



ORIGINAL RESEARCH PAPER

Education

ATTITUDE TOWARDS MATHEMATICS AND ACHIEVEMENT OF THE STUDENT IN MATHEMATICS AMONG SECONDARY SCHOOLS

KEY WORDS: Attitude, Mathematics, Achievement of the Student, Secondary School

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ABSTRACT

Study of Mathematics at secondary level is the foundation stage of Higher Education. Every secondary school student should study mathematics as a compulsory subject so that he/she gains a basic quantum of Mathematical knowledge as a part of general education. In the present study data have been collected from secondary students through questionnaire and their attitudes have been compared. Attitudes towards are the important determinants of academic success and achievement. In order to succeed in a subject, positive attitude towards a subject is a necessary prerequisite. The main purpose of the study was to measure relationship of attitude towards mathematics with academic achievement of the students in mathematics among 8th and 9th class secondary level students. Sample of the study consisted of 800 students out of which 400 were boys and 400 were girls. A 60-item questionnaire was self developed in the light of available literature on the subject and adaptation of another instrument, Academic achievement was measured by the marks obtained by the sample in their recently held examination in mathematics in their school. The obtained data were analyzed and interpreted using statistical tool of correlation coefficient. The result show that boys differed in their mathematical achievement from girls. Boys achieved better results as compared to girls.

1. INTRODUCTION

Mathematics now dominates almost every field of one's activities. In this age of science and Technology, it has permeated through the human life in such a way that, it has now become every man's everyday concern. Mathematics disciplines the mind, systematizes one's thought and reasoning. The subject has also rich potentialities of affording true enjoyment to its students.

Mathematics is an important subject in school curriculum. It is more closely related to one's daily life as compared to other subjects. Except one's mother tongue there is no other subject which is more closely related to one's daily life as mathematics. Mathematics is considered to be the father of all sciences. Napoleon remarked that-"The progress and improvement of mathematics is linked to the prosperity of the state". Although there is no standard definition of the term **attitude**, in general it refers to a learned predisposition or tendency on the part of an individual to respond positively or negatively to some object, situation, concept or another person.

Mathematics education is to a nation what protein is to a young human organism. As a vital tool for the understanding and application of science and technology. The choice of this topic is predicated on the current world trends and research emphasis on gender differences in learning of mathematics.

According to Reid (2006), attitudes express our evaluation of something or someone. They are based on our knowledge, feelings and behavior and they may influence future behavior. A target is essential for attitude. Our attitude is always directed towards something or someone. Attitudes are highly composite and they can affect learning comprehensively. Attitudes influence performance and performance in turn influences attitudes including attitudes.

Attitude will affect behavior, influencing what the learner selects from the environment, how he will react towards teachers, towards the material being used and towards the other students. This selection and the processing of the input of information, which follow it, are strongly influenced among other things on attitudes.

A very useful analysis was carried out by Perry (1999), and this has led to a useful framework for analyzing students' attitude to work under the four headings:

- Student's perceptions about the nature of knowledge;
- Student's perceptions about the role of the lecturer in their learning;
- Student's perceptions about their own role in learning;
- Student's perceptions about the nature and role of

assessment.

In assessing Mathematics performance and potential of students, attitudes towards Mathematics and Mathematics learning are frequently cited as factors contributing to success. Several studies have shown that positive **attitudes** are conducive to good performance. However, an individual's attitude towards Mathematics can be influenced by many factors. It is generally held that females exhibit less positive attitudes towards mathematics than males do. The foundation of success, regardless of our chosen field, is attitude

OBJECTIVES OF THE STUDY

The following objectives have been formulated related to the study:

- To study gender-wise difference in student's attitude towards mathematics for different class.
- To study is there any relationship between attitude and achievement of a student in mathematics for different class.

HYPOTHESES OF THE STUDY

Keeping in view the above objectives of the study, the following hypotheses have been framed.

