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Enhancing Students' Attitude towards Mathematics the Case of Three Mettu Secondary and Preparatory Schools in Illu Aba Bora Zone

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Abstract

Students' success in mathematics depends upon their attitude towards mathematics. It also influences the participation rate and achievement of students. The objective of this research study was to enhance attitude of Mettu Secondary and Preparatory Schools students' towards mathematics. A closed ended, self-reported statements questionnaire with Likert type was used to collect data from the concerned stakeholders. Multiple regressions were used for data analysis.

Keywords: Attitude; Preparatory; and mathematics Curriculum.

1. Introduction

1.1 Background of the study

Attitude towards mathematics play a crucial role in the teaching and learning processes of mathematics. It effects students' achievement in mathematics. The teaching method, the family and students' attitude towards school affect their attitudes towards mathematics, [1]. Researchers concluded that positive attitude towards mathematics leads students towards success in mathematics.

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Attempt to enhance attitude towards mathematics at lower level provides base for higher studies in mathematics. It also causes effect in achievement of mathematics at secondary school level, [1].

Attitude is based on value and belief, as well as varying degree of factual knowledge, [1].

“Poor attitude towards mathematics has often been cited as one factor that has contributed to lower participation and success of students in mathematics, [1]. Interest and attitude in the subject are the special predictors for the students’ participation and success in the subject.

To address this, it should be taken in to account on how mathematics should arrive to the students, what kind of environments suits mathematics, and what should be the role of mathematics teachers when goes to shape an individual to a positive attitude towards mathematics.

1.2 Statement of the problem

Mettu University has started the teaching and learning process in the town of Mettu, Ilu Aba Bora Zone, Oromia region since 2004 E.C. The opening of the University was good news to the society of the area as well as beyond. Because, it is through learning that individuals become useful to themselves, to the society and the country in general. However, there was lack of motivations of the students towards mathematics learning. For instance, the researchers were combined to help students of the schools in the year 2003 Ethiopian Calender, but, there were no significant number of students who had interest to learn mathematics.

As a result, the researchers were interested to enhance the attitude of the students of the schools towards mathematics. It was from this point of view that the researchers selected the topic to be studied.

1.3 Objective of the study

- ❖ Enhancing attitude of Mettu secondary and Preparatory School s students towards mathematics.

1.4 Significance of the study

- ❖ It indicates implications of the study.
- ❖ Helps to have smooth students-teacher interaction.
- ❖ Indicates the ways to enhance attitude of the students towards mathematics.
- ❖ Improves quality of education.
- ❖ Help students to participate actively in mathematics lessons.

1.5 Limitations of the study

- ❖ Time delay provision of the fund
- ❖ Shortage of the granted fund
- ❖ Reluctant of some of the respondents

2. Materials and Methods of the study

This section presents: the research design, sampling techniques, sample size selection, methods of data analysis, tools of data collection, and procedures of data collection and techniques of data analysis.

2.1 Research design of the study

The researchers employed both qualitative and quantitative designs. The researchers employed these designs because they were important to produce more in-depth information and they allowed the subjects to give much richer information.

2.2 Sampling Techniques

In this study the researchers used two types of sampling techniques. These were purposive sampling technique and simple random sampling technique. The researchers used purposive sampling technique for selection of the sample schools and Simple Random sampling technique for selection of the sample students.

2.3 Sample Size Selection

This research study was planned to be studied on the entire population of all Secondary and Preparatory Schools in Oromia Zone. But, it was difficult to do this and therefore it is a must to settle a sample. Sample was a portion of elements taken from a population that is considered to be representative of the population. Taking this in to consideration, three secondary and preparatory schools were selected by the method of purposive sampling for the study. Using yemane's sample size determination formula for determining the sample size of this study:

$n = \frac{N}{1+Ne^2}$, Where N refers the total population and in 95% confidence level, e refers the error.

$n = \frac{600}{1+600*(0.05)^2} = 240$. Thus, 240 students were selected as sample students for the study.

2.4 Methods of data analysis

This section dealt with how the collected data was analysed, interpreted, and discussed. As a result, the data collected through the instrument was analysed qualitatively and quantitatively by using multiple regressions to see the contributions of each independent variable.

2.5 Tools of data collection

In this research study the tool that was used to collect data was written Questionnaire. A written questionnaire (self-administered questionnaire) is data collection tool in which written questions are presented that are to be answered by the respondents in written form.

So, the researchers designed questionnaires/ Likert Scale for the sample students to obtain the right information.

The main reason why the researchers used questionnaire/Likert Scale was that the researchers believe that the questionnaire/Likert Scale enables students to explain their lived-in-it experiences about the study.

2.6 Procedures of Data Collection and Techniques of Data Analysis

In this research study in the process of data collection, series of steps were taken. The first step in this process was simply administering those questionnaires for the sample students to gather right information about students' mathematics background, students' mathematical feeling, and students' family support for developing important mathematics skills etc. This was planned to collect relevant information about their teaching or instructional approach and students' general experiences in mathematics learning.

To analyze the data multiple regressions was used. In the data analysis three procedures were followed. The first procedure was organizing the collected data based on each items of the questionnaires. The second procedure was presenting the data using SPSS options. The third procedure was analyzing and discussing.

