INVESTIGATION ON THE ATTITUDE OF MATHEMATICS EDUCATION STUDENTS TOWARDS LEARNING MATHEMATICS IN GUILIN

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ABSTRACT

The aim of this study is to know attitude of mathematics education students towards mathematics learning in Guilin, China. The method used in this study is a qualitative method. The sample is taken using cluster random sampling from third and fifth semester students at Guangxi Normal University. Data were collected using questionnaire. The results of the research show that 27 male and 133 female students have a very good attitude towards mathematics. While, there are 4 male and 12 female students have a good attitude towards mathematics and 17 male and 5 female students have an average attitude towards mathematics. For the 5th semester students, there are 21 male and 151 female students with a very good attitude towards mathematics. On the other hand, there are 4 male and 18 female students that have a good attitude toward mathematics and 3 male and 7 female students have an average attitude towards mathematics.

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INTRODUCTION

Mathematics is one of the compulsory subjects in every level of education (Andini, Mulyani, Wijaya, & Supriyati, 2018). Mathematics has a goal to equip students with logical, analytical, systematic, critical Thinking, and creative thinking skills and also the ability to work together with others (Hutajulu, Wijaya, & Hidayat, 2019; Wijaya, Ying, & Purnama, 2020; Zuyyina, Wijaya, & Senjawati, 2018). Mathematics is one of the ways to increase the human quality as the mastery of mathematical thinking will enable humans to formulate thoughts that are clear, precise and thorough (Dini, Wijaya, & Sugandi, 2018). To be able to reach these goals, students are required to master mathematics and the teaching-learning activity needs earnest attention (Gopal, Salim, & Ayub, 2018; Prabowo, Anggoro, Adiyanto, & Rahmawati, 2018; Yi, Ying, & Wijaya, 2019). But even with this, students have a low interest towards mathematics (Cunhua, Ying, Qunzhuang, & Wijaya, 2019). There are a few factors that caused this such as students finds mathematics hard to understand, a scary subject and the teaching method is boring and monotone (Wijaya, Dewi, Fauziah, & Afrilianto, 2018). As a result, students are unable to understand mathematics properly.

The students' attitude can be separated into two types of respond which is the positive and the negative respond (Gesrianto, 2017). In other words, whether the students are able to accept or reject the lesson given. The students' attitude is the attitude shown by the students when adopting to the method or approach that is given by the teachers so that they would be able to achieve a good learning outcome (Rusnayati, Masripah, & Suwarma, 2018). The students' attitude is very closely related to the learning achievement (Tezer & Karasel, 2010). It is also related to the teachers' teaching method or approach because students will try to be able to adapt to the teachers' teaching style in class. If the method and teaching material is good, it can be guaranteed that the students' learning achievement will also be good.

Teaching method and teaching material are the two factors that cannot be left out when learning mathematics as it will influence the students' attitude towards mathematics (Maharani A., 2017; Syaifuddin, 2019). The teaching method can be optimized using great teaching material thus it can improve the students' attitude with the hope that (Dewi, Wijaya, Budianti, & Rohaeti, 2018), it will improve the students' learning achievement. We can see that there the relation between the teaching method and teaching method can affect the students' attitude towards the subject thought as shown below in figure 1.
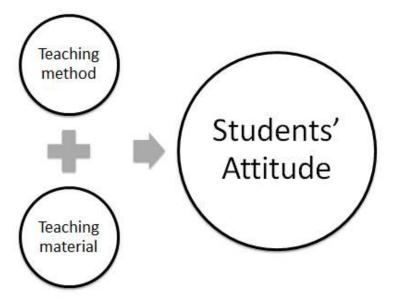
Figure 1. Thinking framework

METHOD

The sample for this research has a total of 402 students that consist of 198 of 3rd semester students and 204 of 5th semester students in Guangxi Normal University. Guangxi Normal University is the biggest university of education in Guangxi province.

This research will use the qualitative method with a hope that the research on the students' attitude towards learning mathematics can be more specific. The students were given questions on their basic information. Each set of Questionnaires will contain a cover letter that will explain the goal of this research and all the data collected will be concealed for research purposes only. The student can choose not to answer the Questionnaire if they do not want to answer them.

The Questionnaires are originally written in English which then are translated into Chinese language. The translation of the Questionnaires is done by a native Mandarin speaker with a degree in translation study. The translator is fluent in English and have an inclusive knowledge on education from the experience of being a lecturer in China. The translation is done carefully by one of the authors that is good in both English and Chinese. The Questionnaires are reviewed in 3 stages. The first stage was to give the Questionnaire draft to 5 native Chinese with a mathematic education background and good English skills. Some of

these reviewers are lecturers of mathematics education in Guangxi Normal University. Based on the review, the Questionnaire will then be reviewed. For the second step, 99 teachers answer the Questionnaires as a trial. After compiling the result, the researchers then got some inputs from the respondents to recheck the translations on some of the statements.

The third and final step from the review is to give the Questionnaire to another professional native Chinese that has experience in translating Questionnaires. When this final Chinese version matches the English version, it will be ready to be given out for research purposes.

Table 1. Students' Background Information.