Hypthesis1: There will be a significant difference in the attitude levels of high school students towards learning mathematics with respect personal variable viz. like Gender, and class.

Hypothesis 2: There exists a positive relation between achievers in Mathematics and their attitude towards the mathematics subject.

METHODOLOGY:

To obtain data, an instrument Mathematics Attitude Scale (MAS) has been developed by the investigators. MAS consist of 60 items. The instrument uses five point scale – strongly disagree, disagree, undecided, agree and strongly agree. For achievement, their marks in mathematics examination have been considered.

RESULT:

Hypothesis1: There will be a significant difference in the attitude levels of high school students towards learning mathematics with respect personal variable viz. like Gender, and class.

Table 1 shwing the result of 't' test with respect variable gender for 9th class students

9th class	Variable	N	Mean	S.D	T	Sig.
Gender	Girls	200	189.51	16.69	8.12**	0.01
	Boys	200	201.5	12.54		

**Significant at 0.01 levels

It could be observed from table-4.4 that the mean scores of the Girls and Boys groups could able to bring the 't' value significant for attitude levels of high school students towards learning mathematics with respect gender. The calculated mean value of the Boys students is higher than the Girls mean on attitude levels of students towards learning mathematics. Its goes to significant value.

Table 2 shwing the result of 't' test with respect variable gender for 8th class students

8th class	Variable	N	Mean	S.D	T	Sig.
Gender	Girls	200	185.82	24.99	8.78**	0.01
	Boys	200	209.17	28.07		

**Significant at 0.01 levels

The obtained t values for the respect variable gender are significant at 0.01 levels of the table value. The results indicate that the Boys 8th class student have shown high value compare to Girls students. Which mean diffirence is the 24 mean points Therefore the hypothesis is accepted in this case. Boys student are facing lower difficulty learning in mathematics.

Table 3 Shwing the result of 't' test with respect variable different class

Overall	Variable	N	Mean	S.D	T	Sig.
Class	8th class	400	197.05	15.57	2.91*	0.05
	9th class	400	200.01	12.54		

**Significant at 0.05 levels

The table 3 indicates that there is a significant difference between the 8th class and 9th class students in their attitude level towards the difficulty leaning in mathematics. The mean of the 9th class students is higher than 8th class student in attitude level towards the difficulty learning in mathematics. i.e. 9th class students (66.67%) have low level difficulties learning in mathematics compare to 8th class students. Hence the hypothesis is accepted Hypothesis 2: There will be no significant relationship between the Attitude towards mathematics and achievements of students of 8th class in mathematics subject

Table 4.1: Showing the results of 'r' between the Attitude towards mathematics and achievements of students of 8th class Students in relation to personal variable.

Sl.No	Name of the Variable	Category (8 th class)	N	R	Sign
1	Gender	Boys	200	0.22	*
		Girls	200	0.34	**

*Significant at 0.05 level, **Significant 0.01 levels

Table 4.2: Showing the results of 'r' between the Attitude towards mathematics and achievements of students of 9th class Students in relation to personal variable.

Sl.No	Name of the Variable	Category (9 th class)	N	R	Sign
1	Gender	Boys	200	0.38	**
		Girls	200	0.40	**

**Significant 0.01 levels

The results presented in Table- 4.1 & 4.2 reveal a positive significant relationship between Attitude towards mathematics and achievements of students in relation variables gender. In 8th class students boys are 0.05 level significant relationships between the Attitude towards mathematics and achievements of students remain are significant at 0.01 levels.

CONCLUSION:

The result show that boys differed in their mathematical achievement from girls. Girls achieved better results as compared to boys.

A lot need to be done to fill this gender gap in mathematics achievement. Male and female students should make the competitive environment, coordinate and exchange their knowledge from one another in mathematics teaching and learning. Girls students should be informed the importance of mathematics and it is the basic tool for further education.

Mathematics teaching and evaluation strategies should be bias-free. This way, males and females will tend to see themselves as equals, capable of competing and collaborating in classroom activities.

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