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The Influence of Reciprocal Teaching Learning Models to Mathematics Learning Outcomes of Grade Vii Students' Junior High School 89 Jakarta

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ABSTRACT

"The Influence of Reciprocal Teaching Learning Models to Mathematics Learning Outcomes of Grade VII Students' Junior High School 89 Jakarta". Essay. Jakarta: Departement of Mathematics Education in the Faculty of Teacher Training and Education, Muhammadiyah Prof. Dr. HAMKA University, 2020. This study aims to determine the effect of mathematics learning outcomes by using the Reciprocal Teaching learning model on class VII SMPN 89 Jakarta in the first semester of the 2019/2020 academic year. This research method uses quasi experiment. The study population was 71 students. The sampling technique used is saturated sampling. In the validity test using Biseral Point Colleration as many as 10 essay questions with 6 valid questions and 4 about drop questions. While the reliability test using the KR-20 formula obtained r count = 0,491 > r table = 0,339, then the data has a reliable instrument. Furthermore, the data were analyzed by the requirements test, namely the normality test using the Liliefors Estimated Error Test obtained by Lo 0,138 < Lt 0,151, it can be concluded that the data is normally distributed. While the homogeneity test using the Fisher test obtained Fcount 1.08 < Ftable 1.77, it can be concluded that the homogeneity test has a homogeneous distribution of group variance data. In the hypothesis test used t-test obtained tcount 4,446 with ttable 1,995 at α = 0,05, then H0 is rejected which states that there is a significant influence on learning by using the Reciprocal Teaching learning model on learning outcomes mathematics seventh grade students at Junior High School 89 Jakarta.

Keywords: Reciprocal teaching learning models, learning outcomes, mathematics.

INTRODUCTION

The aim of mathematics in junior high school (SMP) is an understanding of the mathematics disciplines and the work skill (project) to produce a product that will result in the mastery of one's competence as a result of learning. Therefore, mathematical learning should be oriented at activities that support the understanding of concepts, principles, procedures, in relation to the context of their daily lives outside of school, so that math learning becomes meaningful and enjoyable.

The creation of a meaningful learning experience for students is certainly not the easiest thing if many teachers are accustomed to designing learning that is just sitting, hearing, and silent. While there will be many difficulties in realizing. But there are many ways you can make learning more quality. Teachers can look for references in designing interesting and enjoyable learning by using learning models that correspond to students ' characteristics.

Based on the results of observations conducted at SMPN 89 Jakarta that students do not yet have the ability to be an indicator of understanding. One of the factors that caused it to happen is that the learning process is still one-way communication (teacher centered), teachers are not optimal using learning media. Ongoing learning has not manifested the whole student modality of learning. The method used by teachers in delivering mathematics lessons is only lectures, practice questions, questions and answers and assignments, the absence of problem-solving activities in the form of group or individual assignments, students are just sitting quietly listening to what the teacher explained, noting the material and working on the practice in their respective training books. Students also lack active participation, raising questions and Opinions.

Addressing the problems described above, it is necessary to do so in order to improve the learning outcomes of mathematics in order to achieve maximum results or at least reach minimum submission criteria (KKM). The reciprocal Teaching approach offers solutions. In the pendekatan reciprocal teaching

approach. There are four Basic Strategies involved in the learning process, i.e. the application of questions, clarifications, and predictions.
According to [1] the study of reciprocal Teaching is one of the learning models that have the benefit of learning goals achieved through self- learning activities and students are able to explain their findings to other parties. The characteristic of reciprocal teaching Learning by [2] is: 1) dialogue between students and teachers, each of which gets a turn to lead the discussion; 2) reciprocal means an interaction in which a person acts to respond to another; 3) a structured dialogue using four strategies: Merangum (summarizing allegations thereof), making questions (questioning), clarifying (clarifying unpressing),and predicting (predict predicting).

In accordance with the background and the formulation of problems as outlined, the purpose of this research is to: prove and know the influence of the learning Model of Recipocal teaching to the mathematics learning outcomes of grade VII students in SMPN 89 Jakarta.

