Application of the Problem-Based Learning Model *Problem Based Learning* to Improve Science Learning Results for Class III Students of UPT SDN 190 Barru

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Article Info	Abstract
	This study aims to improve the learning outcomes of Science and Social Studies (IPAS) among third-grade students at UPT SDN 190 Barru through the application of the Problem Based Learning (PBL) model. The research employed a Classroom Action Research (CAR) methodology, conducted in two cycles. Each cycle consisted of planning, implementation, observation, and reflection stages. Data were collected through observation and evaluation tests. The results showed significant improvement in students' learning outcomes. In the first cycle, only 25% of students achieved the minimum mastery criterion (KKM) of 70, with an average score of 65.75. However, after implementing improvements in the second cycle, the percentage of students achieving the KKM increased to 80%, with an average score of 79.5. These findings indicate that the PBL model effectively enhances student engagement and learning outcomes in IPAS. The study concludes that PBL is an innovative and effective teaching approach for improving academic performance and developing critical thinking skills among primary school students.

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1. INTRODUCTION

Education is one of the fundamental aspects of nation development which aims to create a quality generation. One of the important subjects at elementary school level is Natural and Social Sciences (IPAS). This subject combines the concepts of natural science with social science, which is designed to provide learning experiences that are contextual and relevant to students' daily lives (Mardhani, S. D. T., et al, 2022. There is a combination of natural science and social science subjects to form natural and social sciences (IPAS) at the elementary school level, this is because students view it in an integrated manner and students think simply. Therefore, through science subjects, it is hoped that students will be able to manage the natural and social environment as a whole This shows that some students find teachers fun in teaching science, so that students are enthusiastic about learning, but for some students, they take part in the science and science learning process without knowing its use in the field, so students feel confused about the learning process that has been carried out.

However, in reality, science learning is often considered monotonous and less interesting, resulting in low motivation and student learning outcomes. Learning models

have an important role in determining the effectiveness of the teaching and learning process.

Based on observations made in class III of UPT SDN 190 Barru, it was found that the majority of students had difficulty understanding the science material. This problem is exacerbated by the use of learning methods that are less interesting. Teachers tend to use a lecture approach and giving assignments without actively involving students in the learning process. As a result, students' interest in science learning decreases, and their learning results are below standard. Observations also show that students who are active in learning have better results than students who are passive.

The Problem Based Learning (PBL) model is one of the recommended approaches because it focuses on solving real problems that are relevant to students' lives. The problem-based learning (PBL) model is an approach that involves students solving real problems through a process of investigation and collaboration (Rahmayati, G. T., & Prastowo, A. 2023). In this learning, students are faced with relevant problems and are asked to find solutions through discussions, experiments and presentations. This method not only increases students' understanding of the material, but also develops critical thinking and collaboration skills (Arifin, S., et.al., 2024).

This method has been proven to increase student engagement and deeper understanding of the material (Paratiwi, T., & Ramadhan, Z. H. 2023). In the context of basic education, the application of this method is expected to be able to overcome problems that occur in science and science learning. This research is important to conduct to overcome the problem of low student learning outcomes in science subjects. By using the PBL model, it is hoped that learning will become more interesting and relevant, so that students can better understand the material and be motivated to learn. Apart from that, this research also contributes to the development of learning models that are in accordance with the Merdeka curriculum at the elementary school level.

Through this research, it is hoped that data can be obtained that supports the effectiveness of the PBL model in improving science and science learning outcomes for class III students at UPT SDN 190 Barru. It is also hoped that this research will become a reference for teachers in implementing more innovative and effective learning methods.

2. RESEARCH METHOD

This research uses the Classroom Action Research (CAR) method which aims to improve student learning outcomes through the application of the Problem Based Learning (PBL) model in class III science and science subjects at UPT SDN 190 Barru. This research was conducted in two cycles, each consisting of four stages: planning, implementation, observation, and reflection. Each cycle involves three learning meetings and one meeting to evaluate learning outcomes. This approach allows researchers to continuously identify problems, implement actions, and evaluate and improve learning strategies based on the results of reflection.

