

A Study on Students' Attitude towards Mathematics in Some Selected Secondary Schools of Puducherry State

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Abstract: This case study adopted the illustrative customer survey pattern applying easy frequency and also percentages inside considering the data. 573 secondary school students at random selected through 8 educational institutions in various parts of Puducherry state of India ended up applied. Just One Instrument (JOI) has been applied. It is recommended how the educator needs to develop optimistic relationship with college students and also stress type place routines which involve active teaching- learning method and also students' contribution in the class. Stakeholders need to organize periodic classes and also courses regarding students, parents and also instructors made to promote optimistic thought patterns towards mathematics.

Keywords: Student Attitude, Mathematics, Secondary School, SAT

Introduction:

Most people have heard the age-old saying, "attitude is the key to success". Various quotes can be retrieved that subscribe to this philosophy. In education, research suggests that student attitudes toward a subject lead to academic success (Popham, 2005; Royster, Harris, & Schoeps, 1999).

Mathematics carries a crucial role within our daily life because it is just a part of virtually every part of our exist ence. On the most basic amount, we must learn mathematics concepts for being competent to learn how to count cash or maybe explain to moment. With no mathematics, many of us couldn't find out the length derived from one of spot for a yet another or maybe any time it could take to get there. Using a grander scale, we may teach minor to be able to nothing at all concerning the world without having mathematics. It can be found in virtually every industry associated with research including locations like Biology, Archaeology, Astronomy, Mathematical Economics, Chemistry, Physics, Engineering and so many more. Instructional mathematics is just about the most critical subject we make use of all our existence. Many of us make use of mathematics with regard to buying, examining, personal savings, payments, bills, mileage, and so on. The main cause medical professionals make use of mathematics would be to establish suitable measure as soon as prescribing prescription drugs. Doctors will make use of mathematics throughout establishing the ideal weight for just a sufferer, or to track pregnancy progression.

Attitude of students can be influenced by the attitude of the teacher and his method of teaching. Studies carried out have shown that the teachers' method of mathematics teaching and his

personality greatly accounted for the students' positive attitude towards mathematics and that, without interest and personal effort in learning mathematics by the students, they can hardly perform well in the subject (Yara, 2009).

The present study is intended to investigate Puducherry students' attitudes towards mathematics and mathematics learning at the secondary level. There are two reasons for us to conduct this study. First, as developing students' positive attitudes is stipulated as one of the main aims for mathematics education in Puducherry, we want to measure how secondary school students have achieved in this aim. Second, although many believe that attitudes play an important role in students' learning of mathematics, there has been little effort on studies about students' attitude toward mathematics and mathematics learning in Puducherry educational settings. The study adopted the descriptive survey design using simple frequency and percentages in analyzing the data. 573 secondary students randomly selected in 8 schools from all parts of Puducherry state were used. One instrument (SAT) was used while two research questions were answered in the study. The results showed that the students' attitudes towards mathematics were positive and that many of them believed that mathematics is a worthwhile and necessary subject which can help them in their future career. It is recommended that the teacher should develop positive relationship with students and stress classroom activities that involve active teaching- learning process and students' participation in the class. Stakeholders should organize periodic seminars and workshops for students, parents and teachers designed to promote positive attitudes towards mathematics.

Research Questions

The following questions were answered in this study.