Age (mean)	19.5 years (SD=6.32)
	18.5 years male students (SD=0.95)
	20.3 years female student (SD=0.87)
Gender	11.2 % male third semester
	88.8% female third semester
	13.7% male fifth semester
	86.3% female fifth semester
Grade level	50.51% third semester
	50.49% Fifth semester
Major subject	50% Mathematic
Relation with family	89.4% Good
	10.6% Bad
Homestay	75.9% In a city
	24.1% In a village

This research has a total of 402 students from Guangxi Normal University as the participant. Based on table 1, the average age of the male students is 18.5 years old with 106 students and the average of the female students is 20.3 years old with 296 students. In this research 11.2% are male and 88.8% are female.

From 402 students in total, there are 50.51% of them are from the 3rd semester and 50.49% are from the 5th semester. From the total of 198 students from the 3rd semester, 11.2% of them are male and 88.8% are females. From the total of 204 students from the 5th semester, 13.7% of them are male and 86.3% are females.

For the students' relationship with their family, 89.4% of the students stated that they have a good relationship while 10.6% of them does not. We can also see that 75.9% of the students are from the urban areas while 24.1% of them are from the rural areas.

RESULT AND DISCUSSION

This research uses the quantitative data that comes from the Questionnaire result. The score data will then describe the result of the students' attitude in different categories. From very good, good, average, bad, very bad. The data from the students includes the students'

understanding, mindset on mathematics and attitude towards learning mathematics. The Questionnaire result can be seen on table 2.

Table 2. Description of Students' Attitudes According to The Questionnaire

Class	N	Mean	Standard deviation	Minimum	Maximum
3nd semester	198	108.90	13.33	73	160
5th semester	204	111.24	11.07	85	154

There are 198 students from the 3rd semester with a standard deviation of 13.33. The highest attitude score is 160 and the lowest is 73 and with an average score of 108.90. With 204 students from the 5th semester, their highest score is 154 and the lowest is 85 with an average score of 111.24. The result of students' attitude according to the Questionnaire are separated into 5 categories based on the average and standard deviation. The analysis result can be seen in table 3.

Table 3. Questionnaire Result Based On The Category

Score Interval (X)	Category	3rd semester		5th semester	
		Male	Female	Male	Female
105 < X ≤ 140	Very good	27	133	21	151
93 < X ≤ 105	High	4	12	4	18
58 < X ≤ 93	Middle	17	5	3	7
35 < X ≤ 58	Low				
0 ≤ X ≤ 35	Very low				

Based on table 3, we can see that for the 3rd semester students, there are 27 male and 133 female students that has a very good attitude towards mathematics. While there are 4 male and 12 female students have a good attitude towards mathematics and 17 male and 5 female students have an average attitude towards mathematics. For the 5th semester students, there are 21 male and 151 female students that has a very good attitude towards mathematics. While there are 4 male and 18 female students that have a good attitude toward mathematics and 3 male and 7 female students have an average attitude towards mathematics.

The questionnaire is based on these 3 factors which are learning mathematics, lecturers and learning media. The 3rd semester mathematics students, their average attitude towards learning mathematics is 106.6, toward lecturers is 117.98 and towards learning media is 120.22. While for the 5th semester students, their average attitude towards learning mathematics is 125.88, towards lecturers is 113.09 and towards learning media is 131.44. Base on the observation result of the 3rd semester student, their lowest score is towards the learning mathematics while for the 5th semester student, their lowest score is towards lecturers. Based on the student's data, we can see that they maintain a positive attitude to improve their

language proficiency to be able to get better achievements.

After the researchers did an interview with the students, they explained how they were able to face problems and solves the mathematics questions. Students have a habit of ask questions, analyze the wrong answers and find solutions using mathematical software or any mathematics learning media. The students also explain that during class, all of them are active to discuss and use mathematics software to solve problems. The competitiveness between the students that are positive pushed the students to keep asking when they do not know or do not understand to their friends or the teacher. When the students have a good attitude towards learning mathematics, it will enable them to understand the concept faster and boost their self-confidence when solving a problem.

The students have a habit of learning the topic in advance by using the schools' mathematics books, journals, articles online and the library to look for related sources. According to the interview result, students stated that the method and approach of the lecturer in class is very clear and lecturers also connects mathematics to everyday life that can be applied in real life. Students also stated that the interaction between the lecturer and the student is very active which makes a positive impact on the students' attitude (Curtis, 2006). The students also said that they are happy that the approach that the lecturer use is a problem-based learning method. The weakness of this is that students look very tired when studying and deepening their basic knowledge. The students often repeat the lesson learned at night. The attitudes of the students are closely related with the motivation and support given by the teachers (Sanchal & Kuiti, 2013). Learning approach and teacher support are very important to improve the students' attitude and learning outcome.

CONCLUSION

Based on the result of the research in the form of questionnaires, the students' attitude towards learning mathematics for the 3rd semester students, there are 27 male and 133 female students that has a very good attitude towards mathematics. While there are 4 male and 12 female students have a good attitude towards mathematics and 17 male and 5 female students have an average attitude towards mathematics. For the 5th semester students, there are 21 male and 151 female students that has a very good attitude towards mathematics. While there are 4 male and 18 female students that have a good attitude toward mathematics and 3 male and 7 female students have an average attitude towards mathematics. The results of the research

reveal that there are no differences between 3rd semester students and 5th semester students in Guangxi Normal University towards learning mathematics. In Guangxi Normal University, teaching method and teaching material have a big impact on the students' attitude that causes the learning outcome to improve. It also indicates that Guangxi Normal University have a good Teaching method and teaching material. Suggestions for the researchers are the lecturer can use different approach, strategy, creative methods and ICT based learning media to improve the students' attitude towards learning mathematics and reach the standard.

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