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IMPLEMENTATION OF THE PROBLEM-BASED LEARNING MODEL IN THE MATHEMATICS LEARNING MATERIAL OPERATIONS COUNTING WHOLE NUMBERS IN SIXTH-GRADE ELEMENTARY SCHOOL

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ABSTRACT

This study aimed to tell the implementation of Problem-Based Learning. This learning model was to the improvement of students learning outcomes by counting whole numbers in sixth-grade Elementary Schools in the Gajah Mada Cluster, Dempet District, Demak Regency. This study used the descriptive qualitative method with a place of research in sixth-grade Balerejo I Elementary School, in collecting data used observation, interview, and documentation. Data analysis used descriptive qualitative analysis. Based on the results of research conducted the implementation of PBL learning models to increase student learning outcomes in the material for counting whole numbers in sixth-grade Elementary School staged in its learning activities. In conclusion in the implementation, it was known that students were more creative and enthusiastic in the process of learning Mathematics, material operations, and counting numbers, and student learning outcomes increased quite high.

Keywords: Implementation, Problem-Based Learning, Sixth-Grade, Learning Outcomes

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INTRODUCTION

The challenges and development of education in Indonesia in the future are getting bigger and more complex. For this reason, teachers are required to be able to choose a learning model that can stimulate the enthusiasm of each student to be actively involved in their learning experience, for that, the learning process must be even better because learning can produce quality learning outcomes. So because of that, more active support from all aspects is needed. One of the efforts that can be taken is to improve the learning model that can improve students' abilities in the learning process. Like using, a learning model that makes students play a more active and creative role, so that students can gain the ability to learn to solve problems in learning Mathematics in Elementary Schools.

Mathematics learning is a teaching and learning process that is built by the teacher to develop students 'creative thinking which can improve students' thinking skills, and can increase new knowledge skills as an effort to increase mastery of mathematics material. According to Herman Hudojo (2013: 36), mathematics is concerned with structured ideas whose relationships are logically arranged. This means that mathematics is very abstract, that is, it deals with abstract concepts and deductive reasoning. Furthermore, according to Erman

Suherman, (2013: 16) mathematics is formed as a result of human thinking related to ideas, processes and reasoning. At the beginning mathematics was formed from human experience in the world empirically, because mathematics is a human activity then that experience is processed in the world of ratios, analyzed in analysis and synthesis with reasoning in the cognitive structure so that a conclusion comes in the form of mathematical concepts.

The problems that exist in learning in sixth grade Elementary Schools in the Gajah Mada Cluster, Dempet District, Demak Regency are in the learning model used by teachers who are less innovative and not enthusiastic, so they need a breakthrough by applying a learning model that evokes student learning so that the learning outcomes obtained are more good again in Mathematics. Another problem is the learning outcomes of Mathematics that are under learning completeness or under KKM in sixth grade of Elementary Schools in the Gajah Mada Cluster, Dempet District, Demak Regency.

Efforts are made to improve the appropriate learning process, so that students are in the ongoing teaching process, namely the Problem Based Learning model. The goal is that students can foster enthusiasm to be able to solve a problem in mathematics learning. Problem-based learning helps students to demonstrate and clarify the way of thinking and the cognitive processes involved in it. The learning environment that must be prepared in the Problem Based Learning model is an open environment, using a democratic process and emphasizing the active role of students. The whole process helps students to become independent who believe in their own intellectual skills. The learning environment emphasizes the central role of students, not the teacher. In the opinion of Eggen & Kauchak (2012: 307) that the Problem Based Learning model is a set of teaching models that use problems as a focus for developing problem-solving skills, materials and self-regulation. Furthermore, according to Supinah (2010: 17) argues that Problem Based Learning is a learning approach that begins with giving problems to students where the problem begins with giving problems to students where these problems are experienced or are students' daily experiences.

Based on the above problems, the PBL learning model is suitable for use in Mathematics learning for sixth grade Elementary Schools to improve student learning outcomes in the Counting Operations material. This is according to the results of research conducted by Yenni Fitria, (2017). Based on the results of the discussion and analysis, it is concluded that through the application of the problem-based learning (PBL) learning model it can improve students' Mathematics learning outcomes in solving problems involving money. The increase in teacher activity in the learning process is due to the fact that teachers are used to using the problem based learning (PBL) learning model. Student learning outcomes have increased from cycle I to cycle II. Student learning outcomes before the action that reached the KKM were only 13 students with a classical average of 48%. Then in cycle I only 19 students reached the KKM with a classical average of 70%. In Cycle II, students who reached KKM were 25 students with a classical average of 92%. Furthermore, research conducted by I Komang Brata, (2014) The results of the study showed that there were significant differences in learning outcomes between students who studied using the Problem Based Learning Model with an average score of 46 learning outcomes and conventional learning models with an average The average score of learning outcomes is 25. Based on the results of this study it can be concluded that the results of learning mathematics sixth grade SD No. 1 Belantih who is given learning using the problem based learning model is better than the mathematics learning outcomes of students who receive conventional learning.

This study aims to describe the implementation of the Problem Based Learning model to improving student learning outcomes in the material for counting whole numbers in sixth grade Elementary Schools in Gajah Mada Cluster, Dempet District, Demak Regency

METHODS

This research approach used a qualitative approach with the research site in sixth grade Balerejo I Elementary School in Gajah Mada Cluster, Dempet District, Demak Regency. Data collection techniques by observation, interviews and documentation. The instruments used were observation and interviews. The data analysis used descriptive qualitative analysis.

