

Increasing Activeness and Learning Outcomes with the Problem Based Learning Model for Class III Elementary Schools

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1. Abstract

This research is motivated by the lack of student activity in learning activities. Teachers have not provided student-centered learning, used the lecture method, and have not used interesting learning media. The purpose of this study was to increase the activity and learning outcomes of Mathematics for third grade elementary school students using the Problem Based Learning model. This type of research is classroom action research with the Kemmis and Taggart models whose stages consist of planning, implementing, observing, and reflecting. The subjects in this study were 25 class III elementary school students. Collection techniques using observation, interviews, and documentation. Data analysis techniques using descriptive quantitative and qualitative. The results of the study showed that students' active learning in cycle I was 77.60% and cycle II was 90.90%. While the learning outcomes of students in cycle I was 89.32%, cycle II was 91%. Thus, it can be concluded that learning with the Problem Based Learning model can increase the activity and learning outcomes of students in Mathematics.

Keywords: *learning outcomes, active learning, problem based learning*

2. Introduction

Education is a very important learning process for every individual. This learning process includes various aspects, such as knowledge, skills, and attitudes. Education also

has a very important role in the formation of one's character and personality. Therefore, education is one of the most important things in human life. Education can also be said as a conscious and planned effort to create an active learning atmosphere and learning process so that students can develop their potential. Learning can be done anywhere, learning not only at school but in the family and community environment. Learning is a process of changing behavior in the form of changes in the competency aspects of knowledge, attitudes, and skills. Creating students who have competence is important, but providing flexibility in developing students' talents and interests also needs attention.

Thematic learning is one of the learning methods that is currently popular in Indonesia. This method integrates several subjects in one particular theme or topic. The purpose of thematic learning is to increase students' interest and motivation in learning, as well as to strengthen the linkages between various subjects. Some experts provide an understanding of thematic learning, including according to T. Raka Joni in (Trianto, 2009: 81) which defines thematic learning as a learning system that allows students both individually and in groups to actively seek, explore and discover scientific concepts and principles. holistically, meaningfully and authentically. Thematic learning will occur if authentic events or exploration of themes become the controllers in learning activities. By participating in theme exploration, students will simultaneously learn about the process and content of several subjects simultaneously.

Mathematics is one of the subjects taught in schools in Indonesia. Mathematics has an important role in everyday life, especially in science and technology. However, it cannot be denied that many students experience difficulties in understanding mathematical concepts. Mathematics is one of the subjects contained in thematic learning. This

mathematics subject does not only focus on mathematics but is also integrated with other subjects such as Indonesian and SBdP. At this time learning activities, especially in mathematics subjects, are still less attractive to students because learning is still focused on the teacher and students only listen to lectures delivered without being intensely involved in learning activities.

Education is one important aspect in the development of a country. Quality education will produce quality human resources as well. Therefore, there is a need for innovation in the world of education to improve the quality of learning. One learning model that can be used as an alternative is the Problem Based Learning model. The Problem Based Learning learning model is a learning model that emphasizes problem solving as a learning center. In this model, students will be given problems to solve and students will learn through the process of solving these problems. This learning model is considered effective in improving students' critical thinking skills, creativity, and the ability to work together.

Based on the results of observations on April 11, 2023 in class III, with 25 students meeting. Students consisting of 12 boys and 13 girls indicated that in participating in learning activities these students were still not active. In mathematics learning activities students are less active because they still do not understand the material because the delivery of material is not accompanied by concrete media that students can practice directly, so that the results of learning mathematics obtained by students are still relatively low. This can be seen from the low interest of students in answering questions from the teacher regarding the material that has been presented. In the learning activities carried out by the teacher, the teacher still uses the lecture method and takes material available

in textbooks and worksheets. The method used by the teacher is of course still less varied so that it has not been able to increase students' interest in learning activities, especially mathematics. Based on these observations, teachers should be able to improve or change teaching methods to be more interactive in order to attract interest and increase students' focus on learning activities.

The Problem Based Learning learning model can be applied by teachers in learning activities as an effort to increase student activity. This Problem Based Learning learning model can require students to be active in the process of investigating the given problem in accordance with the material to be studied so that students will think more critically to be able to solve the given problem and be able to find their own information and build their knowledge.

