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STUDENT'S ATTITUDES TOWARDS MATHEMATICS LEARNING USING A CONTEXTUAL APPROACH

Muhsin[1], Zulfa Razi [2], Sukarman Purba [3], Arif Rahman[4] , Ririna Ridara[5],
[1,2,5]Universitas Jabal Ghafur[3,4]Universitas Negeri Medan
[1]muhsinbrhm4@gmail.com, [2]zulfarazihb@gmail.com, [3]armn_prb@yahoo.com, [4] arifr81@gmail.com,
[5]rinadara241101@gmail.com

ABSTRACT

Contextual learning approach is a learning approach that links the material taught to real-world situations known to students and encourages students to make connections between the knowledge that students have and its application in everyday life. Because the learning process begins with the provision of problems in everyday life, it is expected that students will be accustomed to analyzing, applying and relating a concept. This study aims to see students' responses to mathematics learning and student responses to mathematics learning through a contextual approach. The research method used is quantitative descriptive research. The research method used is quantitative descriptive research, sampling techniques using purposive sampling, the research sample is class X1 students with a total of 30 student's, while the research variables are student attitudes towards mathematics learning and student attitudes towards mathematics learning through contextual learning. Data collection techniques using questionnaires with likert scales and data analysis using percentages. The results showed that the indicator of favourability towards mathematics lessons as a whole percentage of 91.7% compared to the percentage of neutral scores of 8.33%, meaning that students showed a positive response to mathematics learning. Likewise, students' response to mathematics learning through a contextual approach is 91% compared to the neutral score percentage of 9%, then students have a positive response to mathematics learning through a contextual approach

Keywords: Contextual Learning Approaches, Mathematics Learning, Student Responses

INTRODUCTION

Education has an important role in developing the quality of Human Resources. By having reliable, diligent, critical, systematic and logical Indonesian human resources, the Indonesian nation is ready and able to face global challenges. In accordance with the opinion expressed by Gaffar (Herman, 2006: 3) that one of the efforts to form human resources can be done through improving the quality of education. Mathematics plays a role in improving the quality of Indonesian human resources. This is in accordance with the opinion of Suherman (2001:28) (a) The position of mathematics as the parent of science that assumes that mathematics is a strategic basic science that must be studied at every grade level in educational units, both primary, secondary and higher. (b) The purpose of school mathematics learning is to train students to always be truth-oriented by developing logical, critical, creative, objective, rational, careful, disciplined attitudes and being able to work together effectively.

The description above shows the importance of studying mathematics in arranging students' thinking abilities, understanding problems, reasoning, solving problems, communicating, relating mathematical material to real circumstances, and being able to use and utilize technology

Based on the results of initial observations of researchers at SMAN 1 Mutiara, information was obtained that the learning approach that has been carried out at the school does not provide opportunities for students to construct and discover their own knowledge, learning that takes place

only in one direction and is only centered on the teacher as a source of knowledge information. This kind of learning the author mentions as learning Conventional. In addition to the state of learning, students also think that mathematics is a difficult and unpleasant lesson. This is in accordance with the students' test scores on mathematics lessons that are still low, students still have difficulty in doing math problems.

In addition to student learning achievements towards mathematics learning, students' attitudes towards mathematics and the learning process need to be considered. This is important because students' positive attitudes towards mathematics correlate positively with mathematics learning achievement (Ruseffendi, 2006). Students' attitudes towards mathematics are closely related to students' interest in mathematics. If the student is interested in mathematics, he will follow the learning process well and like to do math tasks.

Based on the findings of difficulties about low student learning achievement and low student interest in mathematics, one alternative to overcome these problems is through contextual learning. The contextual approach has seven components, namely; (1) constructivism, (2) finding, (3) asking, (4) learning societies, (5) modeling, (6) reflection, and (7) actual assessment (Johnson, 2009). This is in accordance with research (Muhsin, 2018) which shows that learning with a contextual approach can improve students' mathematical comprehension ability. Furthermore, according to Wilson (2001) contextual learning can help teachers in relating between the material taught to real-world situations known to students and can encourage students to make connections between the knowledge that students have and their application in their daily lives. Because the learning process begins with the provision of problems in everyday life, it is expected that students will be accustomed to analyzing, applying and relating a concept. In previous studies, it has been studied about the cognitive aspects of students towards contextual learning approaches while the results of this study discuss the affective aspects of students in the form of student responses or attitudes towards contextual learning.

LITERATURE REVIEW

Contextual learning is more related to the relationship between the material learned by students and practical uses in everyday life. Awareness of the usefulness of mathematics in everyday life will increase students' interest in learning mathematics and reduce students' boredom when studying mathematical concepts.

