

# “A study on Attitude towards Mathematics among secondary school students”

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## ABSTRACT

Mathematics is very essential part of education and also a modern Science. Mathematics should be taught on a compulsory basis to all pupils as a part of general education during the first ten years of schooling. The study of mathematics at secondary level is necessary for the foundation stage of higher education. Every secondary school student should study the mathematics as a compulsory subject. So, the students with positive attitude towards mathematics tend to enjoy mathematics, which could lead to high performer in the same. The way of mathematics is represent in the classroom and perceived by students, even teachers believe they are presenting it authentic and context dependent way stands to alienate many students from mathematics. This study was conducted for secondary school students with the tool 60 items developed by Kumar and Sandeep was used for data collection. The analysis of the data revealed that there is no significant difference in attitude towards mathematics between boys and girls where as there is no significant difference in Attitude towards Mathematics between government and private secondary school students in Mysuru district.

**Keywords:** Attitude, Mathematics, secondary school, Government and private.

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## INTRODUCTION

Education refers to the discipline that is concerned with methods teaching and learning in schools or school like environments, as opposed to various non formal and informal means of socialization. it can be thought of as the transmission of the values and accumulated knowledge of a society. Education is designed to guide them in learning a culture moulding their behaviour in the ways of adulthood and directing them toward their eventual role in society. It is the important tool which is very useful in everybody's life. Education is what differentiates us from other living beings on earth and its doorway to success.

Mathematics is also a part of education. Mathematics is an historical subject. It has been explored by various mathematicians across the worlds since the centuries. Archimedes, from the BC century is known to be the father of mathematics. He introduced formulas to calculate surface area and volume of solids. Whereas Aryabhata, born in 476CE, is known as father of Indian mathematics originated from the Greek word "MATHEMA" which means "subject of instruction". Mathematics is project that deals with the numbers, shapes, logic, quantity and arrangement. It involves branches of mathematics, symbols, properties, rules and formulas in mathematics. It teaches to sole problem based on numerical calculation and find the solutions. And mathematics described 2 forms: pure mathematics and applied mathematics.

In current scenario, Mathematics used throughout the world as an essential basic component in all the area, including natural science, engineering, medicine, and the social science. As I mentioned, mathematics is very essential part of education and also a modern science. But the learning difficulties of mathematics for the learner faced by high school itself. The word intended to investigate the factors influencing on learning mathematics. The influencing factors are perception of students and teacher towards mathematics, attitude of students towards learning mathematics, difficulty level in content area of mathematics. From the influencing factors of attitude towards mathematics, the attitude learner towards mathematics has been the subject of a great deal of attention from learners.

Student with positive attitude towards Mathematics tend to enjoy mathematics, which could lead to high performance in the same. It plays a crucial role in the teaching and learning process of the mathematics. It effects student achievement in mathematics. The teaching method, the support of structure of the school, family and students attitude towards school affect the attitudes towards mathematics. Usually, the way of mathematics is represented in the classroom and perceived by students, even teachers believe they are presenting it authentic and context dependent way stands to alienate many students from mathematics. Mathematics is essential for those who want to get higher education, in modern life, education is impossible without mathematics. Some express highly positive or favourable attitude towards mathematics. So, the attitude consists of cognitive, affective and behavioural reactions that individuals display towards an object or the surroundings based on their interest. The cognitive component of attitude is what the individual thinks or believes about Mathematics. The affective component of attitude is the feelings or emotions of the individual associated with learning mathematics. This component is the source of driving the engagement of student towards mathematics. These two components of attitude are interrelated and deeply related with interact with each other. The behavioural aspects of attitude are the tendency to respond in a certain way towards the learning mathematics. It is also influenced by affective attitude.

Students feeling confidence in doing mathematics is linked with being successful in mathematics, which is regarded as positive behaviour. Students are not confident in doing mathematics, they may not experience success, and unsuccessful behaviour is regarded has negative feelings. Hence this component of attitude impacts on the cognitive component of attitude as well. When students see the importance of mathematics in real lives, they feel engaged, confident and connected to their learning. These three components of attitude are interrelated each other

### NEED AND IMPORTANCE OF STUDY

Mathematics is the fundamental part of human thought and logic and integral to attempt at understanding the world and ourselves. It provides an effective way of building mental discipline and encourages logical reasoning. Mathematical knowledge plays a crucial role in understanding the content of the other school subjects such as science, social science and even sports, music and art. Attempt to improve attitude towards mathematics at lower level provide base for higher studies in mathematics at secondary school level. In secondary school level learning mathematics doesn't only involve thinking and reasoning. It is dependent on the attitude of the learners towards learning and mathematics. Certain qualities that are nurtured by mathematics or power of reasoning, creativity, abstract or spatial thinking, critical thinking, problem solving ability and even effective communication skills.

The biggest problem of today is that high school students don't take mathematics seriously enough. They are not simply interested in these subjects, despite the fact that this structural science can provide them well paid jobs in engineering, statistics, education and technology. The main reason of disinterest in mathematics is the lack of knowledge and prejudice in primary and secondary stages about mathematics. Due to less amount of practice, since practice is one of the best keys to understand mathematics.