Researchers apply the Problem Based Learning learning model by presenting material in the form of power points and concrete media that are made independently. Hamdani (2011) argues that good learning media will spark students to provide feedback, feedback, and encourage students to carry out correct practices. To be able to create fun and meaningful learning activities requires concrete media that directly involve students and can be practiced directly by students. Presentation of material through power point is also very important because it can make it easier to display interesting audio visuals so that it stimulates students to actively participate in learning which will impact on material that is easy to understand.

Based on these problems, the authors are interested in conducting classroom action research with the title: "Increasing activeness and learning outcomes with the Problem Based Learning model for class III Elementary Schools."

3. Methods

3.1. Participants and context

This study uses a qualitative method of Collaborative Classroom Action Research (PTKK). In this study, researchers used the Problem Based Learning model. The subjects of this study were class III elementary school students with a total of 25 students consisting of 12 boys and 13 girls. This collaborative classroom action research was carried out in two cycles. The implementation of each cycle follows the stages of planning, action, observation and reflection.

3.2. Material

Research instruments are tools or facilities used by researchers in collecting data to make it easier. The instruments in this study were observation sheets, documentation, and tests. The observation sheet serves to assess student activity during the learning process. Documentation for documentation studies is in the form of photographs and videos which provide a concrete description of the learning process by applying the Problem Based Learning model. While the test is used to determine student learning outcomes.

3.3. Data Collection and analysis

Data collection techniques are the most strategic steps in research, because the main purpose of research is to obtain data. The data collection technique taken is observation technique, used to collect data about activities during learning activities, as well as observing student activity, which is then used to use tests given to students, this is used to collect data about student learning outcomes.

3.4. Ethical Considerations

All research or research involves humans as research subjects. Therefore, in this study there are basic principles of research ethics, including: first is respect for people, in this case we must respect and value students, where these students are research subjects, second is benefits, in this research there are benefits, namely for students add a pleasant learning experience with the Problem Based Learning model which can increase activity and learning outcomes, and thirdly it does not endanger the research subject, in this study, it does not endanger the research subject because during teaching and learning activities it is carried out in the classroom, not outside the classroom.

3.5. Limitations to the Study

There are limitations that are owned by researchers related to time, effort, and cost. This research focuses on applying the Problem Based Learning model to increase student activity and learning outcomes.

4. Results and Discussion

Collaborative Classroom Action Research (PTKK) consists of pre-action, cycle I and cycle II. The following is data on the activity and results of students' Mathematics learning starting from the initial conditions (pre-action), cycle I and cycle II of class III students using the Problem Based Learning learning model.

Table 1. Increasing Student Activity in Pre-Cycle, Cycle 1 and Cycle II

	Pre-Cycle	Cycle 1	Cycle II
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Average	61,22	77,60	90,90
Category	Enough	Good	Very Good

Based on the table above regarding the increase in student activity during the pre-cycle, cycle I, and cycle II, the average activity has increased. During the pre-cycle (before being subjected to action) the average activity was only 61.22 or was in the sufficient category, after the first cycle was carried out the average student activity increased to 77.60 or was in the good category but the results obtained in cycle I not in accordance with the achievement indicators that have been set because they are still experiencing several obstacles, namely there are still students who do not pay attention to the teacher in explaining the material, lack of student communication in group discussion assignments given by the teacher, and there are still many students who seem hesitant in answering questions and asking questions . So to increase the activeness of student learning in order to achieve success criteria, improvements were made in cycle II. In cycle II, the average student activity was 90.90 or in the very good category.

Table 2. Comparison of Active Learning Cycles I and II

No	Indicator	Amount Score Cycle I	Amount Score Cycle II	Cycle I Results	Cycle II results
1	Do task	76	85	84,39	96.68
2	Submit question	47	70	52.35	80.54

3	Do discussion	70	80	78,67	89,92
4	Try seek and solve problem	70	79	80.54	90.78
5	presenting results	81	85	92.04	96,60
Average activity participant educate				77,60	90,90

Based on the table above, it is known that the first aspect that pays attention to doing the task. In the implementation of the first cycle of students who did the task 84.39% had reached the predetermined criteria. At the cycle II meeting, that is 96.68%. So that the increase occurred from the first cycle and the second cycle of 12.29%. The second aspect is asking questions. In cycle I, students who dared to ask questions reached 52.35% and did not reach the predetermined criteria. In the implementation of cycle II, ie 80.54% have reached the predetermined criteria. So that the increase occurred from the first cycle and the second cycle of 28.19%. The third aspect is conducting discussions. In cycle I students can discuss 78.67% have met predetermined criteria. In the implementation of cycle II, ie 89.92% had reached the predetermined criteria. So that the increase occurred from the first cycle and the second cycle of 11.25%. The fourth aspect is trying to find and solve problems. In cycle I students try to find and solve problems 80.54%. In the implementation of cycle II, namely 90.78%. So that the increase occurred from the first cycle and the second cycle of 10.24%. The fifth aspect is presenting the results. In cycle I students can present the results of 92.04%. In the implementation of cycle II, namely 96.60%.

