

Attitude of Secondary School Students' Towards Mathematics

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ABSTRACT

Mathematics is one of the main subject of our life. Information about mathematics helps to make better choices in everyday life. So mathematics knowledge become most important now a days. present study intended to find the Attitude of secondary school students towards mathematics in Jajpur district of Odisha, India. The study adopted a descriptive survey research design. 100 secondary school students were selected through a purposive sampling procedure. The data was collected by the Attitude Towards Mathematics Scale (A T M S) developed by Dr. S.C. Gakhar, and Rajni, to measure the attitude of secondary school student's towards mathematics. The findings of the study revealed that private secondary school students have more positive attitude towards mathematics than government secondary schools. It also found that girl students have more positive attitude than boys.

Keywords- Attitude Towards Mathematics, Secondary School Students.

I. INTRODUCTION

In today's world where science and technology are rapidly developing, mathematical knowledge is increasingly needed. Because mathematics is the basis of all major technologies. Therefore, all students should learn mathematics. A positive attitude at the secondary level helps students learn mathematics concepts with great interest. On the other hand, a negative attitude causes fear of mathematics. Previous research has shown that student attitudes play an important role in mathematics learning and school success. A study by Wakhata, Mutarutinya, and Balimuttajjo (2022) showed that students' attitudes toward word problems in linear programming mathematics were generally negative. Thapa and Paudel (2020) found in their study that the majority of boys and girls were encouraged by their parents to enroll in science and choose mathematics. Both boys and girls have positive and good attitudes towards mathematics. The study conducted by Atan and Kasmin (2017) was an important result for most mathematics teachers in technical colleges to better understand the

attitudes of technical college students towards mathematics and plan their teaching methods accordingly. Yasar (2015) found in her study that there was no significant difference between the gender of students and the gender of mathematics teachers. Asante (2012) found that boys have more positive attitudes towards mathematics than girls.

Need of the study

Mathematics is a tool that may help you solve difficulties in everyday life. As a result, mathematics has been regarded as one of the most significant allied subjects in the secondary school curriculum. Mathematics is a huge subject since it serves as the foundation for the sciences, arts, and many aspects of daily life. If secondary pupils have a favorable attitude toward mathematics, their success in mathematics is quite likely to improve. As a result, their attitude is critical to their mathematical learning.

Objectives of the study

The following objectives were formulated related to the study:

- ❖ To find out the level of attitude of secondary school students towards mathematics.
- ❖ To find out the difference between government and private secondary school students' attitude towards mathematics.
- ❖ To find out the difference between male and female attitude towards mathematics in secondary schools.

Hypothesis of the study

The following hypotheses were formulated by the above objectives:

- ❖ There is no significant difference between government and private secondary school students' attitude towards mathematics.
- ❖ There is no significant difference between male and female secondary school students' attitude towards mathematics.

Delimitation of the study

1. The study is delimited to Jajpur district of Odisha only.
2. The study is delimited to only secondary school students.
3. The study is delimited to 100 students of government and private secondary schools.

II. METHODOLOGY

Design of the study

The study followed a descriptive type of survey design concerned with extensive collection of data regarding attitude towards mathematics.

Sample of the study

The samples were selected through a purposive sampling technique. The investigator collected data from 100 students, 50 from government upgraded project high

school, Solara, Jajpur from which 25 are girls and 25 are boys, and 50 from DU Public school, Chandikhol, Jajpur from which 25 are girls and 25 are boys.

Tool used for data collection

The investigator used the Attitude Towards Mathematics Scale (A T M S) developed by Dr. S.C. Gakhar, And Rajni, Department of Education Punjab University Chandigarh (1985: RakhiPrakashan; Agra) to measure the attitude of secondary school student's towards mathematics. It consists of 46 items that examine the student's attitude about wider applicability, development of skills, reasoning, objectivity, intellectual development, non-intellectual development, individual outlook and universal outlook about mathematics. Each item on the scale was provided with 5 alternative options. The weight ranging from 5 (strongly agree) to 1 (strongly disagree) were given for positive or favourable statements whereas for negative or unfavourable statements, the range of weights was reversed i.e. from 1 (strongly agree) to 5 (strongly disagree). The attitude score of a subject is the total of scores of all items in the scale.