3. Results and Discussions of the study

Note that:

SA= strongly agree, A= agree, U = undecided, D = disagree, SD = strongly disagree

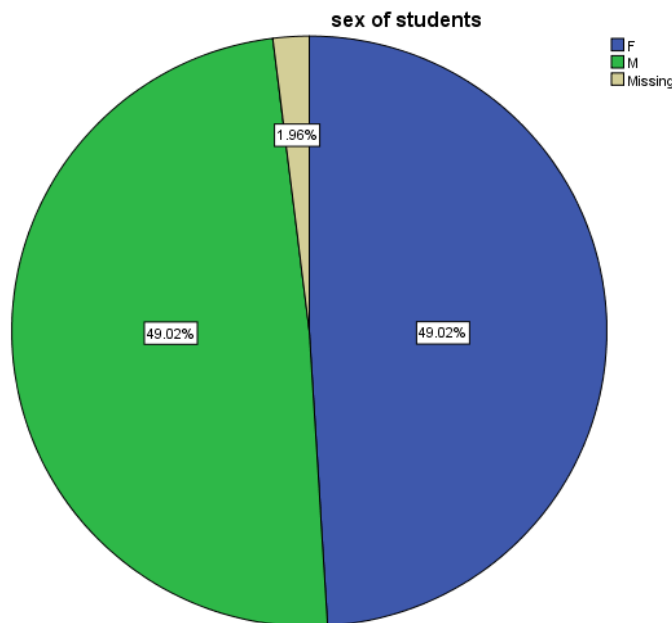


Figure 1

As can be seen from the above Figure 1 that about fifty percent of the sample students were male and fifty percent of the sample students were female. This shows that both male and female students unfortunately had equal chance in the sample students.

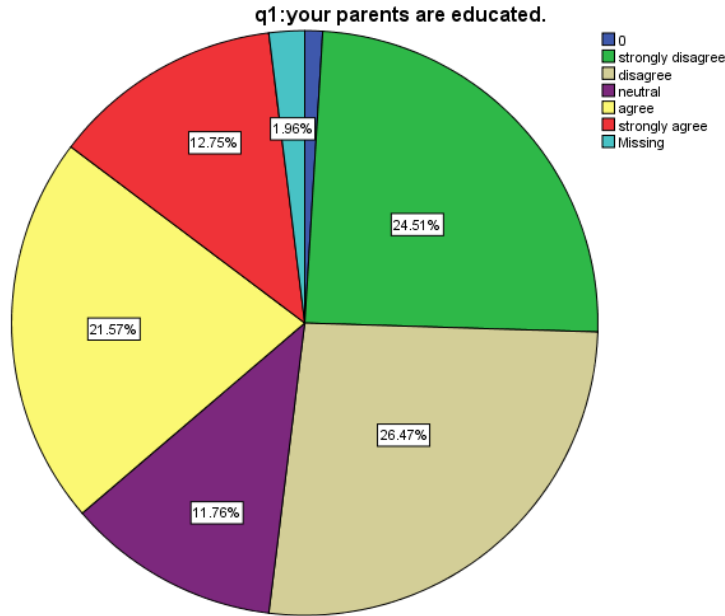


Figure 2

Figure 2 depicted that 26.47% of the sample students were disagreed, 24.51% of the sample students were strongly disagreed, and however, 21.57% of the sample students were agreed, 12.75% of the sample students were strongly agreed. In general, this result tells us that if the parents of the students were educated, they probably had positive attitude towards mathematics, as a result they had motivated their children towards mathematics and their children had developed positive attitude towards mathematics. Therefore, we conclude that the contribution of this independent variable to the attitude of students towards mathematics was negative.

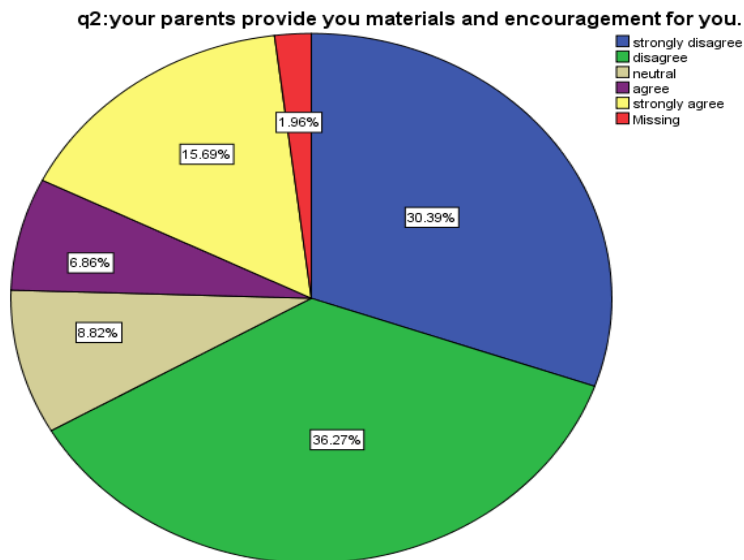


Figure 3

From Figure 3 one can see that 36.27% of the sample students were disagreed, 30.39% were strongly disagreed,

8.82% were neutral, but 6.86% of the sample students were agreed, 15.69% was strongly agreed. In general, majority of the sample students were argued that they lacked materials and encouragement from their parents. This may lead the students to develop negative attitude towards mathematics. Therefore, we conclude that it is advisable to provide materials and encouragement so as to create positive attitude in the students towards mathematics.

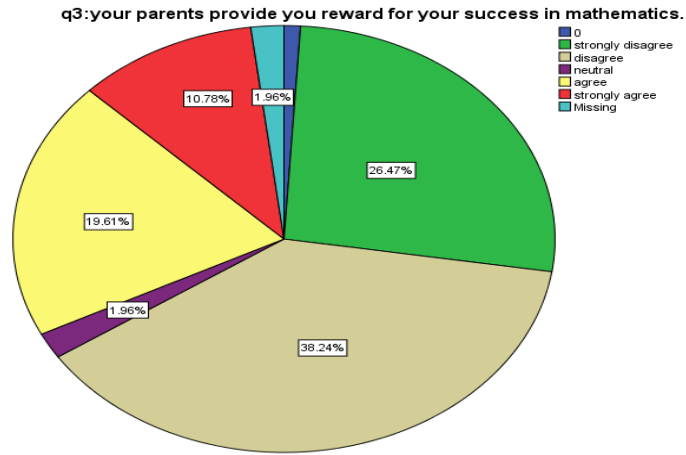


Figure 4

As shown in Figure 4 that 38.24% of the sample students were disagreed, 26.47% were strongly disagreed, however, 19.61% were agreed, and 10.78% were strongly agreed. In general, most of the sample students were disagreed in that their parents were not provided them reward for their success in mathematics. Therefore, the parents should provide their students reward for their success in mathematics and this in turn creates positive attitude in the students towards mathematics.