1. Do students like mathematics?
2. Do students hate mathematics?

Hypothesis

1. Students don't like mathematics.
2. Students don't hate mathematics.

Methodology

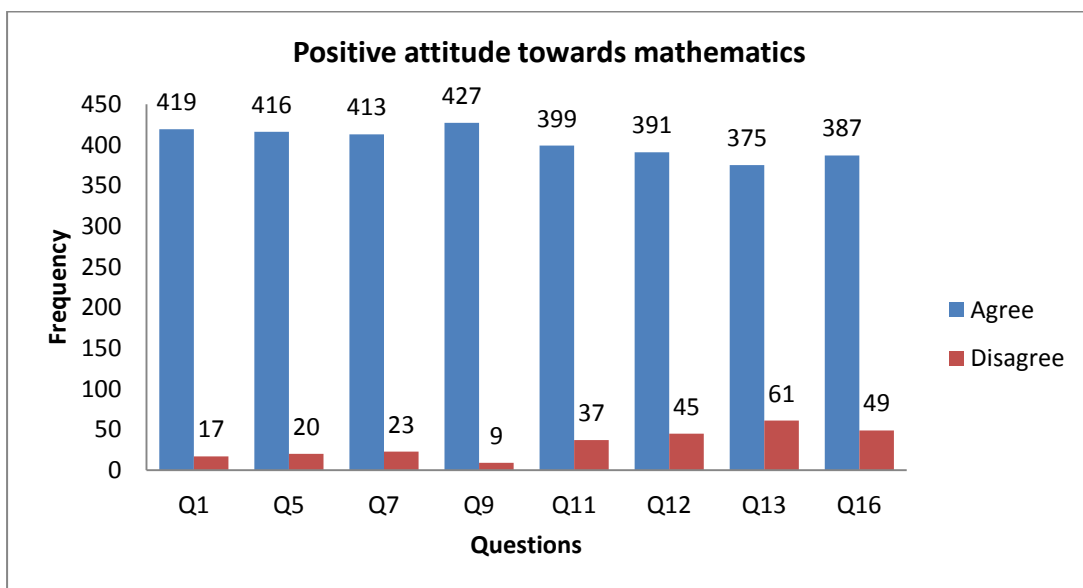
The study adopted the descriptive survey design using frequency and percentages for the analysis. The instrument used was Student Attitude Scale (SAT) which was adapted from the modified Fennema-Sherman Mathematics Attitude Scales. It was divided into two sections with Section A

dealing with the biographic data of the students like their names, roll number, class, school name, district, state, sex and age. Section B consists of 16 items made up of 8 positively worded and 8 negatively worded items to which the students were expected to respond by expressing their level of agreement or otherwise on a four-point scale of Strongly Agree(SA) rated 4, Agree(A) rated 3, Disagree(D) rated 2 and Strongly Disagree (SD) rated 1.

Results and Discussions

Research Question 1: Do students like mathematics?

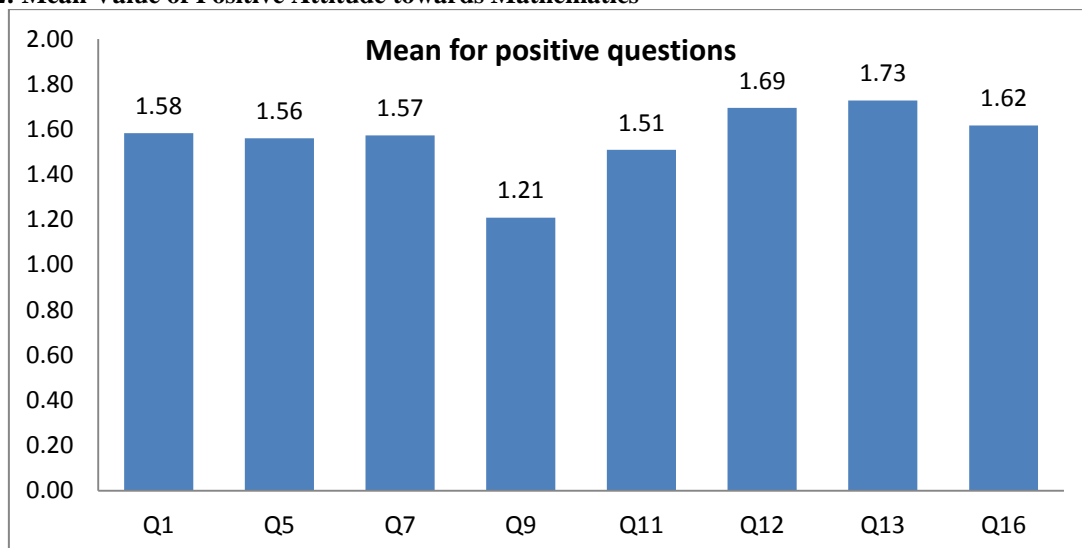
Fig 1: Frequency of Positive Attitude towards Mathematics



The figure 1 presents the description of number of students positively responded in favor of mathematics. 427 participants agreed highly with question 9 (Mathematic is being made compulsory in schools) and in contrast 61 students highly

disagreed with question 13 (Mathematics is applicable in solving human and natural problems). All the students are positive towards mathematics as per their responses.