The contextual learning approach can be carried out by developing all seven components in learning (Johnson, 2009), namely; (1) constructivism, (2) finding, (3) asking, (4) learning societies, (5) modeling, (6) reflection and (7) actual assessment. The explanation of each component of contextual learning is as follows:

a. Constructivism

In simple terms, adherents of the school of constructivism assume that human knowledge is the result of the formation (construct) of man himself in knowing things. Bettencourt (Suparno, 2002) posits that, the person who learns it not only imitates or reflects what he is taught or reads, but rather creates understanding. This view becomes the cornerstone of thinking from contextual

learning. Students are not only able to passively accept knowledge from the teacher but can form understanding or knowledge actively.

The student needs to be accustomed to being able to construct his knowledge and be able to transform his knowledge in other, more complex situations so that the knowledge will belong to the student himself. The process of constructing knowledge can be carried out by the student himself based on previously possessed experience, and it can also be the result of discoveries involving the environment as a factor in the process of acquiring his knowledge

b. Inquiry

In line with the idea contained in the principle of constructivism, namely that knowledge is the result of constructing from humans, it will boil down to the discovery of something that humans want to know in solving problems, so that the results of these findings will become knowledge possessed by humans. In the process towards discovery, there will be activities in the form of observation, questioning, explaining, designing and testing hypotheses, analyzing and drawing conclusions.

To plan learning that is able to lead students to the process of discovery, Kusuma (2003) gives signs that need to be considered is:

1. Student activities for self-study are very influential.
2. The final result must be found by the students themselves.
3. The necessary prerequisites should already be in the student's possession.
4. The teacher only acts as a guide and director

c. Questioning

During the discovery process, in it occurs the activity of asking. Asking questions can occur between students and students, students with teachers, or students with other people outside of their friends and teachers in the classroom. The process of asking questions will occur when students need information that can be used to solve the problem at hand, but at that time students do not know the information they need. Johnson (2009) stated, for students, the activity of asking questions becomes a tool in digging up information, confirming what is already known and directing attention to aspects that are not yet known. As for teachers, asking questions is a way of encouraging, guiding and assessing students' abilities. The questioning activity will continue throughout the process of searching for the answer to the problem.

d. Learning Community

In the process of asking questions, there is interaction between students and students, students with teachers, and students with other people outside their school environment. When the student asks other students, the student has brought his partner into the learning process he is doing. The communication that occurs between the 'do not understand' and the one who 'understands' so that the 'do not understand' has created a learning society, because there is a process of sharing knowledge. Suryadi (2005) stated that with the occurrence of interaction between students, many advantages will be obtained, including shering knowledge and opinions, reflection on the results

of each other's thoughts and groups, arguing with each other on their respective opinions or results, and finally it will boil down to increasing understanding for each member of the group. In accordance with the concept of learning community which suggests that learning outcomes be obtained from cooperation with others. A learning community will be created if the communication carried out is at least two-way communication.

e. Modelling

This modeling can be in the packaging and delivery of the material so that students better understand the concepts taught. Modeling here means the existence of a model that can be imitated. The model can be in the form of how to operate something, how to manipulate concrete objects, or the teacher gives an example of doing something. The modeling process does not have to be done by the teacher alone, but it can also be the teacher showing students who are considered to have more abilities when compared to other students. The model carried out by both teachers and students, provides a great opportunity for other students to be able to do things well. That way all students have knowledge about how to learn or do things well and correctly.

f. Reflection

Reflection needs to be done to know what has been obtained during the process of construction, discovery, interaction in the learning society and the modeling process takes place. By looking back at what has been done, the student will precipitate the knowledge he has gained as a new structure of knowledge that is an enrichment or revision of the knowledge that has been previously possessed.

Through reflection, students can respond to the events of activities or knowledge that they just have. Students can know their shortcomings until it is possible to improve themselves. Knowledge becomes meaningful when the student can finally understand what he has gained through the process and usefulness of the knowledge he has until the knowledge settles in the student's mind.

g. Authentic Assessment

Authentic Assessment is an assessment during learning not only assessing the products produced by students, but the teacher assesses students starting from the student's activeness during learning to the learning outcomes he has obtained. It is intended to motivate and appreciate the efforts made by students and understand the concepts that the teacher teaches.

Furthermore, the way the teacher teaches in front of the class is one of the factors that affect student learning achievement. In addition, there are also other factors that also influence, namely factors that come from within students which are also influenced by external factors such as the learning activities they participate in. The internal factors in question are the level of intelligence of students and the attitude of students to mathematics. As stated by Ruseffendi (2006: 9-12) that two of the 5 things that affect student learning success are the level of intelligence and positive attitude of students.