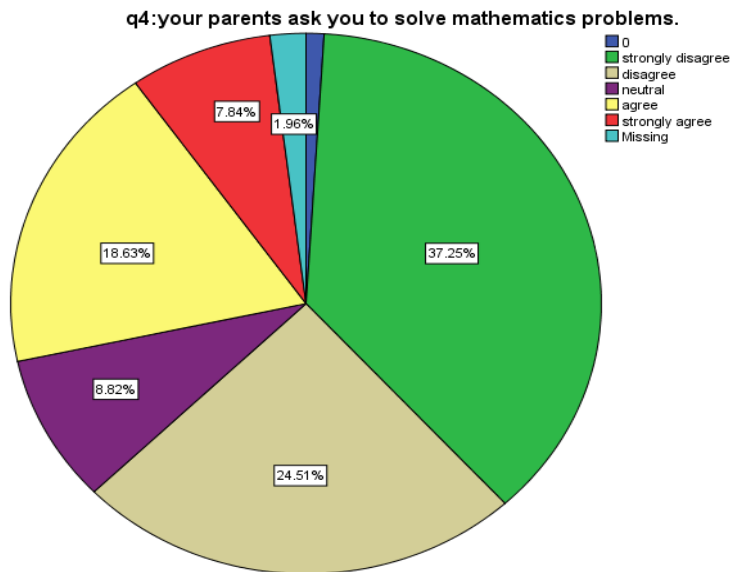


Figure 5

According to Figure 5, 37.25% of the sample students were strongly disagreed, 24.51% of the sample students were disagreed, 18.63% of the sample students were agreed, 7.84% of the sample students was strongly agreed, and 8.82% of the sample students were neutral. In general, majority of the sample students were strongly disagreed. This means that their parents were not asked them to solve mathematics problems. Therefore, it is advisable to ask our children to solve us mathematics problems, and this in turn creates positive attitude towards mathematics.

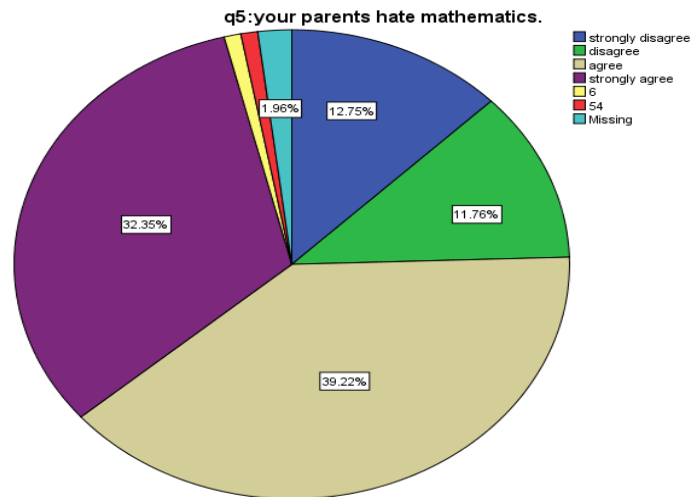


Figure 6

As can be seen from the above Figure 6 that 39.22% of the sample students were agreed, 32.35% of the sample students were strongly agreed, 11.76% of the sample students were disagreed, and 12.75% of the sample students were strongly disagreed. In general, most of the sample students were agreed. This means that the parents of the sample students hate mathematics. The contribution of this variable was negative and may lead the students to develop negative attitude towards mathematics.

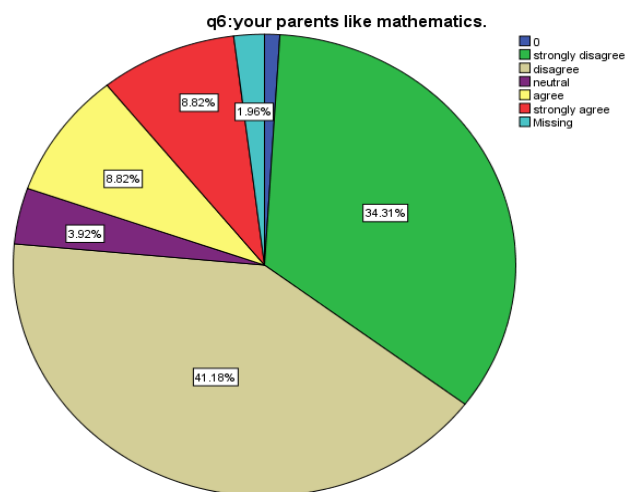


Figure 7

Figure 7 depicted that 41.18% of the sample students were disagreed, 34.31% of the sample students were strongly disagreed, and 8.82% of the sample students were agreed. When we compare and contrast these results majority of the sample students were disagreed. This shows that the contribution of this variable was negative.

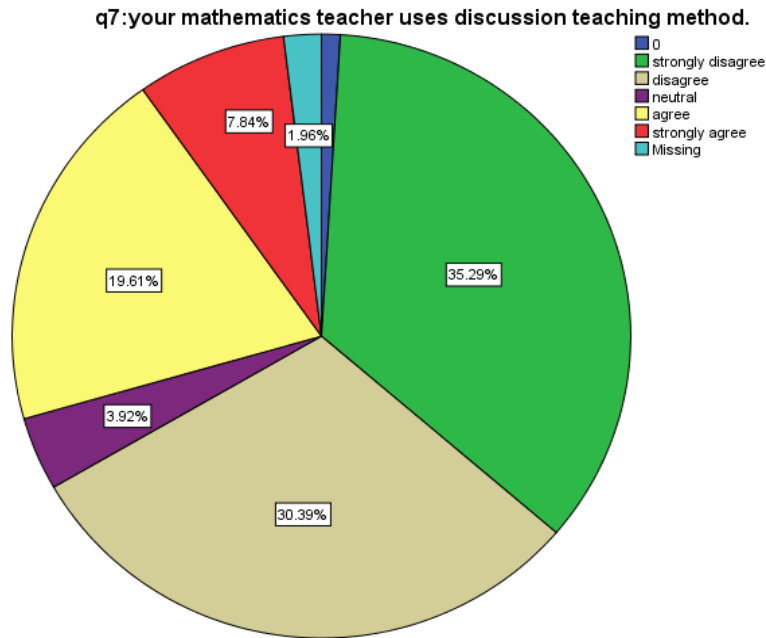


Figure 8

From the above Figure 8, we have the following results: 35.29% of the sample students were strongly disagreed, 30.39% of the sample students were disagreed, 19.61% of the sample students was agreed, and 7.84% of the sample students were strongly agreed. From this result we understand that majority of the sample students were strongly disagreed.

