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The Effectiveness Of Students' Learning Motivation On Learning Outcomes Using The Reciprocal Teaching Learning Model

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ABSTRACT

The purpose of this study was to see the effectiveness of students' learning motivation on learning outcomes using the reciprocal teaching-learning model. The method used in this research is quantitative. In this study, the instruments used are questionnaires and tests, where the independent and dependent variables will use a questionnaire, and learning outcomes will be measured using tests. At the same time, the test is used to determine whether there is a difference in scores before and after using the mathematical learning model and to determine students' learning outcomes. Based on the objectives of the research and discussion that have been adjusted in previous chapters regarding the effectiveness of the application of the reciprocal teaching-learning model on the learning motivation of students in class VIII in one of the MTs in Tegal, the following conclusions are obtained: student motivation in learning by using the model reciprocal teaching-learning on students' learning motivation. The students' motivation to learn mathematics in class VIII C received an average score of 74.84% for all indicators in the good category. On the learning outcomes of students in the experimental class, namely class VIII C, which at the time of learning using the reciprocal teaching-learning model, the average value of the class was 82.22. While in the control class, namely class VIII D, which uses conventional methods at the time of learning, the average score is 69.13. This shows that using reciprocal teaching-learning models can motivate students to learn and ultimately lead to improved learning outcomes.

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1. INTRODUCTION

When we talk about math problems, our minds are, of course, about numbers, numbers, and symbols in calculations. The word mathematics comes from the Greek word mathema, which means science, knowledge or learning; apart from the phrase mathema,

mathematics also comes from the word mathematikos which means love to learn. According to Ziegler [1], mathematics is an abstract subject, so the teacher's ability is required to be able to seek the application of the right approach according to the level of students' mental development. So we need a teacher or teacher who can help students so they understand math students and think mathematics is a complex subject [2]–[5].

Mathematics is considered to be one of the most challenging subjects for students. All because of the initial concept of students' understanding of mathematics. This happens when the teaching and learning process occurs, which is one indicator of the success of student learning achievement. According [6]–[8], the teaching and learning process is a systematic process, meaning that the process carried out by teachers and students in the learning place involves sub-sub, parts, components or elements that interact to achieve a goal. One component that can measure the success of a teaching and learning process is the level of achievement students earn in learning. Learning achievement, a benchmark for a learning process's success, cannot be separated from several factors that often occur [9]–[11].

The results of student achievement are imposed not only on the students but also on the teachers who teach during teaching and learning activities [12], [13]. Many events can occur when learning occurs; these events can come from anywhere, both from the teacher and the students. From the teacher's point of view, such as the delivery of material that is not clear, the lack of interaction between the teacher and students and the lack of attractiveness in the delivery of the material being taught [12], [14]–[16]. Meanwhile, in terms of students, such as lack of preparation in receiving material, boredom with how to explain the teacher who is monotonous, and much more. These events can also affect student achievement outcomes.

Many things can affect the results of student achievement, one of which is the students' learning motivation [17]–[20]. Motivation is the driving force that exists within a person to carry out certain activities to achieve a goal. Students' motivation towards a lesson can have many aspects, such as motivation [21]. After all, they are happy with the learning, pleased with the delivery of the teacher when teaching, or even happy because they always get high marks in the lesson.

Based on initial observations on the Learning Media course conducted at one of the MTs in Tegal, the absorption capacity of students is still low, with student learning outcomes that are still very minimal. This presentation is, of course, the result of learning

conditions dominated by the teacher and there is no access for students to develop independence through their knowledge and thought processes, so students become passive. However, the teacher prefers to apply the model because there are no practical tools and materials; it is enough to explain the concepts in textbooks or other references. The mathematics learning achievement of class VIII students has not yet shown satisfactory results. This is evidenced by the mathematical scores of participants who are still below 70 as the minimum completeness score.

To anticipate these problems, they are not sustainable, and a suitable learning model is necessary. In learning mathematics, a teacher is expected to be able to provide teaching with a learning model that can provide a good understanding for students, making students able to motivate themselves. This problem is often encountered in teaching and learning activities in the classroom. Therefore, it is necessary to apply a learning model to help students understand teaching materials and their applications in everyday life. One is by using the reciprocal teaching model.

