



## THE ATTITUDE OF SECONDARY LEVELS STUDENTS TOWARDS MATHEMATICS IN WEST BENGAL: AN ANALYTIC DISSCUSSION

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### Abstract

Mathematics is the science of quantity. Every secondary school student should study the mathematics as a compulsory subject so that he/she gains a basic quantum of Mathematical knowledge as a part of general education. The present study intended to the find out the nature of attitude towards mathematics and the differences attitude of mathematics strata wise (locality & Gender). Researcher framed three null hypotheses. 200 students of secondary level(X) from two districts of WB was considered as sample and to accidental sampling was used for sample selection. Researcher developed a tool to measure attitude towards mathematics. The validity and reliability was estimated by applying Test-Retest Method and they was found sufficient for the study. After collection of data 't' test was applied for testing hypotheses. Two null hypotheses was rejected, and one hypothesis are accepted, hence it was found that significant differences existed grade wise and locality wise among the school students.

**Keywords:** Mathematics, Secondary Students, Attitude.

### Introduction

**“Mathematics should be taught on a compulsory basis to all pupils as a part of general education during the first ten years of schooling”**

**-Indian education commission (1964-66)**

The word Mathematics derived from the Greek word ‘**Mathema**’ that means ‘to learn’. The knowledge of mathematics is an essential tool in our society. It is a tool that can be used in our daily life to overcome the difficulties faced. Due to this mathematics has been considering as one the most important core subject in a school curriculum. Performance in the subject is crucial for students’ admission to scientific and technological professions.

In particular, mathematics knowledge is necessary for secondary school students, it is very useful for higher education. At secondary level, attitude of mathematics is very important role for the learning mathematical concept with interest. There some elements to learn any subject, like attitude, learning achievement, aptitude, interest, age etc. This major elements influence the education process deeply. In this paper, the attitude of learner is taken as a important elements. If there is positive attitude of a student to any particular subject then the student can acquire more knowledge from that particular subject. It can also be mentioned that positive attitude of a learner has great importance in learning mathematics as well as the negative attitude has the strong impact in learning math.

### Review of related literature

The following review had been arranged according to the merit of importance and relevance to the present study as decided by the researcher:

Subita Mahanta (2008) has studied the attitude of secondary students towards mathematics and its relationship to achievement in mathematics. Though Mahanta wants to find out the attitude towards mathematics among boys’ and girls’ student in secondary level but Mahant has found a significant difference between the attitude boys’ and girls’ student towards mathematics. Subita Mahanta finding showed that the attitude of boys towards mathematics is better and high than girls student.

A. Rosaly (2007) conducted a study the relationship between attitude of students towards mathematics and achievement. It has found by the Rosaly findings that, there is a high co-relation between the attitude of higher secondary levels students and their achievement learning mathematics. The attitude of the students of urban area towards mathematics is more positive than the students of rural area.

Thomas (2006) conducted a study to determine the Attitude towards Mathematics and achievement by combining co-operative learning strategies with instruction delivered using an Integrated Learning System (ILS). Sixty five fifth grade students were randomly divided in two groups, co-operative and individual. Result revealed that students using on ILS for mathematics instruction performed better on standardized tests and were more positive towards math and they worked in co-operative groups than when they worked on the same individually.

Xin Ma and Jianymin (2004) conducted a study to determine the casual ordering between Attitude towards Mathematics and achievement in mathematics of secondary school students. Results showed the achievement demonstrated casual



predominance over attitude across the entire secondary school. Gender difference in this casual relationship was not found but elite status in mathematics moderated this casual relationship.

### Significance of the study

The world is being changed rapidly by the time and our society is being developed through this change. Now, it is very necessary to change human life according to the progress and development of society. The knowledge of Mathematics helps directly and indirectly to change human life and behavior. The knowledge of Mathematics also helps a man in different way in his life. So, learning of mathematics is very essential to develop human life. In this regard, the researcher wants to know the attitude of secondary level students towards math.

### Definition of the Terms Used

**Attitude:** It is referred as the tendency to react favourable/ positive or unfavourable/negative towards a mathematics subject.