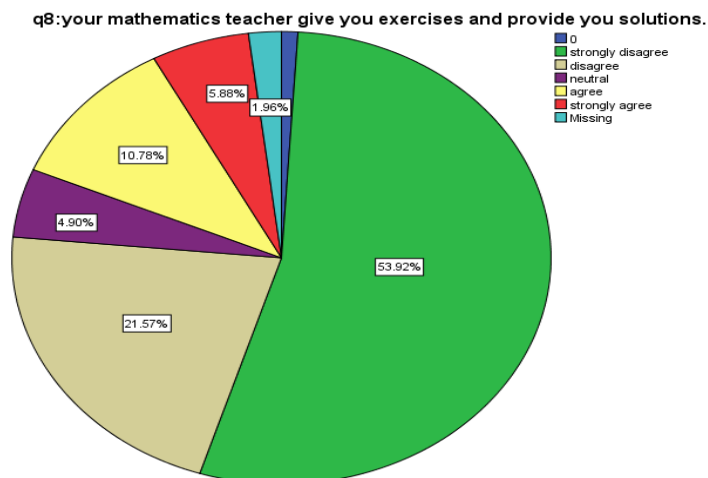


Figure 9

According to Figure 9, 53.92% of the sample students were strongly disagreed, 21.57% of the samples students were disagreed, 10.78% of the sample students were agreed, 4.90% of the sample students were neutral and 5.88% of the sample students were strongly agreed. In general, from these result we understand that majority of the sample students were strongly disagreed. Therefore, the researcher encourages teachers to include discussion teaching method in their teaching methods.

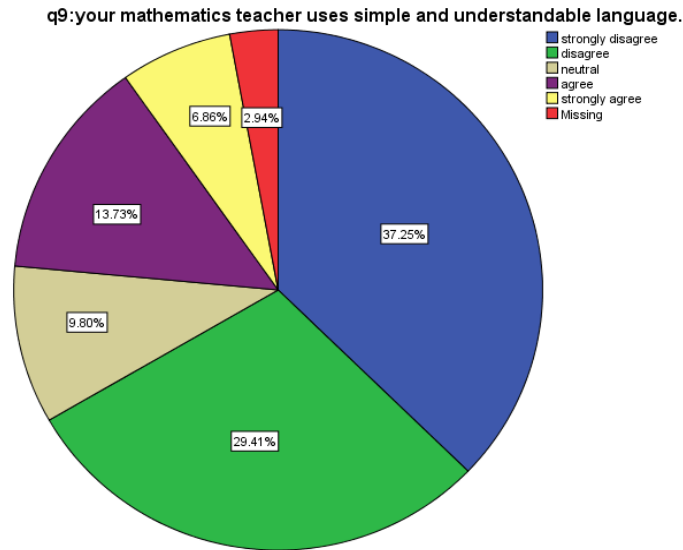


Figure 10

From Figure 10 we obtain the following results: 37.25% of the sample students who were strongly disagreed, 29.41% of the sample students who were disagreed, 13.73% of the sample students who were agreed, 6.86% of the sample students who were strongly agreed, and 9.80% of the sample students who were neutral. In general, most of the sample students were strongly disagreed. This means that their mathematics teachers were not used simple and understandable English language while the teaching and learning of mathematics process is going on in the class. Therefore, the researchers encourage mathematics teachers to use simple and understandable English language and this may create positive attitudes in the students towards mathematics.

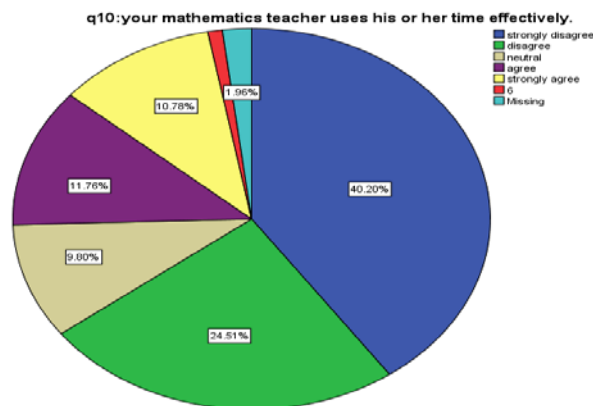


Figure 11

Figure 11 depicted the following results: 40.20% of the samples students were strongly disagreed, 24.51% of the sample students was samples who were disagreed, 11.76% of the sample students were agreed, and 10.78% of the sample students who were strongly agreed. In general, most of the sample students were strongly disagreed. This tells us that teachers of mathematics were not used their time effectively. The contribution of this variable was negative and may lead the students to develop negative attitude towards mathematics.

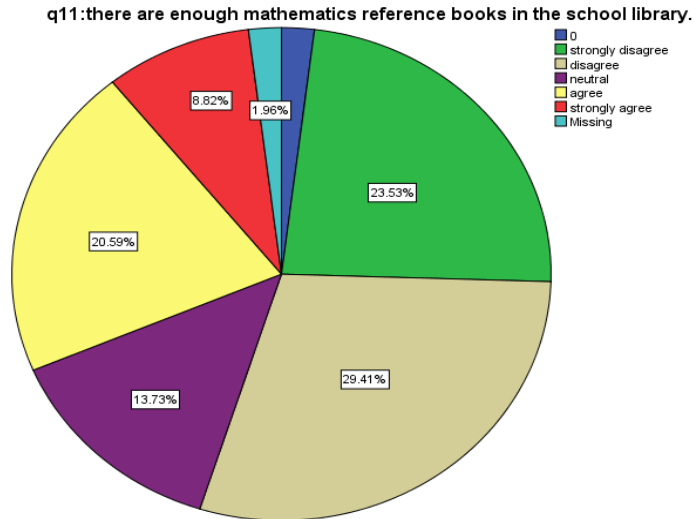


Figure 12

Figure 12 described the following: 29.41% of the sample students were disagreed, 23.53% of the samples was sample students who were strongly disagreed, 20.59% of the sample students were agreed, 13.73% of the sample students were neutral, and 8.82% of the sample students were students who were strongly agreed. According to the respondents there were no enough mathematics reference books in the school library. The contribution of this variable was probably negative.

