



ATTITUDE OF HIGH SCHOOL STUDENTS TOWARDS MATHEMATICS: A COMPARATIVE STUDY



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ABSTRACT

The purpose of this study is to compare the high school students attitude towards mathematics. A total of 160 high school students were selected random-cum-purposive basis. The results of the study indicated that the high school students' had positive attitude towards mathematics and significant difference were observed in the attitude of male and female government school students towards mathematics. Furthermore, significant differences in the attitude of male and female private school students were found. There existed significant difference in the attitude of male government and private school students towards mathematics. There existed significant difference in the attitude of female government and private school students towards mathematics. So, it is the joint responsibility of parents, teachers, society and government machinery to provide proper platform for the development of mathematical knowledge and skills so that without any differences every student feel comfort to use mathematics in their day to day life.

KEYWORDS: Attitude, High School Students, Mathematics.

INTRODUCTION

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. The way that mathematics is represented in the classroom and perceived by students, even when teachers believe they are presenting it in authentic and context dependent way stands to alienate many students from mathematics.

Attitude towards mathematics plays a crucial role in the teaching and learning processes of mathematics. The teaching method, the support of the structure of the school, the family and students' attitude towards school affect the attitudes towards mathematics. Mathematics in the real sense is a science of space and quantity that helps in solving the problems of life needing numeration and calculation. It provides opportunities for the intellectual gymnastic of the man's inherent powers.

The influence of the teacher on the pupil is not confined to imparting of subjects knowledge alone, but goes further to play a part in the total development of the child. In the present curriculum every attempt in being made to include mathematics as an integral part of school education to develop the speed and accuracy in doing numerical problems, an ability for abstract, an ability of logical reasoning, an ability for spatial concepts and so on. However the mathematics achievements education in schools and colleges largely do not cater to aims and objectives of mathematics education as specified by many educational commissions and committee. A child under the pressure of parents or teachers selecting a professional course will be a failure in that area without attitude in that field. So it is responsibility of teachers and parents to guide their children according to their attitude. Modern education must not responsibility of developing more rote learning, but also nurtures the ability of children to produce relevant new meaning to their class-room



experiences. Hence along with promoting educational achievement it is obligatory on the part of the school to equip the child with the skill of logical thinking and reasoning which will enable him to cope effectively with whatever state of the world he will encounter later in life.

REVIEW OF RELATED LITERATURE

Booker, Briggs, Davey and Nisbett (1992) reported in their study that majority of the students love mathematics but those who dropout due to mathematics have a different viewpoint about it. It leads towards the fact that mathematics is a rough and tough subject. It is the attitude of the student which contributes a lot towards his perception about mathematics. It develops the adaptability and applicability in the learners.

Burstein (1992) found that there is a direct link between students' attitudes towards mathematics and student outcomes.

Barnes and Horne (1996) were of the view that poor mathematical skills in women deprived them from a large number of professions because in some countries mathematical background knowledge is the pre requisite for entrance in any profession. They stressed that sex differences are the serious concerns for the communities.

Ma and Kishor (1997) found that attitude towards mathematics and achievement in mathematics was positively and reliably correlated but not strong. The correlation was not statistically significant.

Cheung (1998) reported positive correlation between attitude and mathematics achievement. The correlation showed that the more positive the attitude, the higher the level of achievement in the student.

Nicolaidou & Philippou (2003) conducted a study entitled, "Attitudes towards mathematics, self-efficacy and achievement in problem solving" found that there is no significant difference between attitude towards mathematics among male and female students.

Schenkel (2009) in his study found that elementary school pupils, positive correlation between student attitude and student performance was found. Student beliefs and attitudes were found to have the potential to either facilitate or inhibit learning.

STATEMENT OF THE PROBLEM

Attitude of High School Students towards Mathematics: A Comparative Study

OBJECTIVES OF THE STUDY

The following objectives were formulated for present study:-

1. To study the attitude of high school students towards mathematics.

2. To study the difference in the attitude of male and female government school students towards mathematics.
3. To study the difference in the attitude of male and female private school students towards mathematics.
4. To study the difference in the attitude of government and private male school students towards mathematics.
5. To study the difference in the attitude of government and private female school students towards mathematics.

HYPOTHESES OF THE STUDY

1. High school students have positive attitude towards mathematics.
2. There will be no significant difference in the attitude of male and female government school students towards mathematics.
3. There will be no significant difference in the attitude of male and female private school students towards mathematics.
4. There will be no significant difference in the attitude of male government and private school students towards mathematics.
5. There will be no significant difference in the attitude of female government and private school students towards mathematics.

DELIMITATIONS OF THE STUDY

1. The study was delimited only to one district of Himachal Pradesh i.e. Bilaspur.
2. The study was delimited only to 10th class students.

METHODOLOGY

In the present study, descriptive survey method was used by the investigator.

SAMPLE

For present study, 160 high school students were selected from one district of Himachal Pradesh i.e. Bilaspur. Out of 160 students, 80 male high school students and 80 female high school students were selected random-cum-purposive basis from 10 schools.

TOOL USED

For the present study the investigator used 'Attitude towards Mathematics Scale' developed by Dr. S.C. Gakhar and Rajni (2003).