Secondary school students see mathematics as something boring, difficult and irrelevant to their lives and don't take into account all the benefits that mathematics can provide them in the future. Although all carriers requires a foundation of mathematical knowledge must pursue an educational path that will prepare them for lifelong work as teachers, professors, mathematicians, engineers, statisticians and scientists. In the changing world those who understand and can-do mathematics will have opportunities and options and options for shaping their future brighter? All students should have the opportunity to learn significant mathematics with depth and understanding such that they exhibit different talents, abilities, achievements, needs and interest in mathematics. Mathematics is one of the greatest cultural and intellectual achievements of human kind and citizen should develop an appreciation and understanding of the achievement.

The study is to investigate secondary school student's attitude towards mathematics. As students find mathematics as difficult subject, they have less achievement. so, this study is to known their attitude towards mathematics. By going through different reviews researcher found that mathematics is a very boring subject for secondary school students.

### REVIEW OF RELATED LITERATURE

#### Studied Conducted In India

- **Dr. P Sattanathan (2023)** study intended to find the 9th standard students Attitude towards Mathematics on academic achievement in Pudukottai district. The study was conducted on sample of 300 students who are studying in 9th standard with a tool of Attitude towards Mathematics and academic achievement test in 9th mathematics constructed by the researcher. This study indicates that the mean score of achievement in

mathematics slightly difference between male and female students. According to their result there is only a very small difference between rural and urban students.

- **Saheera T K (2022)** aim to understand Attitude towards Mathematics among Kerala students. The data was collected from 61 students' government and private schools. The inventory comprises of 49 items and constructed to cover 6 domains related to Attitude towards Mathematics. The study found that students exhibited a positive Attitude towards Mathematics.
- **Padmeswar Senapati (2021)** study on the title of A case study about beliefs and attitudes in mathematical problem solving among higher secondary students in Nagoan district of assam, India. A case study on 858 (498 male and 360 female) with a 34 different subject related educational and beliefs standard questionnaire. The results of the present study may reinforce the need of mathematical problem solving. More specifically, encouraging mathematics educators to employ problem solving instructional strategies in all courses pursuing under mathematics education program in extensive manner.
- **Dhana Kumari Thapa (2020)** conducted a research on the title secondary school student's attitude towards mathematics. Data were collected from 318 randomly selected students studying science in grade 12 with a tool of self-administered questionnaire. The result was there is no gender variation in attitude of student learning mathematics between boys and girls.
- **B Senthamarai Kannan, C Sivapragasam and R Senthil kumar (2015)** conducted a research on the title Attitude of secondary school students towards Mathematics. The study was conducted on a sample 200 9th standard students with a self-made tool of attitude scale towards mathematics. The result showed that the secondary school female students as a better Attitude towards Mathematics than that of male students.

#### STUDIED CONDUCTED IN ABROAD

- **Robert Wakhata (2022)** conducted a research on the title secondary school students Attitude towards Mathematics word problems researcher conducted a research for 851 grade 11 Ugandan students from eight secondary schools with multidimensional measurement tool for measuring student's attitude towards mathematics problem. The results revealed that, there is no much difference among secondary school students.
- **M D Khadeerullah Khan (2019)** study of Attitude towards Mathematics and achievements of the student in mathematics among secondary schools. This research was conducted to 8-9th grade students with a 60 items questionnaire. The result show that boys differed in their mathematical achievement from girls. Boys achieved better result as compared to girls.
- **K Oppong Asante (2014)** conducted a research on the title secondary school students attitude towards mathematics research conducted a research for 181 students made up of 109 boys and 72 girls. They were conveniently sampled from three high schools. Two anonymous self-administered questionnaires were used namely the demographic data questionnaire and the attitude towards mathematics inventory. This study has showed that there are genders differences in Attitude towards Mathematics which was strongly argued are as a result of socialization into varied gender roles.
- **Maria de Lourdes (2012)** studied students Attitude towards Mathematics. This research was conducted to 1719 Portuguese students from 5-12 grades with a tool of intrinsic motivation inventory questionnaire. The results were found that no gender effect was identified.
- **Muhammad Shahid Farooq (2008)** studied students Attitude towards Mathematics. Sample of the study was conducted to 685 students (male 379 and female 306) of the 10th grade from 5 private and 5 public sector school selected with the tool containing 4 subscales compressed of 12 items. The result was found that there no impact on attitude of students towards mathematics.

#### Statement Of The Study

"A study on Attitude towards Mathematics among secondary school students".

**Objectives Of The Study**

1. To study the significant difference between Boys and Girls of secondary school students with respect to their Attitude towards Mathematics.
2. To study the significant difference between government and private secondary school with respect to Attitude towards Mathematics.

**Hypothesis Of The Study**

1. There is no significant difference Boys and Girls of secondary school students with respect to their Attitude towards Mathematics.
2. There is no significant difference government and private secondary school with respect to Attitude towards Mathematics.

**METHODOLOGY OF THE STUDY**

Descriptive/Survey method is use to study the "Attitude towards Mathematics among secondary school students".