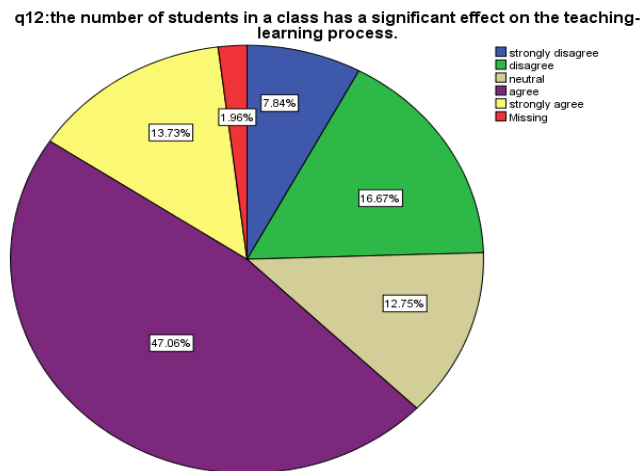


Figure 13

As per Figure 13 the following results were obtained: 47.06% of the sample students were agreed, 16.67% of the

sample students were disagreed, 13.73% of the sample students was sample students who were strongly agreed, 12.75% of the sample students were neutral, where as 7.84% of sample students was sample students who were strongly disagreed. In general, majority of the sample students agreed that the number of students in the class has a significant effect on the teaching-learning process of mathematics. Therefore, the contribution of this variable was great in that it led the students to develop negative attitude towards the subject.

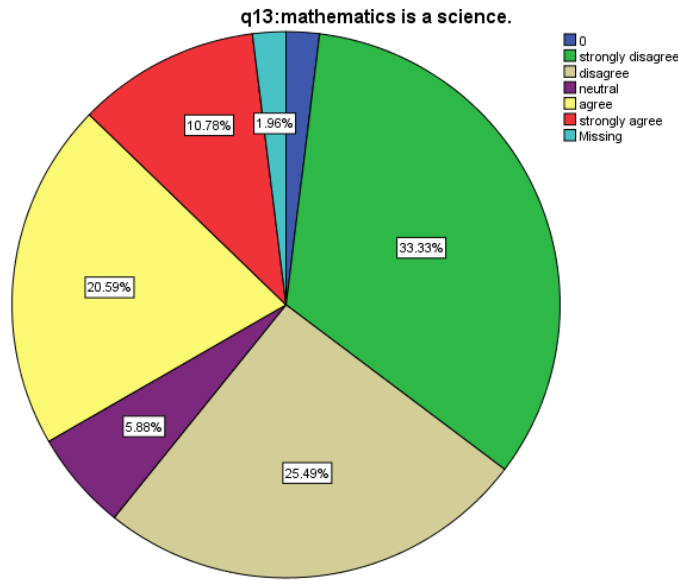


Figure 14

Figure 14 described the following: 33.33% of the sample students were students who were strongly disagreed, 25.49% of the sample students were disagreed, 20.59% of the sample students were agreed, 10.78% of the sample students were strongly agreed, and 5.88% of the sample students were neutral. Since majority of the sample students were strongly disagreed we conclude that the contribution of this variable was negative and may lead the students to develop negative attitude towards the subject.

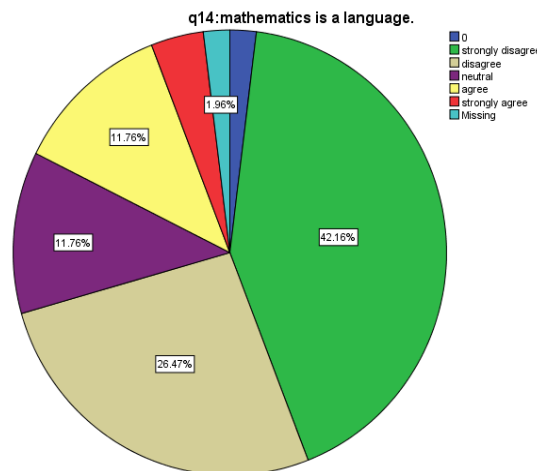


Figure 15

According to Figure 15: 42.16% of the sample students were strongly disagreed, 26.47% of the sample students were disagreed, 11.76% of the sample students was sample students were agreed, 11.76% of the sample students were neutral. As per the result, the contribution of this variable was negative.

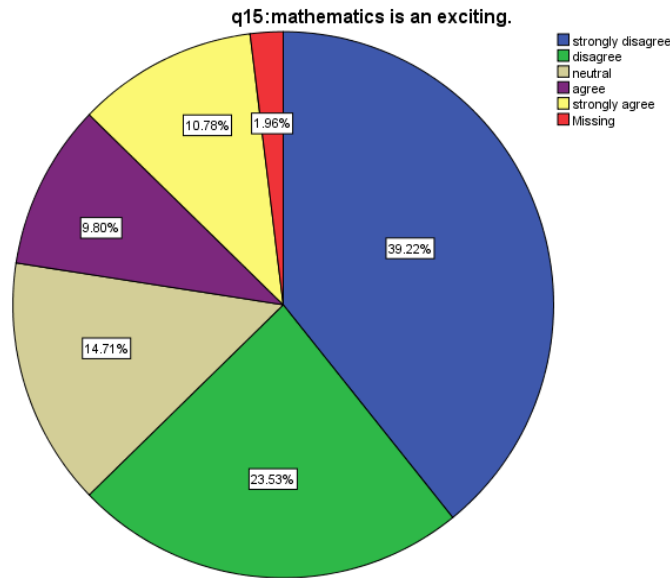


Figure 16

As can be seen from Figure 16: 39.22% of the sample students were strongly disagreed, 23.53% of the sample students were disagreed, 14.71% of the sample students was sample students who were neutral, 10.78% of the sample students were strongly agreed, 9.80% of the sample students were agreed. In general, majority of the students were strongly disagreed and the contribution of this variable was negative.