The best model of reciprocal teaching or teaching is a construction approach based on the principles of making or asking questions [22]–[24]. In this reverse learning model, students act as teachers, teaching their friends about what is being discussed in class. Students are required to be independent, namely learning by utilizing existing textbooks. Thus, the success of learning is not only influenced by the learning model but also by the ability to think creatively in mathematics and students' learning motivation. So a student is expected to have the motivation and enthusiasm for learning that is carried out well. The results recommend that teachers apply the reciprocal teaching-learning model in mathematics learning to achieve the expected essential competencies and improve student learning outcomes [24]–[28]. Meanwhile, learning outcomes can be increased by using the reciprocal teaching-learning model [25]–[30].

2. METHOD

The method used in this research is quantitative because the data obtained is a collection of values and numbers that can be calculated mathematically by statistical calculations. Thus, the study will measure how much effect the students' learning motivation has on learning outcomes using the reciprocal teaching-learning model.

In this study, the population was all class VIII students in one of the MTs in Tegal, amounting to 136 students. The technique used to determine the sample of students that

will be used in this study is the Simple Random Sampling class sample. Selecting the sample randomly is done by lottery. This lottery technique is carried out to avoid subjective elements, namely by giving equal rights to each subject to be the research sample. The draw was carried out twice. The first draw was conducted to determine which classes would be taken in this study. After the first drawing was carried out and the results obtained for classes VIII B, VIII C, and VIII D, another draw was conducted to determine the control, experimental, and trial classes. So that we get class VIII B as the practical class, class VIII C as the experimental class, and class VIII D as the control class.

This study has two variables: the effectiveness of the application of the reciprocal teaching model as an independent variable (X) and students' learning motivation as the dependent variable (Y). In this study, the instruments used are questionnaires and tests, where the independent and dependent variables will use a questionnaire, and learning outcomes will be measured using tests. At the same time, the test is used to determine whether there is a difference in scores before and after using the mathematical learning model and to find out students' learning outcomes.

3. RESULTS AND DISCUSSION

Students' motivation can be influenced by two aspects, namely motivation that comes from within oneself and motivation that comes from the environment. Motivation is the driving force within a person to carry out certain activities to achieve a goal [17]–[20]. Motivation can be a reference for students to be more active in learning and increase curiosity in student learning. In addition, motivation can help students encourage better students, move students voluntarily in terms of education, and clarify the learning objectives of students themselves [31]–[33].

Judging from the results of the overall calculation of the indicators of the motivation questionnaire, it was obtained an average of 74.84%, with the highest percentage of indicators being the indicator of the willingness of students to accept high scores with the acquisition of a portion of 89.44 as shown in table 1 below. Meanwhile, the lowest percentage category is found in the happy indicator of doing math problems with a percentage gain of 58.05. This is very contradictory because students want to get high scores but are not satisfied when spelling practice questions.

Table 1. Recapitulation of respondents' motivation to learn the mathematics of students

No	Indicator	Percentage (%)	Category
1	Happy with math	70,74	Good
2	Happy with math teacher	73,89	Good
3	Enjoy doing math problems	58,05	Enough
4	The willingness of students to work on math problems	67,96	Good
5	The willingness of students to do homework	75,55	Good
6	The willingness of students to get good grades	89,44	Very Good
7	Awareness of students to learn	64,26	Good
8	Awareness of students to explore teaching materials	81,67	Very Good
9	Awareness of students not to cheat	83,89	Very Good
10	Encouragement from parents	79,17	Good
11	Drive for achievement	78,61	Good
	Total	823,23	
	Average	74,84	

The willingness of students to get high scores is the extrinsic motivation for students. Where this motivation comes from the environment outside the individual, according to Legault [34], extrinsic motivation will affect individuals because they feel they get support from the external environment that encourages them to get better. When learning using the reciprocal teaching-learning model, one thing that one must do is teamwork. A good partnership, it will make the group good too. Therefore, students will inevitably try to do well in front of their friends and solve the problems given by the teacher. So those students are motivated to get high scores.

Meanwhile, the indicator of happiness in doing math problems is an intrinsic motivation contained in students. According to Djamarah [35], this motivation can spur students to get good grades because, in each individual, there is an urge to do something. Even according to Sudjana [36], student learning outcomes are influenced by 70% of their abilities and 30% by the environment. However, looking at the stages of reciprocal teaching-learning that work in groups, students sometimes do not have the confidence to work on questions individually following the weakness of reciprocal teaching contained in Suyitno [37] that the liability of learning by using reciprocal teaching lies in the students' lack of confidence to appear or show their abilities in front of their friends.