Based on the data on the activeness of students in cycles I and II in the table, the average percentage of activity obtained by each indicator has reached the expected success criteria and there has been an increase of 13.3%. Learners can adapt to the Problem Based

Learning model. Student active learning can be seen when doing assignments, asking questions, conducting discussions, trying to find and solve problems, and presenting results.

Data acquisition or comparison of learning outcomes in cycle I and cycle II in the application of the Problem Based Learning model also increases in each cycle. The following comparison of learning outcomes cycle I and cycle II can be seen in the table.

Table 3. Comparison of Learning Outcomes Mathematics Pre cycle , Cycle I, and Cycle II

Change	Indicator	Pre cycle	Cycle I	Cycle II
Learning Outcomes	Student's Average Score	55,62	89.32	91
	Percentage Amount Student Reach KKM	27,37	90.67	94.72

Based on the table above, student learning outcomes obtained from each evaluation obtained an average that has increased. The increase can be seen from the initial conditions with an average of 55.62 and an increase of 33.7 with an average of 89.32 in cycle I. The average also increased from cycle I, namely from 89.32 to 91 in cycle II or an increase of 1.68. In addition to the class average, the percentage of KKM acquisition also increased. The percentage of completeness in the initial conditions, namely 27.37, increased to 90.67 in cycle I or increased by 63.3. The percentage of completeness in the second cycle is 94.72, which means that it has increased from the first cycle of 4.05.

The research data shows that there is an increase in student learning activity from the pre-cycle, cycle I to cycle II. This is because most students are able to meet the criteria

for indicators of active learning and complete assignments in earnest. In the aspect of student activity, observation assessment criteria are measured through five indicators, namely 1) doing assignments; 2) asking questions; 3) conduct discussions; 4) trying to find and solve problems; and 5) presenting the results. Based on the results of observations in the first cycle, the average percentage of students' active learning was 77.60%, indicating that students' activeness had started to improve or was in a good category, but not optimal because of the five indicators there was still one that had not been achieved.

The learning process carried out in cycle II went well and the enthusiastic students were enthusiastic in learning because there were efforts to improve the reflection results of cycle I. The average increase in student learning activeness obtained in cycle II was 90.90%. The average increase in learning activity in cycle I and cycle II increased by 13.3%. In this second cycle, each indicator in student learning activity has increased for each student, although there are some students who have not experienced changes after learning in cycle II. The activeness of student learning through the application of the Problem Based Learning model has reached the expected criteria, which is very good.

It is also known that after the first cycle of action was carried out, the average class III student learning outcomes was 89.32. These results experienced an increase of 33.7 points from the pre-action average to cycle I. In cycle II the Mathematics learning process included calculating the circumference of a flat shape using power point media, concrete media, and videos. After the second cycle was implemented, the average student learning outcomes in Mathematics learning was 91. This average increased 1.68 from the student learning outcomes in cycle I. This shows that applying the Problem Based Learning learning model can increase the activity and learning outcomes of class III students. Learning by

using Problem Based Learning can bring up collaborative interactions between students and students as well as students and teachers. This interaction can support the smooth running of the learning process where students show high enthusiasm during the learning process. The teacher only facilitates so that students actively carry out various activities in the learning process. This activity makes students more enthusiastic in paying attention to the teacher's explanation, raises students' courage to ask questions, respond to questions, discuss in groups, record summaries of subject matter, convey ideas or ideas, and present group work results.

5. Conclusion

Based on the results of action research that was carried out in class III elementary school, it can be concluded that the application of the Problem Based Learning learning model can increase activity in cycle I, the average percentage of students' learning activity is 77.60%. In cycle II, the average percentage of student activity was 90.90%. The average learning activity of students increased by 13.3% from cycle I to cycle II.

The application of the Problem Based Learning learning model can improve learning outcomes in cycle I, the average percentage of student learning outcomes is 89.32%. In cycle II, the average percentage of student learning outcomes is 91%. The average student learning outcomes increased 1.68% from cycle I to cycle II.

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