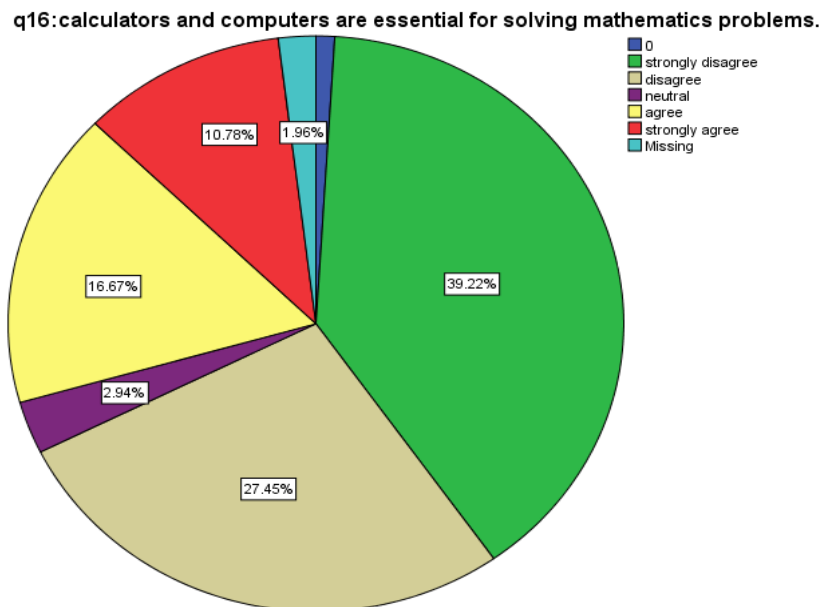


Figure 17

From the above Figure 17 the following results were obtained: 39.22% of the students were strongly disagreed, 27.45% of the sample students were disagreed, 16.67% of the sample students were sample students who were agreed, 10.78% of the sample students were strongly agreed, 2.94% of the sample students were neutral. In general, most of the sample students were strongly disagreed and the contribution of this variable was negative.

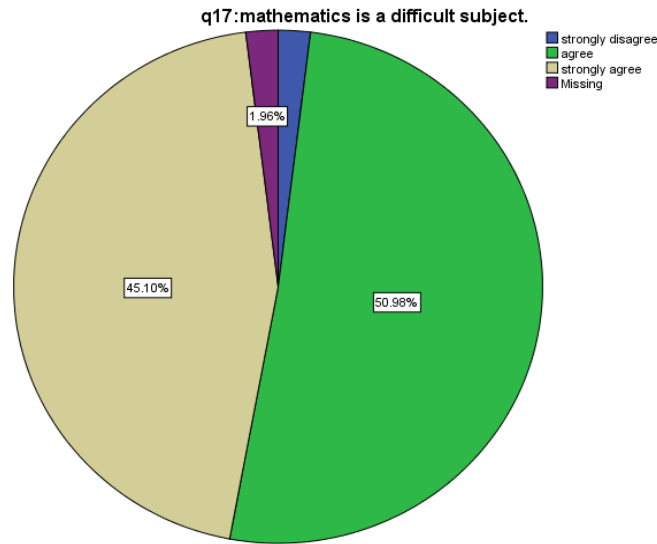


Figure 18

Figure 18 described the following results: 50.98% of the students were agreed, 45.10% of the sample students were strongly agreed, and 1.96% of the sample students were strongly disagreed. Therefore, from the result one can conclude that the contribution of this variable was negative.

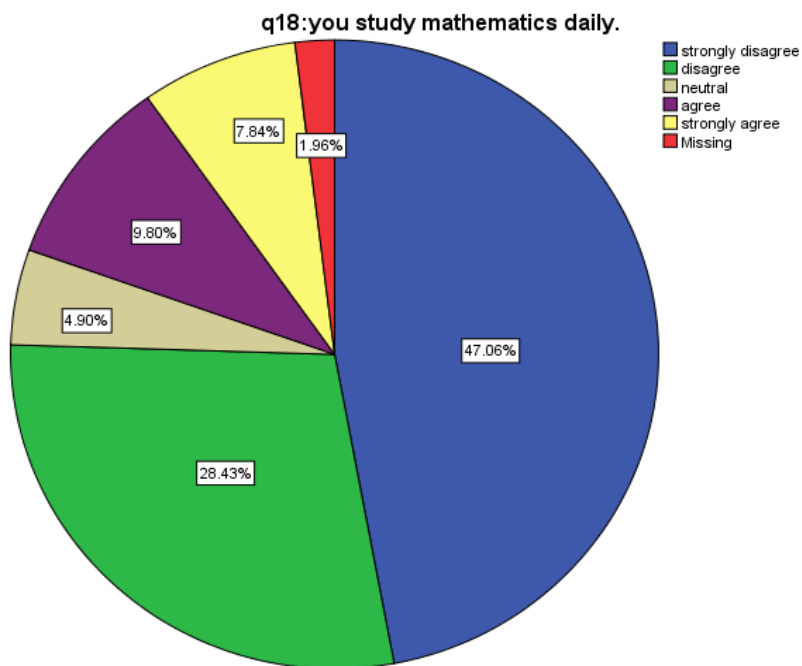


Figure 19

According to Figure 19 the following results were obtained: 47.06% of the sample students were strongly disagreed, 28.43% of the sample students were disagreed, 9.80% of the sample students were agreed, 7.84% of the sample students were strongly agreed, 4.90% of the sample students were neutral. As to the results of this Figure majority of the students were strongly disagreed, and the contribution of this variable was negative.