III. RESULTS AND DISCUSSION

Level of Attitude of secondary school students towards mathematics

The scores obtained by students of secondary schools of Jajpur district in the attitude towards mathematics scale (ATMS) are used to calculate Mean and Standard deviation.

From the above table, the calculated mean and SD values of the entire sample are found to be 144.08 and 23.71 respectively.

Table 1: Mean and standard deviation scores of the attitude of secondary school students towards mathematics.

VARIABLE	N	MEAN	SD
Attitude Towards Mathematics	100	144.08	23.71

With the help of cut-off point, the researcher determined the levels of attitude of secondary school students. Here the cut-off is Mean \pm 2SD. As per this, the investigator considered students with score above Mean+2SD as extremely favourable whereas scores below Mean-2SD are extremely unfavourable. Similarly, the students with score lying between Mean+ 1SD and

Mean+2SD are considered as mostly favourable. The investigator classified the students as having scores between Mean+1SD and Mean- 1SD under a moderate level of attitude. Scores of students lying between Mean-1SD to Mean-2SD are considered as mostly unfavourable. The table below shows the levels of attitude of secondary school students towards mathematics.

Table 2: Levels of Attitude

SL No.	Categorization Process	Range of Scores (Round off)	Level of Attitude	No. of students	Percentage (%)
1	Mean + 2SD and Above	191 and Above	Extremely Favourable	2	2%
2	Mean + 1SD to Mean + 2SD	168 to 190	Mostly Favourable	18	18%
3	Mean score to Mean + 1SD	144 to 167	Moderately Favourable	34	34%
4	Mean score to Mean -	120 to 143	Moderately	26	26%

	1SD		Unfavourable		
5	Mean -1SD to Mean – 2SD	119 to 97	Mostly Unfavourable	17	17%
6	Mean –2SD and Below	96 and Below	Extremely Unfavourable	3	3%

From table 2, it can be inferred that about 34 students i.e. 34% of the sample have moderately favourable attitudes whereas 26 students i.e. 26% have moderately unfavourable attitudes towards mathematics.

Only 2 students i.e. 2 % of students have an extremely favourable attitude. Similarly, 3 students i.e. 3% of students have extremely unfavourable attitudes towards mathematics.

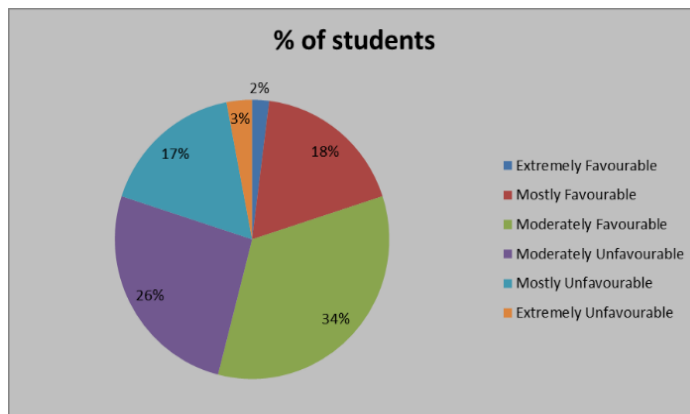


Figure 1: Levels of Attitude

Objective: To Compare the attitudes of secondary school students towards mathematics in relation to govt. and private institution

Hypothesis: There is a significant difference between the attitude of private and government secondary school students towards mathematics.

Table 3

Groups	N	Mean	Sd	Df	't' Value	Level of Significance
Private School	50	161.08	16.42	98	10.29	Significance At 0.05 Level
Govt. School	50	127.08	16.62			

The above table reveals that the obtained t-value of 10.29 is greater than the table value at 0.05 levels of significance. Here the mean of private school is 161.08 and government school is 127.08. The standard deviation for private secondary school students is 16.42 and for govt. secondary school students are 16.62. The 't' value

is 10.29 which is significant at 0.05 level of significant. This means that there is a significant difference between the attitude of private and government secondary school students towards mathematics. Hence the null hypothesis is rejected.