With regard to the positive attitude of students towards mathematics, Ruseffendi (2006) suggests that children love mathematics only at the beginning of their acquaintance with simple mathematics. The higher the level of school and the more difficult the mathematics he learns, the less his interest in learning mathematics will be, so that if his interest has decreased in learning mathematics, it is feared that it will affect the learning outcomes he has obtained. Based on information from several research results, it was concluded that there is a positive relationship between students' attitudes towards mathematics and mathematics learning outcomes. Every time there is an addition of a positive attitude of students towards mathematics, there is an increase in mathematics learning outcomes (Siskandar, 2008: 444).

METHODS

The type of research used is descriptive research with quantitative analysis. So descriptive research is research that describes research results in the form of describing independent variables as they are, as well as not formulating hypotheses. In this study, researchers did not test hypotheses but tried to describe / describe circumstances or realities about students' attitudes or responses to mathematics learning as well as students' attitudes towards mathematics learning through a contextual approach. The study was conducted at SMAN 1 Mutiara school by drawing samples using side purposives, then the samples in the study were class X-1 students with a total of 30 students. The research variables are student attitudes towards mathematics learning and student attitudes towards mathematics learning through contextual learning.

The instrument used in this study was in the form of a student attitude scale in the form of a questionnaire. The questionnaire aims to see students' attitudes towards mathematics lessons, mathematics learning through a contextual approach. The questions are arranged in the form of closed questions, namely positive statements and negative statements about students' opinions, consisting of 20 statements. The attitude scale model used is the Likert attitude scale. The preparation of the researcher's instrument first conducts validity and reability tests to measure the validity of the instruments used. Attitude scale tests are given to students after obtaining learning with a contextual approach.

RESULTS AND DISCUSSION

This study measures students' responses and attitudes to mathematics learning through a contextual approach. The purpose of this questionnaire is to find out how students behave towards mathematics learning, mathematics learning using a contextual approach.

The calculation of the student's attitude score begins with calculating the average of each question, both positive and negative statements. The data processing uses percentages by comparing students' attitude scores with neutral scores. The neutral score of each indicator is the average of the average score of each statement contained in the indicator. If the average attitude score is smaller than the neutral score, it means that students have a bad attitude in learning mathematics through a contextual approach, but if the average attitude score is greater than the neutral score, it means that students have a good attitude in learning mathematics through learning with a contextual approach. The percentage of students' attitudes towards mathematics learning is presented in table 1 below:

Table 1

Percentage of Student's Attitudes Mathematics Learning

Aspects	Indicators	Statement	Attitude score					Neutral Score				
		No	cor e	Indicators	%	Total	%	core	Indicators	%	Total	%
Student Attitudes Mathematics Learning	HappyWith Learning Mathematics	1 (-)	0,93	0,92	91,7 %	0,92	91,7 %	0,07	0,08	8,33 %	0,08	8,33 %
			93 %					7 %				
		2 (+)	0.93					0,07				
			93 %					7 %				
		7 (-)	0,83					0,17				
			83 %					17 %				
		19 (+)	0,97					0,03				
			97 %					3 %				

Table 1 above states that for indicators of favorability with mathematics lessons as a whole, the percentage of indicator scores is 91.7%. The score of this indicator is greater than the neutral score percentage of 8.33%. This means that if the average attitude score is greater than the neutral score, the student has a positive attitude. For the percentage of students' attitudes towards learning mathematics through a contextual approach can be presented in table 2 below:

Table 2
Percentage of Students' Attitudes Mathematics Learning through a Contextual Approach

Aspects	Indicators	Statement	Attitude Score					Neutral Score				
		No	Score	Indikators	%	Total	%	Score	Indicators	%	Total	%
tudent Attitudes Learning Mathematics through Contextual Approaches	A Passion for Learning witha Contextual Approach	3 (+)	0,90	0,88	87,5 %	0,91	91%	0,10	0,13	12,5 %	0,09	9%
			90 %					10 %				
		4 (+)	0,90					0,10				
			90 %					10 %				
		8 (-)	0,87					0,13				
			87 %					13 %				
		15(-)	0,83					0,17				
			83 %					17 %				
	Students Feel the Role of Presenting Student Worksheets	5 (+)	0,93	0,95	95 %			0,07	0,05	5 %		
			93 %					7 %				
		6 (+)	0,97					0,03				
			97 %					3 %				
		9 (-)	0,93					0,07				
			93 %					7 %				
		18(-)	0,97					0,03				
			97 %					3 %				
	Students Show Sincerity and Interest i nFollowing the Mathematics	10(+)	0,93	0,92	91,7 %			0,07	0,08	8,33 %		
			93 %					7 %				
		12(-)	0,97					0,03				
			97 %					3 %				
			0,93					0,07				

