# A STUDY ON ATTITUDE TOWARDS MATHEMATICS AND ACHIEVEMENT IN MATHEMATICS AMONG HIGHER SECONDARY STUDENTS

**By**

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**Abstract**

*The present study investigated the relationship between attitude towards mathematics and achievement in mathematics among higher secondary students. The objectives of the study were 1) to find out the level of attitude towards mathematics among higher secondary students. 2) to find out the level of achievement in mathematics among higher secondary students. 3) to find out the relationship between attitude towards mathematics and achievement in mathematics among higher secondary students. The investigator used the normative survey method. The samples of the study were 300 higher secondary students of Kanyakumari District. The tools used for the study were the attitude towards mathematics scale (developed by Monith and Sreeletha, 2024) and academic achievement marks in mathematics. The statistical techniques employed were percentage analysis and Pearson's product-moment correlation analysis. The major findings of the study revealed that 1) the level of attitude towards mathematics among higher secondary students was at a moderate level. 2) the level of achievement in mathematics among higher secondary students was at a moderate level. 3) the relationship between attitude towards mathematics and achievement in mathematics among higher secondary students showed a negligible correlation.*

***Keywords:*** *attitude, mathematics, achievement, and mathematics.*

## Introduction

Mathematics is considered the foundation of logical reasoning, problem-solving, and analytical thinking. It plays a crucial role in the academic development of students and serves as a gateway to many career opportunities in science, technology, engineering, and finance. Despite its importance, students' attitudes towards mathematics vary widely, influencing both their performance and long-term interest in the subject.

Attitude towards mathematics refers to a learner's positive or negative feelings, beliefs, and behavioural tendencies towards learning mathematics. It encompasses factors such as self-confidence, anxiety, enjoyment, and perceived usefulness. Research suggests that students who hold a positive attitude towards mathematics are more likely to engage with the subject

actively, persist in solving problems, and ultimately perform better.

At the higher secondary level, students face increased academic challenges, and their attitude towards mathematics can significantly impact their academic achievement. During this crucial stage of education, understanding the relationship between students' attitudes and their mathematical performance can provide valuable insights for educators, curriculum planners, and parents.

This study aims to explore the nature of higher secondary students' attitudes towards mathematics and how these attitudes correlate with their academic achievement in the subject. It also seeks to identify patterns or differences based on variables such as gender, medium of instruction, and type of school management.

Through this investigation, the study hopes to highlight the importance of fostering a positive mathematical mindset and to suggest educational strategies that can improve both students' attitudes and academic outcomes in mathematics..

**Need and Significance of the Study**

Mathematics is a core subject that not only contributes to academic success but also shapes critical thinking and decision-making skills necessary for everyday life. Despite its central role, many students experience difficulty and anxiety when engaging with mathematics, which may stem from their attitudes toward the subject. These attitudes can influence both motivation and performance, making it essential to understand their impact on academic achievement especially at the higher secondary level, where subject choices and career paths begin to take shape.

The higher secondary stage is a crucial period in a student's academic journey. The pressure of board examinations, competitive entrance tests, and the transition to higher education makes mathematics achievement particularly significant. During this stage, students' attitudes toward mathematics may be influenced by a range of factors, including prior performance, teacher-student relationships, peer influence, classroom environment, and parental expectations. A negative attitude may lead to low self-confidence, math avoidance, and poor achievement, while a positive attitude may enhance engagement and success.

By exploring these aspects, the study will contribute valuable knowledge that can be used to improve mathematics education and learning outcomes at the higher secondary level. Ultimately, fostering a positive attitude toward mathematics can lead to higher achievement, better academic choices, and greater career opportunities for students. Hence, the investigator stated this problem as a study on attitude towards mathematics and achievement in mathematics among higher secondary students in Kanyakumari district.

**Statement of the Problem**

The statement of the problem is entitled "A Study on Attitude towards Mathematics and Achievement in Mathematics among Higher Secondary Students".

**Objectives**

1. To find out the level of Attitude towards Mathematics of higher secondary students.
2. To find out the level of Achievement in Mathematics of higher secondary students.
3. To find out the relationship between Attitude towards Mathematics and Achievement in Mathematics of higher secondary students.

**Hypotheses**

1. The Attitude towards Mathematics among higher secondary students is at a moderate level.
2. The Achievement in Mathematics among higher secondary students is at a moderate level.
3. There is no significant relationship between Attitude towards Mathematics and Achievement in Mathematics of higher secondary students.

**Delimitations of the Study**

- The present study is restricted to Kanyakumari district.
- The sample has been limited to 300 higher secondary students.
- The present study is confined to only higher secondary students.
- The present study is limited to students in the age groups of 16 and 17 only.

**Review of Literature**

Grover (2024) conducted a study on "Adolescents Attitude towards Mathematics in Relation to their Mathematics Achievement". The major objective of the study was to find out the attitude towards mathematics in relation to their mathematics achievement of adolescents. 200 adolescents randomly selected from the government schools of Chandigarh comprised the sample of the study. Scale of Attitude towards mathematics by Thakur (2009) and mathematics achievement scores of students of the previous class were used for data collection. Descriptive and differential statistics were used for data analysis. The findings of the study revealed that adolescent girls have favourable attitude towards mathematics than their counterparts, adolescent boys of government schools. But, there was no significant gender difference found in the mathematical achievement of adolescents. Moreover, attitude towards mathematics was neither significantly nor positively related to mathematical achievement.