**Sampling Method**

Random sampling technique was used. The students studying in different types of secondary schools affiliated to Karnataka state education department become the total population of study. Population for research will be going to select as per the Morgan table.

**Tool Used In The Study**

Researcher used the tool entitled "Attitude towards mathematics among secondary school students". A standardized tool developed by Kumar and Sandeep.

**Description Of The Tool**

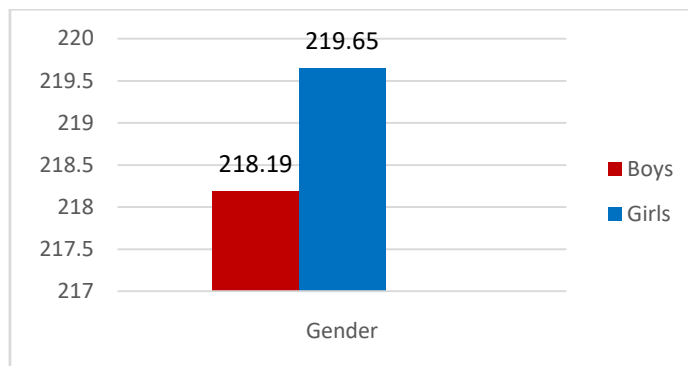
There are 60 statements in attitude scale, so maximum score a respondent can have is 300. 30 statements express highly positive or favorable Attitude, while 30 statements express highly negative or unfavorable attitude towards mathematics. Most of the statements express varying degree of +ve or -ve attitude. Your are requested to mark in the space provided in front of each statement the degree of attitude by writing number 5 to 1 for positive attitude such as strongly agree 5 points, agree 4 points. Neutral 3 points disagree 2 points and strongly disagree 1 point. For negative attitude statements strongly disagree 5 points, disagree 4 points, neutral 3 points, agree 2 points and strongly agree 1 point.

**H1. To study the significant difference between Boys and Girls of secondary school students with respect to their Attitude towards Mathematics.**

SI No	Type of Gender	N	Mean	SD	df	"t"	Remarks
1	Boys	120	218.19	16.38	34	0.2304	<b>Accepted</b>
2	Girls	85	219.65	20.17			

(Standard Error:6.348)

Above table shows that that obtained "t" value is less than that "t" value of df 98 at 0.05 level of significant. That is the null hypothesis is accepted and it is concluded that there is no significant difference between Boys and Girls secondary school students with respect to their Attitude towards Mathematics.

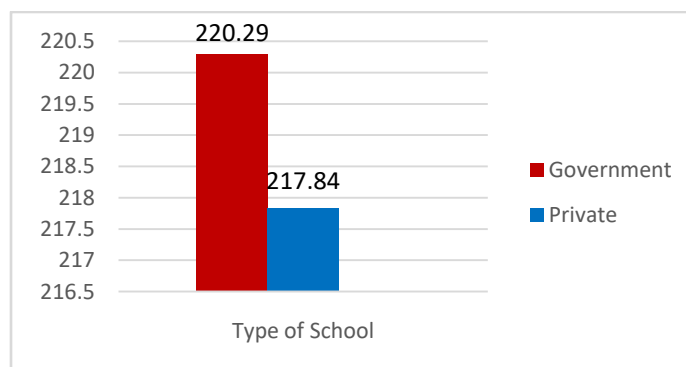


**H2. To study the significant difference between Government and Private secondary school students with respect to their Attitude towards Mathematics.**

Sl No	Type of Locality	N	Mean	SD	df	“t”	Remarks
1	Government	70	220.29	14.37	34	0.3886	Accepted
2	Private	135	217.84	22.16			

(Standard Error:6.309)

Above table shows that that obtained “t” value is less than that “t” value of df 98 at 0.05 level of significant. That is the null hypothesis is accepted and it is concluded that there is no significant difference between Government and Private secondary school students with respect to their Attitude towards Mathematics.



### Major Findings Of The Study

The study was conducted to a group of 205 students which includes both Government and Private of schools students each. As per the results findings were made as follows:

1. There is no significant difference between Boys and Girls secondary school students with respect to their Attitude towards Mathematics.
2. There is no significant difference between Government and Private secondary school students with respect to their Attitude towards Mathematics.

### Limitations Of The Study

1. This study is limited to secondary school students (10th).
2. This study is limited to the Mysuru district.
3. This study is limited to only for Government and Private secondary school students.

### Educational Implications

Mathematics is a vast subject. It has become boon to students in many ways as it has provided them with various opportunities for overall development of students. So, we encourage them to learn mathematics through games and activities. The results interpreted from the data can be there is no significant difference in attitude towards mathematics between boys and girls as well as government and private secondary school students in Mysuru district.

### SUGGESTIONS FOR FURTHER STUDY

1. This study can be conducted for urban and rural secondary school students.
2. This study can be conducted for CBSE and ICSE secondary school students.
3. This study can be conducted for secondary school students all over the Karnataka state.
4. PhD, PDF with different mathematics variables and mathematics learning competencies.

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