RESEARCH METHOD

The study was conducted in class VII SMPN 89 Jakarta, odd semester, and the school year 2019/2020. The population in this study was all students of grade VII smpn 89 Jakarta school year 2019/2020. The total of 71 Students is a class VII G amounting to 36 students, class VII H which amounted to 35 students. The sampling techniques used in this study were the saturated sampling techniques. [3] argues that I hadanother saturated sample being a census, in which all members of the population were made samples. Saturated samples are often interpreted as the maximum samples, plus nothing will change the representation. As stated by [4]. A quasi experimental Design experiment has a control group. In this study used two classes. Namely the control class And the experimental class. The Total number of students in both classes was 71. The student control class amounted to 36 students and 35 in the experimental class. The data collection technique used is a form of essay. Each keyword problem is given a maximum value of 4/5, while the wrong or unanswered question keyword is assigned a value of 0. Before the instrument is given to the sample, the validity test and reliability test were first carried out. After testing – these tests, then conducted a test of normality and homogenity which later became a requirement for hypothesis testing. To test the hypothesis used degrees of freedom at the level of significance $\alpha = 0.05$ with Tcount higher than the price of Ttable. In the sense of thank Ho if Tcount < Ttable and instead reject Ho if Tcount > ttable.

RESULTS AND DISCUSSION

The Data obtained in this study was analyzed with descriptive statistics and inferential statistics i.e. test-T. The Data in this study is the result of students ' mathematical learning outcomes as a result of applying Reciprocal teaching learning models on experimental classes and expository learning models in the control class.

Table 4: Recapitulation of math learning results calculation

Descriptive statistics	Experimental classes	Control class
Mean (M)	59.58	46.17
Median (Md)	61	46
Mode (Mo)	4	57
Variance	150.85	162.96
Standard deviation	12.28	12.76
Max	86	71
Min	29	25

From the research data obtained the median price of learning results Mathematics students grade VII H as experimental classes at SMPN 89 Jakarta is 59,58 Median 61 mode 54 with Standart deviation 12.16 while for the average price learning results control class is 46.17 median 46 mode 32 with standard deviation 12.76. To find out if there is an impact on the average price of math learning results before and after treatment, it is necessary to do further analysis.

The hypothesis testing is done by testing the similarities and averages according to the hypotheses done then the tests conducted were test similarities of two averages two parties. To test Ho stating that there is no influence on the model of Reciprocal teaching learning to study results of the mathematics of grade VII students at SMPN 89 Jakarta , then the test-T.

From the calculation resultt count = 4,446 whereas Ttable = 1.995 at the equivalent of α = 0.05 significance. Mean Tcount > ttable = 4,446 > 1.995 states that H1 was accepted and H0 rejected, thus there was the influence of the model of reciprocal teaching Learning to the learning outcomes of grade VII Mathematics students' at SMPN 89 Jakarta.

Some of the things that can be used for the reason that the model of reciprocal teaching learning is better than the expository model, which is the learning model of reciprocal teaching always involve students. During the learning process, students are more active and motivated to follow the material being taught, because in the process teachers emphasize the students to work together and exchange opinions in completing the task given by the teacher. This is in accordance with student feedback responses during learning. So that students are trained to hone their knowledge and can build their own knowledge using the entire student's own modality.

Overall, the model of Reciprocal Teaching Learning gives students the opportunity to learn by involving the entire student's modality so that students become self-taught and dare to express opinions, discuss, apply concepts. Therefore, researchers are able to learn that a reciprocal teaching learning model can influence student learning outcomes, especially Mathematics Learning. This is evidenced by the average value matematika of Students ' mathematical learning outcomes using a higher reciprocal Teaching Learning model

REFERENCES

[1] Suyitno, Amin et al.. *The Fundamentals and Learning of Mathematics I (Diktat).* Semarang: Department of Mathematics FMIPA, IKIP Semarang. 2001
[2] Palincsar, A. S., & Brown, A. L. *Palincsar reciprocal Teaching.* Vol. 2, pp. 117 – 175. 1984.
[3] Sugiyono*. Statistics for research*. Bandung: Alfabeta. 2017.
[4] Sugiyono*. Combination Research Method (Mixed methods).* Bandung: Alfabeta. 2014.