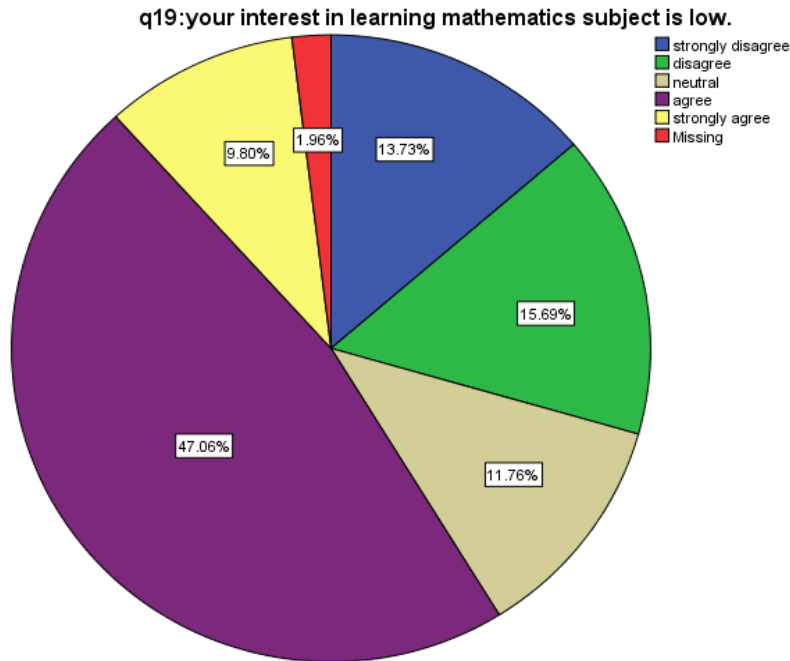


Figure 20

As can be seen from Figure 20 that 47.06% of the sample students were agreed, 15.69% of the sample students were disagreed, 13.73% of the sample students were strongly disagreed, 11.76% of the sample students were neutral, and 9.80% of the sample students were strongly agreed. Therefore, most of the sample students were agreed, and the contribution of this variable was positive. The attitude of the students was negative.

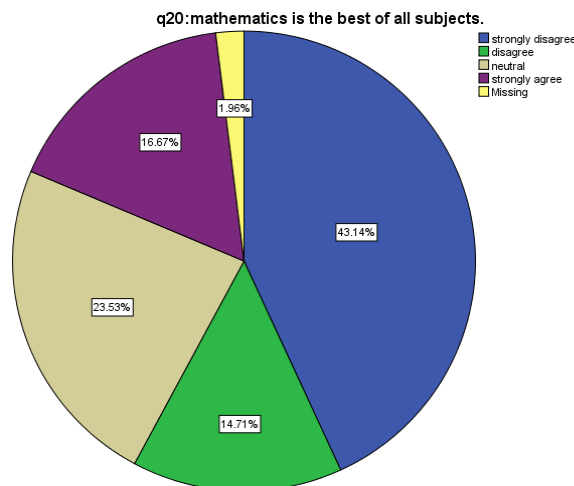


Figure 21

Figure 21 described the following: 43.14% of the sample students were strongly agreed, 23.53% of the sample students were neutral, 16.67% of the sample students were strongly agreed, 14.71% of the sample were disagreed. From this result one can conclude that majority of the students were strongly agreed, and the contribution of this variable was negative. As a result, the attitude of the students was negative.

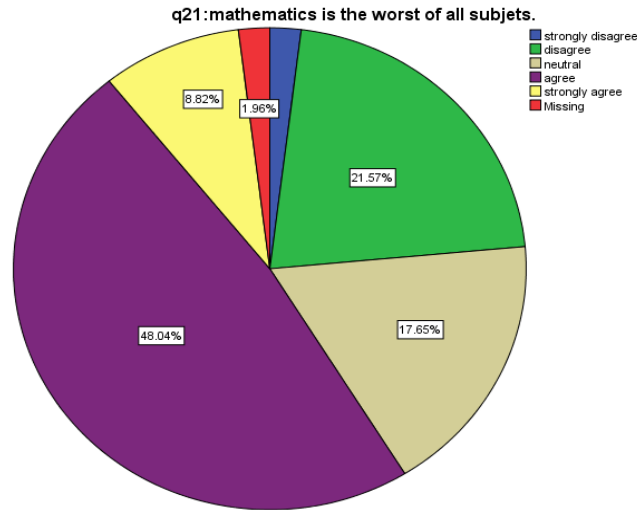


Figure 22

From Figure 22 one can observe that 48.04% of the sample students were agreed, 21.57% of the sample students were disagreed, 17.65% of the sample students were neutral, 8.82% of the sample students were strongly agreed.

Therefore, majority of the sample students were agreed. The contribution of this variable was negative and the attitude of the students was negative.

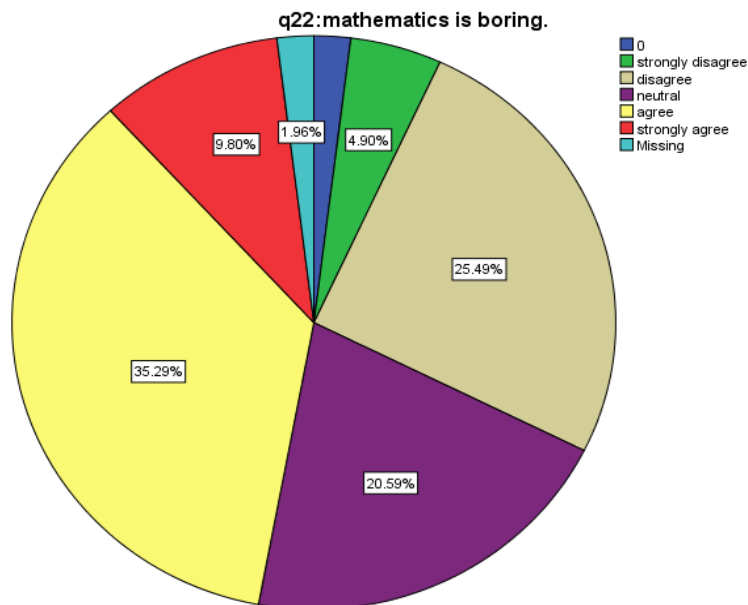


Figure 23

Figure 23 depicted that the following: 35.29% of the sample students were agreed, 25.49% of the sample students were disagreed, 20.59% of the sample students were neutral, 9.80% of the sample students were strongly agreed, and 4.90% of the sample students were strongly disagreed. Therefore, we conclude that majority of the sample students were agreed, and the contribution of this variable was negative and the attitude of the students was negative.

