughts radiate out from a single idea, often expressed as an image. Branches flow backwards and forwards from and to the central idea.

The educational literature suggests that meaningful engagement is a critical factor in promoting deeper learning. Unfortunately, some of the most common learning methods—such as listening to a lecture or reading a textbook—do not create meaningful engagement. Mind mapping, on the other hand, does create meaningful engagement because learners actively engage in the process of

brainstorming, generating ideas, and connecting concepts together while reviewing and developing mind maps. Many academic experts believe that studying using Mind Maps, through proper practice, is one of the most effective and easy ways of remembering any text or figure.

NEED AND SIGNIFICANCE OF THE STUDY

Mind mapping play an important role in teaching and learning of mathematics. Mind mapping increases the creativity and productivity of a student. It will help in categorizing and organizing the ideas brainstormed. It also identifies the relationships between different topics of the same subject. Mind mapping method stimulates students learning abilities in a better way. Mind mapping method helps students to solve the problems in order to enhance their knowledge and comprehension. This type of activity develops student's curiosity in solving mathematics



problems and successfully enhances their cognitive processes.

OBJECTIVES OF THE STUDY

1. To find out whether there is any significant relationship between mind mapping method and achievement in mathematics at the higher secondary school students.
2. To find out whether there is any significant difference between mind mapping method and achievement in mathematics at the higher secondary school students with respect to
 1. Gender
 2. Group of study
 3. Type of school

METHOD OF STUDY

Survey method was adapted for the study

Research tools

The following research tools are adopted ;

1. Mind Mapping Test (MMT)
2. Achievement Test

Sample of the study

Fifty five eleventh standard students were selected using random sampling technique from various schools of Thiruchirappalli district for this study.

Statistical techniques used

This study utilizes descriptive and differential analysis

Testing of Hypotheses

Hypothesis 1

There is no significant relationship between mind mapping method and achievement in mathematics at the higher secondary level

variables	r	Table value
problem solving ability and achievement in mathematics	0.097	0.254

(at 5% level of significance the table value 'r' is 0.254)

It is inferred from the above table that the calculated value of 'r' (0.097) is greater than the table value of 'r' (0.254) at 5% level of significance. Hence the null hypothesis is rejected. Therefore, there is a significant relationship between mind mapping method and achievement in mathematics of higher secondary students. Further, it can be stated that there exist high positive correlation between mind mapping method and

achievement in mathematics of higher secondary school students.

Hypothesis 2

There is no significant difference between mind mapping method and achievement in mathematics at the higher secondary school students with respect to Gender

Gender	N	Mean	S.D	't' value
Boys	30	23.5	4.39	0.45
Girls	25	24.2	6.27	

(at 5% level of significance the table value "t" is 1.67)

It is inferred from the above table that the calculated value "t" (0.45) is less than the table value of "t" (1.67) at 5% level of significance. Hence the null hypothesis is accepted. Therefore, there is no significant difference between mind mapping method and achievement in mathematics at the higher secondary school students with respect to Gender

Hypothesis 3

There is no significant difference between mind mapping method and achievement in mathematics at the higher secondary school students with respect to group chosen

Group of study	N	Mean	S.D	't' value
Bio-Maths	29	24.06	5.92	0.347
C.S-Maths	26	23.50	4.78	

(at 5% level of significance the table value "t" is 1.67)



It is inferred from the above table that the calculated value “t”(0.347) is less than the table value of “t”(1.67) at 5% level of significance. Hence the null hypothesis is accepted. Therefore, there is no significant difference between mind mapping method and achievement in mathematics at the higher secondary level students whose major group was

biology-mathematics and computer science – mathematics.

Hypothesis 4

There is no significant difference between mind mapping method and achievement in mathematics at the higher secondary school students with respect to type of school.

Type of school	N	Mean	S.D	‘t’ value
Govt	19	23.78	5.33	0.49
Private	36	23.60	5.47	

(at 5% level of significance the table value “t” is 1.67)

It is inferred from the above table that the calculated value “t” (0.49) is less than the table value of “t” (1.67) at 5% level of significance. Hence the null hypothesis is accepted. Therefore, there is no significant difference between mind mapping method and academic achievement in mathematics at the higher secondary school students with respect to type of school.

FINDINGS

1. 68 percentages of higher secondary students had an average level of mind mapping ability and achievement in mathematics.
2. There is high positive correlation between mind mapping and academic achievement in mathematics of higher secondary students.
3. Boys and girls higher secondary students do not differ significantly in mind mapping and achievement in mathematics.
4. Higher secondary students whose major group was biology-mathematics and computer science – mathematics did not differ significantly in mind mapping and achievement in mathematics.
5. Higher secondary students studying in government and Private schools did not differ significantly in mind mapping and achievement in mathematics.

Educational Implications

There is high positive correlation was exist between mind mapping and achievement in mathematics of higher secondary students. For improving mind mapping technique among students, teachers can adopt various teaching techniques like heuristic method, blended learning and experimental methods. Special lectures on complex concepts may be arranged to facilitates their learning, guidance programme can be provided in schools according to their knowledge level.

CONCLUSION

The purpose of the present study was to find the significance of mind mapping in mathematics of higher secondary students and this study concludes there is high positive correlation between mind mapping and achievement in mathematics of higher secondary students. In addition to recommending that teachers use mind maps in the classroom while teaching, researcher suggests having students create mind maps of their own that can be used to assess learning—and to compare their mind maps with those of their classmates for additional meaningful learning activities. The study result may be useful in the field of education, which may serve as database for further research.

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