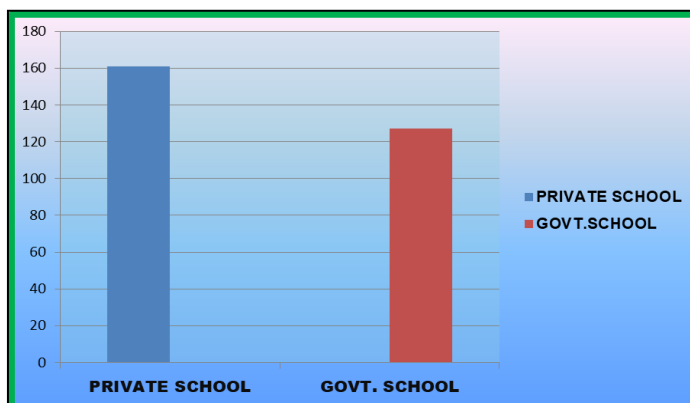


Figure 2

Objective: To compare the attitude towards mathematics in relation to gender.

Hypothesis: There is significant difference of attitude

regarding mathematics between male and female secondary school students.

Table 4

Groups	N	Mean	Sd	Df	t Value	Level Of Significance
Female	50	147.72	21.96	98	4.81	Significance At 0.05 Level
Male	50	140.26	26.04			

Here 't' value is 4.81 is greater than the table value at 0.05 level of significance. Here the mean of female students is 147.72 and male students is 140.26. The standard deviation for female is 21.96 and the standard deviation for male is 26.04. The t value is 4.81

which is significant at 0.05 level. This means there is a significant difference in attitude regarding mathematics between male and female secondary school students. Thus the null hypothesis is rejected.

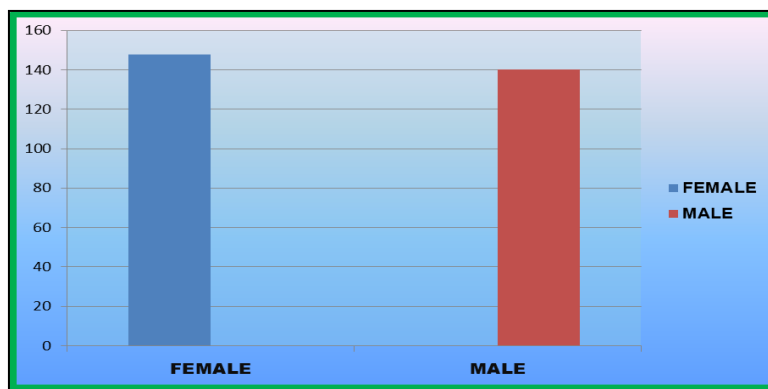


Figure 3

Findings of the study

From statistical analysis, the major findings of the study can be summarized as follows:

- ❖ The present study found that majority of respondents i.e. 60% of respondents have moderate attitude towards the mathematics of which 34% possess moderately favourable attitude and 26% possess moderately unfavourable attitude.
- ❖ 18% of students show mostly favourable attitude and 17% of students show mostly unfavourable attitude towards mathematics.
- ❖ 2% of respondents possess extremely favourable attitude whereas 3% of respondents possess extremely unfavourable attitudes.
- ❖ So it can be said that the secondary school students of Jajpur district have neither more favourable nor unfavourable attitude but satisfactory attitude towards Mathematics.
- ❖ The present study found that there is significance difference between the attitude of govt. secondary school students and private secondary school students towards mathematics. Private secondary school students' have more positive attitude towards mathematics.
- ❖ The present study found that there is significance difference between the attitude of boys and girls of secondary schools towards mathematics. Girl

students show more positive attitude towards mathematics.

IV. CONCLUSION

Mathematics is the fundamental part of human thoughts and logic, it provides a disciplined mind and an effective way of thinking. Parents, Teachers and society at large have the opportunity to dispel negative stereotypes and myths about mathematics, encouraging students to have a go with mathematics without fear, and hard work will bring about improvement and excellent achievement.

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