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The effect of using means ends analysis (MEA) model in learning geometry

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Abstract: The purpose of this study was to determine the effect of the Means Ends Analysis (MEA) Model on Mathematics Learning Outcomes in fifth-grade students at Tanjung 2 Magetan Elementary School and to determine students' responses to learning using the Means Ends Analysis (MEA) model. This type of research was experimental research using a quantitative approach. The results of the study showed that the Means Ends Analysis learning model can affect student learning outcomes. There were significant differences between the experimental class and the control class. Hypothesis test results obtained t-count (4.234) abel ≥ t-table (2.056). From posttest t-count data analysis tabel ≥ t table then H1 is accepted. The result to test the hypothesis in the study after being given the treatment stated this there are influence in learning outcomes Build Space between the Means Ends Analysis learning model with a conventional learning model class V SDN Tanjung 2 Magetan.

Keywords: Means Ends Analysis, Learning Outcomes, geometry

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INTRODUCTION

Mathematics is one of the compulsory subjects in Indonesia's school level. Mathematics is very useful to help students in their daily lives. The purpose of learning mathematics in elementary school is students are able to apply Mathematics material in their daily lives. The learning objectives of Mathematics are listed in the curriculum of school Mathematics subjects at all levels of education. One of the objectives is to improve students' ability in solving problems encountered in everyday life. The ability to solve story problems is not an easy material for elementary students to learn. This is cause of elementary school students' difficulty in understanding math questions in the form of stories. When students work on story problems, they have difficulty understanding the story given. Therefore, story questions must be taught using steps that are meaningful for students to be easily understood.

According to Budiono (2013) inappropriate of using learning models in teaching causes low of students' learning outcome. Besides, the drawbacks of students who are not interested in learning mathematics is students feel difficult in understanding and solving mathematical problems. The low mathematical problem solving in students will affect the quality of student learning which has an impact on the low student achievement in school. Therefore, it needs an improvement to overcome the above problems by changing the teaching teacher paradigm into the student learning paradigm. One effort that can be done is with applying innovative learning models and activating students in learning.

One of the improvements that can be done is to use the Model Means Ends Analysis (MEA) in the learning process and for the delivery of Mathematics material. The selection of the model is due to seeing the age of elementary school students who can work in a group.The Means Ends Analysis (MEA) model can be applied to Mathematics material because with the Means Ends Analysis (MEA) Model students can exchange opinions on the learning process and students will actively pay attention to what is discussed and observed and can analyze the material, so learning becomes more meaningful and students more easily understand the learning material will have an impact on Thematic learning outcomes that increase.

METHODS

This research is a quantitative study with true experimental method with a pretest-posttest design which divided into two groups pof subject. The first group is called the experimental class which is taught using the Means Ends Analysis learning model and the second group is called the control class which is taught by the conventional learning model. In determining the experimental-control class the researchers used a simple random sampling technique where each population had the same opportunity to be sampled and chosen randomly (Darmawan, 2013).The sample used in the experimental class was the VA class of 26 students. While the sample used in the control class is the VB class of 26 students.

RESULT AND DISCUSSION

The Means Ends Analysis (MEA) learning model is one of the learning models developed by Suherman's problem solving in (Supandi 2016). As a learning model, Means Ends Analysis (MEA) is a process or a way that can be done to solve a problem into two or more sub-objectives and then be worked in succession on each of these sub-objectives Fitriani in (Nurhadi 2017). Means Ends Analysis (MEA) is a process used in problem solving in which it tries to reduce the difference between the present statement and the goal. The steps to reduce the difference are carried out repeatedly until there is no longer a difference between the present statement and the goal.

The learning outcomes data of the pretest and posttest control class consists of 26 students taught using conventional learning models are as follows. Pretest results the lowest value = 35, the highest value = 65, average (mean) = 49.42, median = 50, mode = 45, standard deviation = 9.091. Whereas in the posttest results the lowest value = 50, the highest value = 80, average (mean) = 65.96, median = 65, mode = 65, standard deviation = 6.931. The learning outcomes data of the pretest and posttest of the experimental class consisted of 26 students who were taught using the Means Ends Analysis learning model as follows. Pretest results the lowest value = 35, the highest value = 65, average (mean) = 50.96, median = 50, mode = 45, standard deviation = 8.720. While in the posttest results the lowest value = 65, the highest value = 85, average (mean) = 73.46, median = 75, mode = 70, standard deviation = 5.791.

Posttest normality test in the experimental class and control class using Liliefors with the results of the experimental class posttest value of Lhitung (0.704)> Ltabel (0.173) then H1 is accepted. Posttest control class value of Lhitung (0.660)> Ltable (0.173) then H1 is accepted. So that the data obtained from the experimental class and the control class in the pretest and posttest came from populations that were normally distributed.

Pretest homogeneity test in the experimental class and the control class using the F test obtained Fcount (0.388) <Ftable (4.03) then H0 is accepted. While the posttest analysis in the experimental class and the control class using the F test was obtained F-count (17,928) <F-table (4.03) then H0 was accepted. Thus, the results of the pretest and posttest in the experimental class and the control class have a homogeneous population.

Hypothesis testing in this study uses a t test with homogeneity and a significance level of 5%. From posttest data analysis t-count ≥ t-table, H1 is accepted. To sum up, the hypothesis test decision in the study after being given treatment stated that "there is a difference in the Long Unit learning outcomes between the Means Ends Analysis.

CONCLUSION

Based on the results of research in data analysis and discussion, it is concluded that there is an effect of the Means Ends Analysis (MEA) model on the learning outcomes of Mathematics in the matter of Building Space for students in class V of SDN Tanjung 2 Magetan, proven by the results of hypothesis testing obtained by tcount (4.234) ≥ ttable (2.056). From posttest data analysis t-count ≥ t-table, H1 is accepted, so the hypothesis test decision in the study after being given treatment stated that there are differences in learning outcomes Build Space between the learning model of Means Ends Analysis with Conventional learning models class V SDN Tanjung 2 Magetan.

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