COLLECTION OF DATA

The questionnaires were individually administered to the students through personal contact. The researcher visited the different high schools, met the

students and established the rapport with them. The purpose of investigation was discussed with students. Having established rapport, the students were given the questionnaires with cover notes requesting them to answer the questionnaires as required and filled up questionnaires were collected from the students on the spot by the researcher.

STATISTICAL TECHNIQUES USED

In present study percentage, mean, standard deviation and t-test were used.

ANALYSIS AND INTERPRETATION OF DATA

Hypothesis-I:-

High school students have positive attitude towards mathematics.

Table -1.1 Attitude of high school students towards mathematics (N=160).

Type of attitude	Number of students	Percentage
Negative	50	30.00
Positive	110	70.00
Total	160	100

It can be observed from the table no. 1.1 that 70% high school students have positive attitude towards mathematics, while 30% have negative attitude. From the analysis of the data it can be concluded that majority of the students have positive attitude towards mathamatics.

Hence, the Hypothesis I, “High school students have positive attitude towards mathematics”, stands accepted.

Hypothesis –II:-

There will be no significant difference in the attitude of male and female government school students towards mathematics.

Table 1.2 Mean differences between male and female government school students on attitude towards mathematics.

Gender	N	Mean	S.D	t-value	Inference
Male	80	21.56	2.98	3.96	significant at 0.01 level
Female	80	18.95	3.39		

It can be observed from table no. 1.2 that mean scores of attitude of male & female government school students towards mathematics are 21.56 & 18.95 with S.D 2.98 & 3.39 respectably. The ‘t’ value comes out to be 3.96, which is significant at .01 level. It means that male and female government school students differed significantly in their attitude towards mathematics. The reason may be female students have low interest in the subject. Hence,

the Hypothesis II, “There will be no significant difference in the attitude of male and female government school students towards mathematics,” stands rejected.

Hypothesis- III

There will be no significant difference in the attitude of male and female private school students towards mathematics.

Table 1.3 Mean differences between male and female private school students on attitude towards mathematics.

Gender	N	Mean	S.D	t-value	Inference
Male	80	24.38	4.42	2.68	significant at 0.01 level
Female	80	18.47	4.98		

It can be observed form table no. 1.3 that mean scores of attitude of male and female private school students towards mathematics are 24.38 & 18.47 with S.D 4.42 & 4.98 score. The ‘t’ value comes out to be 2.68, which is significant at 0.01 level. It means that male and female private school students differed significantly in their attitude towards mathematics.

Hence, the Hypothesis -III, “There will be no significant difference in the attitude of male and female private school students towards mathematics,” stands rejected.

Hypothesis-IV:-

There will be no significant difference in the attitude of male government and private school students towards mathematics.

Table 1.4 Mean differences between male government and private school students on attitude towards mathematics.

Type	N	Mean	S.D	't' value	Inference
Government	75	13.64	5.96	3.52	significant at 0.01 level
Private	85	12.28	5.36		

It can be observed from table no. 1.4 that mean scores of attitude of male government and private school students towards mathematics are 13.64 & 12.28 with S.D 5.96 & 5.36 respectively. The 't' value comes out to be 3.52, which is significant at 0.01 level. It means that male government and private school students differed significantly in their attitude towards mathematics.

Hence, the Hypothesis -IV, "There will be no significant difference in the attitude of male government and private school students on attitude towards mathematics towards mathematics," stands rejected.

Hypothesis-V

There will be no significant difference in the attitude of female government and private school students towards mathematics.

Table 1.5 Mean differences between female government and private school students on attitude towards mathematics.

Type	N	Mean	S. D	't' value	Inference
Government	90	15.31	4.18	3.86	significant at 0.01 level
Private	70	17.70	4.57		

It can be observed from table no. 1.5 that mean scores of attitude of female government and private school students towards mathematics are 15.31 & 17.70 with S.D 4.18 & 4.57 respectively. The 't' value comes out to be 3.86, which is significant at 0.01 level. It means that female government and private school students differed significantly in their attitude towards mathematics. Hence, the Hypothesis -V, "There will be no significant difference in the attitude of female government and private school students towards mathematics," stands rejected.

attitude towards it. Mathematics teachers ought to create interesting and non-threatening environment in their mathematics classroom and model enthusiasm for the teaching and learning of the subject. This may go a long way to help students to develop positive attitude towards the subject, learn it without any inhibition and hence improve their performance. While teaching in the classrooms gender differences should also be taken into care. Therefore, it is the joint responsibility of parents, teachers, society and government machinery to provide proper platform for the development of mathematical knowledge and skills so that without any differences every student feel comfort to use mathematics in their day to day life.

MAIN FINDINGS

1. High school students have positive attitude towards mathematics.
2. There exists significant difference in the attitude of male and female government school students towards mathematics.
3. There exists significant difference in the attitude of male and female private school students towards mathematics.
4. There exists significant difference in the attitude of male government and private school students towards mathematics.
5. There exists significant difference in the attitude of female government and private school students towards mathematics.

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CONCLUSION

Therefore, it is important and imperative for mathematics teachers to develop positive attitude towards the subject and make mathematics interesting and appealing to students in order to develop a positive

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