Anandhi (2022) conducted a study on "Attitude towards Mathematics and Achievement in Mathematics of High School Students". The major objective of the study

was to find out the relationship between Attitude towards Mathematics and Achievement in Mathematics of High School Students. The survey method is adopted. A sample of 300 High School Students from the Kanyakumari district was selected using a stratified random sampling technique. In order to study the Attitude towards Mathematics of the students the investigator has developed and validated the Attitude towards Mathematics Inventory. The statistical techniques used for analysis were percentage analysis, Pearson-product moment correlation, mean, standard deviation, t-test, F-test and Scheffe's test. The findings showed that there is a substantial correlation between Attitude towards Mathematics and Achievement in Mathematics of High School Students.

Kumar and Sharma (2019) conducted "A Study of the Attitude towards Mathematics and Achievement in Mathematics of Students in Relation to Gender". The major objective of the study was to find out the mathematics achievement in relation to attitude towards mathematics, gender, locale and type of family. The sample consisted of 200 students studying in IX class, both boys and girls from rural and urban areas of Kapurthala district, which were selected randomly. The Attitude towards Mathematics scale by Sharma (2009) and the Achievement in Mathematics scale by Singh & Kumar (2009) were used for the collection of data. A descriptive survey method of investigation was employed in this study. The findings of the study revealed that there was an influence of attitude towards mathematics on the achievement in mathematics of students. No significant difference in attitude towards mathematics of students was found in the case of boys and girls, rural and urban & single and joint families.

Ramalu and Mugale (2018) conducted a study on "Attitude towards Mathematics of the IX Standard Students in Adilabad District of Telangana". The major objective of the study was to find out the attitude towards mathematics of the IX standard students studying in the different types of higher secondary schools in adilabad district of Telangana. Random sampling technique has been used in the selection of the sample of as many as 1000 IX standard students and the attitude towards mathematics scale constructed and validated by the authors has been distributed to them, and the responses were collected, and computed according to the objectives framed. The findings of the study revealed that the majority of the IX standard students show a neutral attitude towards mathematics

## Research Design and Methodology

### Method

'Descriptive survey 'method was used.

### Population

The population in this study refers to all higher secondary students from the Kanyakumari district.

**Sample**

The sample of the investigation included 300 higher secondary students from the Kanyakumari district.

**Sampling Technique**

Stratified random sampling technique.

**Tools**

1) Attitude towards Mathematics Scale (Developed by M. Monith and Dr. R. Sreeletha, 2024)
2) Achievement in Mathematics (Collected marks secured in half-yearly examination).

**Statistical Techniques**

1) Percentage analysis
2) Pearson's product moment correlation

**Analysis of the Data**

**Hypothesis 1**

The level of Attitude towards Mathematics among higher secondary students is at a moderate level.

**Table 1. Percentage analysis of Attitude towards Mathematics among higher secondary students**

| Variable | Total | Low | | Moderate | | High | |
|---|---|---|---|---|---|---|---|
| | N | N | % | N | % | N | % |
| **Attitude towards Mathematics** | 300 | 47 | 15.7 | 199 | 66.3 | 54 | 18.0 |

Table 1 showed that 15.7 % of higher secondary students have shown low, 66.3 % of higher secondary students have shown moderate, and 18.0 % of higher secondary students have a high level of Attitude towards Mathematics.

**Hypothesis 2**

The level of Achievement in Mathematics among higher secondary students is at a moderate level.

**Table 2. Percentage analysis of Achievement in Mathematics among higher secondary students**

| Variable | Total | Low | | Moderate | | High | |
|---|---|---|---|---|---|---|---|
| | N | N | % | N | % | N | % |
| **Achievement in Mathematics** | 300 | 61 | 20.3 | 189 | 63.0 | 50 | 16.7 |

Table 2 showed that 20.3 % of higher secondary students have shown low, 63 % of higher secondary students have shown moderate, and 16.7 % of higher secondary students have a high level of Achievement in Mathematics.

**Hypothesis 3**

There is no significant correlation between Attitude towards Mathematics and Academic Achievement of Mathematics among higher secondary students.

**Table 3. Correlation between Attitude towards Mathematics and Achievement in Mathematics of Higher Secondary Students**

| Variables correlated | N | r-value | Verbal interpretation | Remark |
|---|---|---|---|---|
| Attitude towards Mathematics and Achievement in Mathematics | 300 | 0.650 | Moderate or Substantial correlation | Significant |

Table 3 shows that there is a substantial relationship between Attitude towards Mathematics and Achievement in Mathematics of higher secondary students.

**Findings**

Findings based on the level of Attitude towards Mathematics and Achievement in Mathematics

1) The level of Attitude towards Mathematics of higher secondary students was at a high level.

2) The level of Achievement in Mathematics of higher secondary students was at a moderate level.

Findings based on correlation

3) There existed a moderate or substantial correlation found between Attitude towards Mathematics and Achievement in Mathematics of higher secondary students.

**Conclusion**

The study investigated the relationship between Attitude towards Mathematics and Achievement in Mathematics among higher secondary students. It helped the investigator to bring the following conclusion. From the result of the level of analysis, it was found that there is the Attitude towards Mathematics of higher secondary students is at a moderate level, and Achievement in Mathematics of higher secondary students is at a moderate level. From the result of Pearson product-moment correlation, there is moderate or substantial correlation between Attitude towards Mathematics and the Achievement in Mathematics. From this, it is inferred that Attitude towards Mathematics influenced the Achievement in Mathematics of higher secondary students.

The present study explored the relationship between higher secondary students'

attitudes towards mathematics and their achievement in the subject. The findings highlight that attitude is a significant factor influencing students' academic performance in mathematics. Students who exhibited a positive outlook marked by confidence, interest, and a belief in the usefulness of mathematics tended to perform better than those with negative attitudes or high levels of anxiety.

In conclusion, fostering a positive attitude towards mathematics at the higher secondary level is essential for academic achievement and future educational opportunities. The study advocates for a more holistic approach to mathematics education, one that addresses both cognitive and affective domains of learning.

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