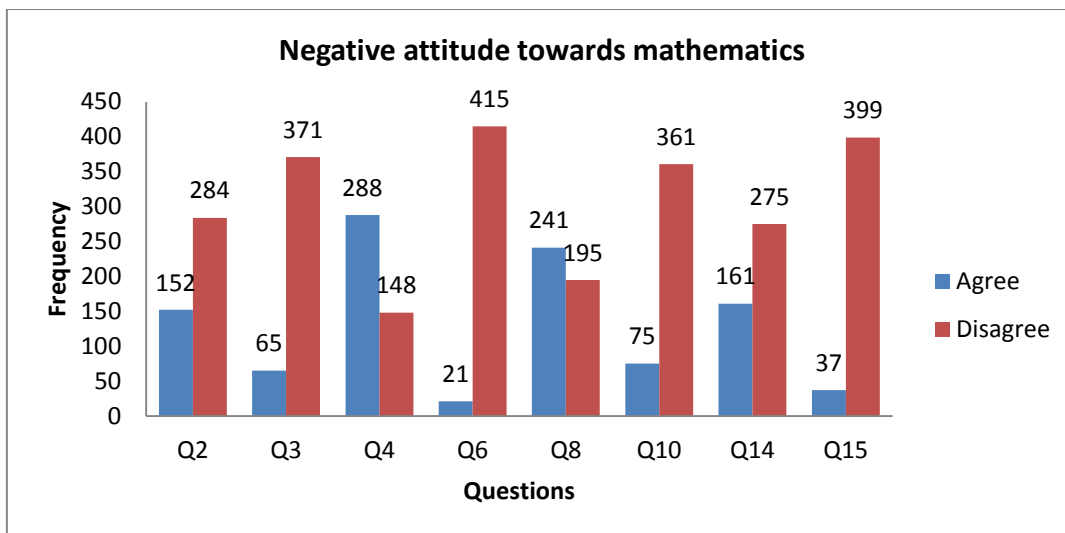
Fig 2: Mean Value of Positive Attitude towards Mathematics



Most of the students who have responded to the research question have agreed upon that they have positive attitude to mathematics. The question 13 (Mathematics is applicable in solving human and natural problems) is the one that has been

widely accepted by the students. Question 9 (Mathematics is being made compulsory in schools) has received a minimum mean value. Research Question 1: Do students hate mathematics?

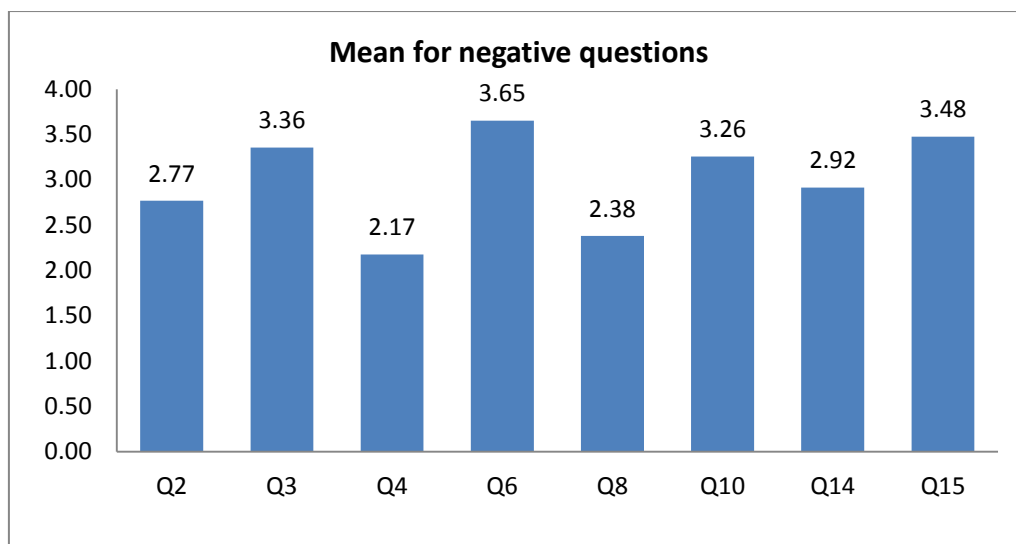
Fig 3: Frequency of Negative Attitude towards Mathematics