**Secondary School:** The secondary school consists of X standard students in the West Bengal Educational system. It was followed by West Bengal board of secondary education syllabus. The present study only selected X standard students.

**Mathematics:** Mathematics has the four fundamental operations of addition, subtraction, multiplication and division. Mathematics subject covers the topics such as real number system, algebra, algorithms, geometry, menstruation, probability, graphs and statistics at secondary level.

### Objectives

The researcher considered the followings as the objectives of the study:

- To find out the nature of attitude towards mathematics.
- To develop a tool for measuring attitude of mathematics of secondary students.
- To find out the differences attitude of mathematics education strata wise.(locality, gender)
- To measure the attitude towards mathematics of secondary level students.

### Hypothesis

The following hypothesis has been made by the researcher for the study:

**Ho.1:** There are no significant differences of the mean score of attitude towards mathematics between boys and girls in secondary students.

**Ho.2:** There exists no significant difference of attitude towards mathematics between urban and rural students in secondary level.

**Ho.3:** There are no significant differences of attitude towards mathematics between urban and rural boys student in secondary level.

### Variables of the Study

- **Dependent Variable:** attitude towards mathematics
- **Independent Variable:** Gender, Location of student

### Limitations of the Study

The present study has the following limitations.

- The investigator selected only two hundred (200) secondary standard students in Nadia, North 24pargana district in West Bengal for the present study.
- The investigator selected only 4 schools in Nadia, North 24pargana district.

**Sample:** 200 secondary level (ten grades) students from Bengali medium school in the district of Nadia and north 24 Pargana in West Bengal was considered and purposive sampling was used for sample selection. The distribution of the samples had been presented table-1

**Table-1: Showing the Distribution of Sample**

Localities	Group of Students		Total
	Boys student	Girls student	
Rural	66	34	100
Urban	79	21	100
Total	145	55	200

**Tools Used:** Researcher developed a tool to measure attitude of secondary level students towards mathematics. After item analysis 40 items was selected. The validity and reliability was estimated by applying Test-Retest Method and they was found sufficient for the study. Five point attitude scales was used, which contains 40th statements, among 40 statements, 30statements was positive & other 10 statements were negative to know the level of attitude about mathematics.



**Statistical Analyse** After collecting data researcher used different descriptive and inferential statistics. The mean, standard deviation and t- test were used for analyzing the data.

### Testing of Hypothesis

#### Hypothesis: 1

**Table-2: 't'-test: Attitude towards Mathematics between boys and girls students**

Group	No. of Participants	Mean	SD	df	't' value
Boys student	145	89.52	14.00	198	0.992
Girls student	55	89.54	13.77		

**\*\*Not Significant**

Here the score of 't' is more than the calculated value, so the result is no significant. Therefore the above said null hypothesis is acceptable, so it can be said that there are no significant differences of attitude towards mathematics between boys and girls in secondary students.

#### Hypothesis-2

**Table-3: 't' attitude towards mathematics between urban and rural students in secondary level**

Group	No. of Participants	Mean	SD	df	't' value
Urban students	100	93.24	13.89	198	9.32
Rural students	100	85.62	12.97		

**\*\*Significant at 0.05 level**

Here the score of 't' is less than the calculated value, so the result is significant. Therefore the above said null hypothesis is rejected, so it can be said that there are exist significant differences of attitude towards mathematics between urban and rural students in secondary level.

#### Hypothesis-3

**Table-4: 't' attitude towards mathematics between urban and rural boys student in secondary level.**

Group	No. of Participants	Mean	SD	df	't' value
Urban boys student	66	95.52	12.03	143	9.12
Rural boys student	79	84.52	13.57		

**\*\*Significant at 0.05 level**

Here the score of 't' is less than the calculated value, so the result is significant. Therefore the above said null hypothesis is rejected, so it can be said that there are exist significant differences of attitude towards mathematics between urban and rural boys student in secondary level.

**Findings:** On the basis of the statistical analysis and interpretation of the findings of present study could be reiterated as below:

1. There are no significant differences of attitude towards mathematics between boys and girls in secondary students.
2. There are significant differences of attitude towards mathematics between urban and rural students in secondary level.
3. There are exist significant differences of attitude towards mathematics between urban and rural boys student in secondary level.

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