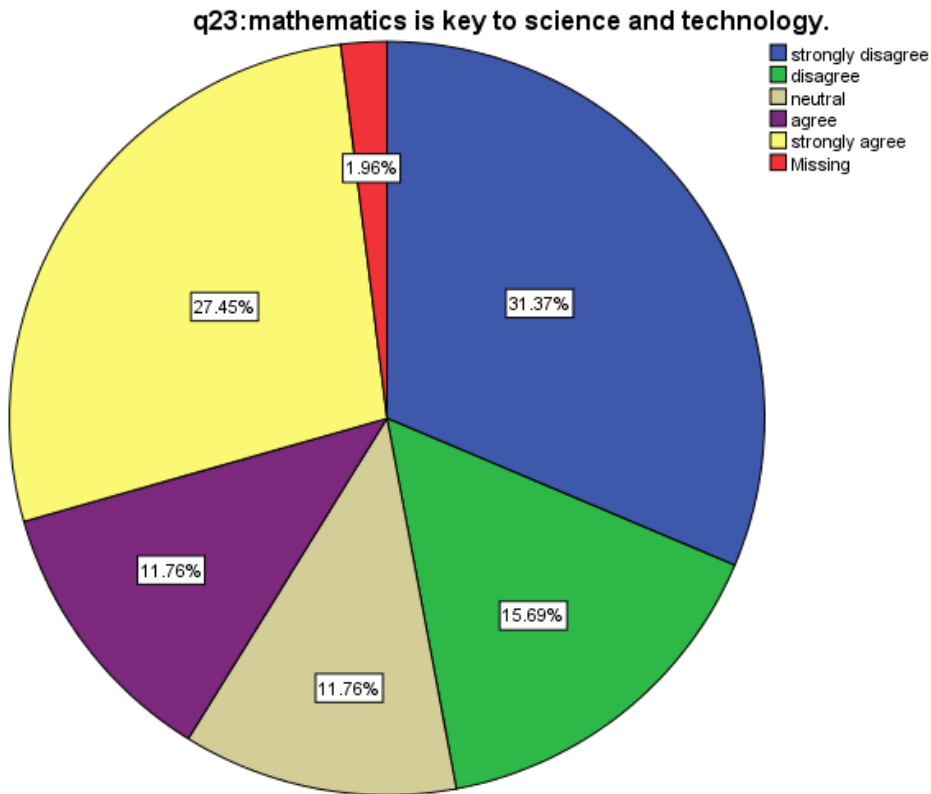


Figure 24

Figure 24 shows that 31.37% of the sample students were strongly disagreed, 27.45% of the sample students were strongly agreed, 15.69% of the sample students were disagreed, 11.76% of the sample students was sample students were agreed, and 11.76% of the sample students were neutral. Therefore, most of the sample students were strongly agreed and the contribution of this variable was negative.

4. Summary

To enhance students' attitude towards mathematics, better to follow all the needs of students' achievement in mathematics by the government, all the principles of the schools have to be taken in to consideration, of the students, the societies, the societies' needs and attitudes towards mathematics. Particularly, when the students' success in mathematics arises, it is better to involve the students' needs and attitude when designing the mathematics curriculum.

To meet this goal, the experienced bodies like teachers and administrators, who are nearer to the students,

should address all about the schools' environment, the needs and attitudes of the students to the executives bodies of designers.

On the same way, majority of the students agreed if learning would be based on their interest, needs or concern, their attitude would be enhanced.

5. Conclusions

According to the results of the study, the following were the conclusions made:

- [1] Majority of students' parent were not educated, did not provide reward to their children for their success in mathematics, did not ask their children to solve mathematics problems, hate mathematics,
- [1]. Majority of the students argued that there were no enough mathematics reference books in the schools libraries,
- [2]. Majority of mathematics teachers did not use discussion based teaching method,
- [3]. Students' parents did not provide materials and encouragement to their children,
- [4]. Majority of mathematics teachers did not give exercises and provide solutions to their students,
- [5]. Majority of the students did not consider mathematics as a science and language,
- [6]. Majority of mathematics teachers did not use simple and understandable language,
- [7]. Majority of the students did not consider calculator and computer as essential for solving mathematics problems,
- [8]. Majority of mathematics teachers did not use their time effectively,
- [9]. Majority of the students believe that mathematics is a difficult subject,
- [10]. Majority of the students did not study mathematics daily,
- [11]. Majority of the students did not have interest in learning mathematics,
- [12]. Majority of the students did not consider mathematics as key to science and technology,

6. Recommendations

- ❖ Mathematics teachers should assist the learning of students and check their progress in the class,
- ❖ Parents & teachers should use reward to their children for their success in mathematics,
- ❖ Mathematics teachers should use discussion based method of teaching mathematics,
- ❖ There should be enough mathematics reference books in the schools libraries,
- ❖ Mathematics teachers should give exercises and provide solutions,
- ❖ Mathematics teachers should use simple and understandable language,
- ❖ Students should know that calculators and computers are essential for solving mathematics problems,
- ❖ Students should study mathematics daily for their depth understanding,
- ❖ Students should develop interest towards mathematics subject,
- ❖ Students should not think as mathematics is a difficult subject,
- ❖ Students should consider mathematics as a science and language,
- ❖ Parents should like mathematics,

- ❖ Students should consider mathematics as key to science and technology,

Acknowledgements

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