It is quite interesting to know from figure 3 that the response to eight questions that have been put to the participants is negative. It means that these questions also further state that their attitude to mathematics is positive again. Except question 3 (Mathematics is not a difficult subject) and question 5 (Mathematics is too technical for me to understand) for all the questions participants disagreed. A careful analysis brings out the right

attitude of the participants. The eight negative questions have been negatively reacted which means participants are positive towards math. Further examination of question 3 gives significant information. 288 participants agreed to this question whereas the question is negative. That again signifies students' positive attitude to math. On the whole, question 5 is the only one for which they truly feel negative about math.

Fig 4: Mean Value of Negative Attitude towards Mathematics



Most of the students who have responded to the research question have agreed upon that they have positive attitude to mathematics, though the questions given to them are negative. The question 6 (Mathematics class was a waste of time) is the

one that has been disagreed by the students. It means they are positive towards math. Question 8 (Mathematics is too technical for me to understand) has received a minimum mean value.

Fig 5: ANOVA test for Attitude towards Mathematics

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	8.28	1	8.28	53.92	0.00	4.60
Within Groups	2.15	14	0.15			
Total	10.43	15				

A one way ANOVA was conducted to determine the differences between the positive and negative attitudes towards math. A significant difference was found between the two groups on the dependent measure, $(F(1, 15) = 53.92,$

$P < 0.005)$. The probability of accepting the null hypothesis was that the p value must be greater than 0.05, the level of significance set before. In this case, the p value was less than 0.05.

Fig 6: t-Test test for Attitude towards Mathematics

t-Test: Paired Two Sample for Means		
Category	Q-POS	Q-NEG
Mean	1.56	3.00
Variance	0.03	0.28
Observations	8.00	8.00
Pearson Correlation	-0.28	
Hypothesized Mean Difference	0.00	
Df	7.00	
t Stat	-6.83	
P(T<=t) one-tail	0.00	
t Critical one-tail	1.89	
P(T<=t) two-tail	0.00	
t Critical two-tail	2.36	

The analysis of the independent t-test established that there was significant difference between positive and negative attitude towards math. The analysis of the data from table clearly indicated that there was statistically significant difference positive and negative attitude towards math ($t=1.89, p < 0.05$). The p value was less than 0.05. As the p value was less than 0.05, the significant difference was evident.

Conclusions & Recommendations

It is found through these interviews that most students really do want to understand mathematics. A lack of understanding seems to promote the decline of student attitudes toward mathematics. However, there can be differences in student definitions of understanding and teacher definitions of understanding. Further also it is believed that true understanding needs to be emphasized more in every grade, rather than memorization and procedures. However, in my

opinion, skills can serve as the foundation for higher level thinking, deeper understanding and stronger connections. One way to ensure students are able to obtain a deeper understanding is maintaining a proper balance between challenge and frustration. This also requires teachers evaluating students to ensure each student is being appropriately challenged. Evaluation is not always about summative assessments. Teachers should constantly assess in their classroom.

It is concluded and recommended that the teachers should develop positive relationship with students and focus on classroom activities, which will involve active teaching- learning process and students' participation in the class. The researcher is able to notice through this study that the students who have responded are positive towards math. However, there are certain areas where the participants feel insecure. Hence, there is a scope for the future study to make students' feel secure at particular areas where this study has noticed.

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