			93 % 0,83 83 %				7 % 0,17 17 %					

Table 2 above states that for indicators of student attitudes towards learning mathematics through a contextual approach, the overall percentage of the indicator score is 91%. This indicator score is greater than the neutral score of 9%, meaning that students have a positive attitude. In general, the average indicator of student attitudes towards learning with a contextual approach shows the average positive attitude. It can be concluded that students have a positive attitude towards learning mathematics using a contextual approach. Conclusions about the average student attitude can be seen in the table below:

Table 3
Recapitulation of Average Student Attitude Learning
with a Contextual Approach Based on Attitude Scale Indicators

No.	Indicators	Attitude Score Indicators (%)	Neutral Score Indikator (%)	Information
1	Happy with math lessons	92 %	8 %	Positive
2	Fondness for learning with a contextual approach	88 %	12 %	Positive
3	Students feel the role of presenting the Student Activity	95 %	5 %	Positive
4	Students show earnestness and interest in following the mathematics learning process	92 %	8 %	Positive

Based on student attitudes through the student attitude questionnaire, it was found that in general, student responses to mathematics learning through a contextual approach were very good. The students' responses to the lessons of mathematics, the learning of mathematics through a contextual approach, showed a positive attitude. So it is hoped that students will be more comfortable and enjoy learning mathematics, be more active in learning mathematics, try to solve the mathematical problems given. This's in line with research (Muhsin, 2013) which shows that learning with a contextual approach has a positive effect on improving student learning achievement about students' mathematical comprehension and problem-solving abilities as well as students' interest in learning.

The results showed that students look more comfortable and enjoy learning in groups in solving math problems so that learning that used to be teacher-centered but is now student-centered, teachers are only physilitators, motivators and moderators. In contrast to this contextual learning approach, students have begun to get used to constructing the material they are studying

themselves and are able to understand the relationship between mathematical material in everyday life.

CONCLUSION

Based on the results of research and discussion, it can be concluded that students show a positive attitude towards mathematics learning as well as the presentation of mathematics learning through a contextual approach, student attitudes also show positive attitudes. Learning is no longer teacher-centered but student-centered learning so that students can explore for themselves information about learning materials while the teacher is a facilitator in learning. For further research, it can measure students' psychomotor abilities against contextual learning approaches.

Furthermore, the suggestion is that learning with a contextual approach can be used as an alternative learning method to be implemented in the development of mathematics learning in the classroom.

REFERENCES

1) Herman, T. (2006). Problem-Based Learning to Improve The Mathematical Thinking Ability of High School Students. Doctoral dissertation, not published, Sekolah Pascasarjana Universitas Pendidikan Indonesia: Bandung.
2) Johnson, E. B. (2009). Contextual Teaching & Learning; Menjadikan Kegiatan Belajar-Mengajar Mengasyikkan dan Bermakna. Bandung : MLC
3) Kusuma, D. A. (2003). Improving Students' Mathematical Connection Ability by Using Inquiry Methods. Master's thesis, unpublished, Sekolah Pascasarjana Universitas Pendidikan Indonesia: Bandung.
4) Muhsin., Nurlaelah, E., Johar, R., (2013) Improving The Ability to Understand and Solve Mathematical Problems through Learning with a Contextual Approach. Journal of Opportunity. Vol II, No 1, pages 13-24.
5) Muhsin., Zulfa Razi (2018). Learning with a Contextual Approach to Improve Students' Mathematical Comprehension Ability. Journal of Opportunity. Vol.VI No.2, pages 15-21.
6) Ruseffendi, E.T. (2006). Introduction to Helping Teachers Develop Their Competencies in Teaching Mathematics To Improve CBSA (revised edition). Bandung : Tarsito.
7) Siskandar. (2008). Student Attitudes and Motivations in Relation to Mathematics Learning Outcomes in Elementary Schools. http://jurnal.pdii.lipi.go.id/admin/jurnal/140 7208438451.pdf
8) Suherman, E., Turmudi., Suryadi, D., Herman, T., et. al. (2001). Contemporary Mathematics Learning Strategies. Bandung: JICA UPI
9) Suparno, P. (2002). Philosophy of Constructivism in Education. Yogyakarta: Kanisius
10) Suryadi, D. (2005). The Use of Indirect Learning Approaches and Direct and Indirect Combined Approaches in Order to Improve The High Level Mathematical Thinking Ability of Junior High School Students. Doctoral dissertation, Sekolah Pascasarjana Universitas Pendidikan Indonesia: Bandung.