RESULT AND DISCUSSION

One of the planning carried out by researchers is that teachers must be able to design learning models that are beneficial to students. For this reason, teachers must be creative in designing learning models that invite students to participate, be active, creative with the material being taught so that students are able to solve problems with the mathematics material being taught. In this way it is expected that students can understand the material provided and achieve increased learning outcomes of learning mathematics.

The implementation of the Problem Based Learning model which was carried out in sixth grade of SD Balerejo I in the Gajah Mada Cluster, Dempet District, Demak Regency, before the implementation was carried out, the researcher made observations first to know the actual conditions in SD Balerejo I through observation, interviews and documentation. The importance of applying a problem-solving approach in learning mathematics makes students more critical and analytical in making decisions. In other words, the problem-based learning model in mathematics which is taught to students, the result is that students are able to have a good understanding of a problem, are able to communicate good ideas, are able to gather relevant information, analyze and re-examine the results obtained.

The obstacles faced in preparing the PBL learning model plan for Mathematics at SD Balerejo I are:

1. Many students have difficulty did math problems.
2. Students interest was low this was due to low Mathematics learning outcomes.
3. Students less confidence and shame because they were not used to speaking in front of the class.

The implementation of learning with the PBL model at SD Balerejo I by researchers are as follows:

1. Introduced students to a problem.
   This phase tells the researcher to gave a problem in the form of a problem in the sixth grade Mathematics package so that students are familiar with these questions for the objectives to be achieved in the learning process.
2. Directed students to learn.
   This phase the researcher divided into each group consisting of 5 students. Researchers provided problems so that students learn in accordance with the learning objectives to be achieved.
3. Guided individual or group learning.
   In this phase, the researcher encouraged or motivated students to did the assignment or question, then the researcher guided the students in turn whether there are math problems that were difficult or poorly understood by students.
4. Developed and presented learning outcomes.
   In this phase, the researcher helped students to present their learning results, then the researcher acted as a facilitator to bridge the results of children's assignments.

5. Analyzed and evaluated problem solving.
   In this phase, the researcher helped students evaluated / reflected on the questions that students work on in the Mathematics textbook, then the researcher made a summary for the ongoing activity.

Learning outcomes

Learning outcomes are said to be successful if the learning outcomes can shape student behavior, are useful for learning other aspects, can be used as a tool to obtain information and other knowledge, there is a willingness and ability to learn on their own and can be used to develop student creativity. According to the opinion of Dimyati and Mudjiono (2009: 200), it is state that learning outcomes are the level of success obtained by students after participating in a learning activity characterized by value. Learning is the result of the interaction between stimulus and response, the stimulus is what the teacher gives to students, while the reaction or response is in the form of student responses to the stimulus provided by the teacher. This is in accordance with the opinion of Zainal Arifin (2011: 76) states that learning outcomes are the result of an interaction of learning and teaching actions.

Related to this research, there are several previous studies, such as Research conducted by Setia Wardana, (2019) The results showed that the average posttest score of the experimental class was higher, namely in grade IIIA of 71.13, while the average posttest score of the control class was in grade IIIB of 65.09. Based on data analysis on the t test calculation, the value of t count = 2.680 and t table = 2.016. Because t count > t table, then H0 is rejected and Ha is accepted, it is concluded that the Problem Based Learning model is effective on student learning outcomes in mathematics problem solving material for grade III SD Negeri Kalicari 01. Another research was conducted by Fitria Rahayu, (2019). It was concluded that the increase in mathematics learning outcomes by 64% of students completed in cycle I and 92% of students completed in cycle II. Thus it has been proven that the Problem Based Learning model can improve learning outcomes in mathematics subjects. Furthermore, the results of research conducted by Yasa Bhoke, (2018) From the results of the study, it was found that the average mathematics learning outcomes, namely the average mathematics learning outcomes of the experimental group were greater than the average mathematics learning outcomes of the control group (0.53> 0, 37). The t-test results obtained t count (5.673) and t table (2.052) with degrees of freedom (db) = n1 + n2 -2 = 27 and a significance level of 5%, then t count > t table. This means that H0 is rejected and H1 is accepted so that the truth of the hypothesis proposed in this study can be accepted where there is a significant difference in mathematics learning outcomes between groups of students who take learning using a problem-based learning model with a group of students using conventional learning models. Thus it can be concluded that the problem based learning model has an effect on mathematics learning outcomes in elementary students.

KESIMPULAN

Based on the explanation of the results of the research and discussion, it can be concluded that the implementation of the Problem Based Learning model to the improvement of learning outcomes in Mathematics with counting whole numbers in sixth grade Elementary Schools in the Gajah Mada Cluster, Dempet District, Demak Regency using the syntax of the Problem Based Learning model can be drawn conclusions in its implementation that students were very happy and excited about followed the activities of teaching and learning Mathematics in the material of counting whole numbers operations and the learning outcomes of students had increased. Some of the obstacles experienced by researchers in learning the

PBL learning model for Mathematics at SD Balerejo I are that many students experience difficulties when solving a problem. Interest in learning Mathematics is very low because students feel bored with the learning model so that student learning outcomes are very low , Students still ashamed and lack self-confidence because they do not have the courage to speak in front of the class. Students still have difficulty conveying their learning outcomes with their groups.

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