A measure of the success of learning is seen from the learning consequences and accomplishments acquired by students. Learning achievement is proof that will show students' level of ability and success in achieving curricular goals [38]. In this study,

student learning outcomes were obtained after students did learning using the reciprocal teaching-learning model.

A reciprocal teaching-learning model is a constructivist approach based on the principles of making or asking questions. Constructivist pastor is a process of constructing new knowledge or meaning together [39]. With the existence of a suitable learning model during teaching and learning, it is hoped that students will be more motivated both in terms of learning and in obtaining maximum learning outcomes.

When learning takes place using the reciprocal teaching-learning model, it can be seen that students' attitude is enthusiastic, and they become more active during math lessons. All students responded well and actively participated in teaching and learning activities during mathematics learning. Students become more enthusiastic and are no longer pessimistic or afraid of mathematics. Students feel that learning mathematics can be more enjoyable and less stressful. In addition, students seemed motivated by looking more critical of what was conveyed by their friends during the discussion. It can be seen from the results of the average test scores for learning outcomes in the experimental class whose learning uses the reciprocal teaching model obtained 82.22, and the highest score obtained is 90 as seen in table 2 below.

Table2. Description of Students' Mathematics Learning Test Results in Experiment Class

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
experimental class	36	76	90	82,22	4,530
Valid N (listwise)	36				

Learning in the experimental class, namely in class VIII C, by using the reciprocal teaching-learning model, shows the enthusiastic attitude of students and becomes more active during math lessons. All students responded well and followed the lesson actively. Students become more enthusiastic and feel that learning mathematics is no longer scary. Students admitted that learning mathematics using the reciprocal teaching-learning model was more fun and less stressful, although when explaining to friends, sometimes they still felt afraid and said the wrong thing. However, frequently advancing and explaining makes it easy to understand the material being taught.

In addition, students are more motivated during learning. It can be seen that students are more critical of what is explained by their friends, and some students sometimes come to clarify if the friend who explains in front is wrong. This is indicated by

the value on the test of learning outcomes in the experimental class with an average value of 82.22, which is higher than the standard value.

Meanwhile, in the control class, which used conventional methods at the time of learning, the average score was 69.13, with the highest score being 82. It can be seen that the score in the experimental class was higher than the control class. In addition, seen from the acquisition of the student motivation questionnaire, which shows an average score of 74.84% is included in the good category, it can be said that students' learning motivation is in a good category as seen in table 3 below.

Table 3. Description of Students' Mathematics Learning Test Results in Experiment Class

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
control class	32	52	82	69,13	6,465
Valid N (listwise)	32				

The control class, namely class VIII D, is very different compared to the experimental class. Learning in the control class is using conventional methods, namely by the teacher providing the material and explaining it to the students. Many students are silent in learning using conventional methods and take learning for granted. Whether the learning delivered makes students understand or not. However, students tend to be silent and are reluctant to ask the teacher or their classmates, unlike the experimental class, which obtained results higher than the predetermined minimum completeness criteria. In the control class, the average value obtained is below the standard value of 69.13.

Although the result of the determinant coefficient only shows an effect. By looking at one of the learning indicators, it can be said to be effective according to Kunandar [40], who states that learning is said to be effective when viewed from the learning outcomes, namely the value of learning outcomes that are greater than the value of the minimum completeness criteria that have been set. Therefore, judging from the experimental class learning outcomes test using the reciprocal teaching-learning model with an average value of 82.22, which is greater than the minimum completeness criterion value of 70, the learning outcomes are said to be effective. Thus the research hypothesis can be accepted. Thus, it can be concluded that students' learning motivation is effective on learning outcomes by using the reciprocal teaching-learning model.

4. CONCLUSION

Based on the objectives of the research and discussion that have been adjusted in previous chapters regarding the effectiveness of the application of the reciprocal teaching-learning model on the learning motivation of students in class VIII in one of the MTs in Tegal, the following conclusions are obtained: student motivation in learning by using the model reciprocal teaching-learning on students' learning motivation. The students' motivation to learn mathematics in class VIII C received an average score of 74.84% for all indicators in the good category.

On the learning outcomes of students in the experimental class, namely class VIII C, which at the time of learning using the reciprocal teaching-learning model, the average value of the class was 82.22. While in the control class, namely class VIII D, which uses conventional methods at the time of learning, the average score is 69.13. This shows that using reciprocal teaching-learning models can motivate students to learn and ultimately lead to improved learning outcomes.

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