The planning stage includes preparing learning modules based on the Merdeka curriculum which contains material about the development cycle of living things, making observation instruments, and preparing evaluation questions. At the implementation stage, teachers use learning modules to deliver material using the PBL method which motivates students to solve real problems. Student and teacher activities during learning are observed using observation sheets, while student learning outcomes are assessed through the final test of each cycle to determine competency achievement.

The reflection stage is carried out to analyze data from observations and evaluations from each cycle. This data is used to identify the successes and shortcomings of actions that have been taken, as well as designing improvements in the next cycle. The success of this research is measured by the increase in the average student score that reaches the Minimum Completeness Criteria (KKM) of 70, as well as the increase in student involvement during the learning process. Data analysis was carried out descriptively, including student activities, teacher effectiveness, and learning outcome scores to ensure that PBL-based learning had a positive impact on the quality of science and science learning.

3. RESEARCH RESULTS AND DISCUSSION

The results and analysis of research data were based on data obtained from the results of classroom action research activities in class III UPTD SD Negeri 190 Barru which showed an increase in student learning outcomes in mathematics subjects. This Classroom Action Research (PTK) was carried out in two cycles, namely cycle I and cycle II.

The results and discussion obtained from the two cycles of implementing this research can be described as follows:

1. Cycle I

The average score after applying the problem-based learning model in cycle I was 65.75 out of a maximum ideal score of 100. The scores resulting from student learning evaluations were grouped into 4 categories, so a frequency distribution of scores was obtained as presented in table following:

Table 1. Cycle I Learning Results

Score	Category	Frequency	Percentage
0-69	No Complete	15	75%
70-100	Complete	5	25%
Amount		20	100%

Based on the data above, it can be concluded that of the 20 students in class III UPTD SD Negeri 190 Barru, the students who completed the KKM score of 70 were 5 students or 25% and those who had not yet completed were 15 students or 75%. This is due to students' lack of attention by carrying out other activities during the learning process.

2. Cycle II

In cycle II the average score after applying the Problem based learning model in cycle II was 79.5. The scores resulting from student learning evaluations are grouped into 4 categories, so a frequency distribution of scores is obtained which is presented in the following table:

Table 2. Results Study IPAS Cycle II

Score	Category	Frequency	Percentage

0-69	Not Completed	4	20 %
70-100	Complete	16	80 %
Amount		20	100%

Based on the results of the second cycle test on table on So it can be concluded that of the 20 class III UPTD students at SD Negeri 190 Barru, the students who completed the KKM score of 70 were 16 students or 80% and those who had not yet completed were 4 students or 20%.

3. **Improvement of Class III Science Learning Results, Cycle I and Cycle II**

The increase in learning outcomes in Cycle I and Cycle II can be seen from the following graph:
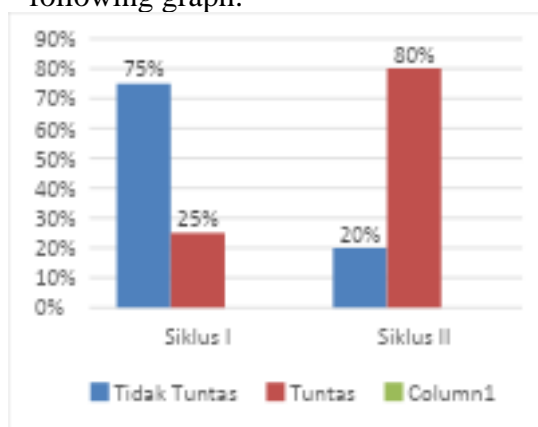

Figure 1. Graph of Improvement in Science Learning Outcomes

Based on the graph above, it can be seen that there is a significant increase in student learning completeness from cycle I to cycle II. In cycle I, only 25% of students completed, while in cycle II it increased to 80%. On the other hand, students who did not complete were reduced from 75% in cycle I to 20% in cycle II. This shows that the application of the Problem Based Learning (PBL) learning model in cycle II succeeded in improving student learning outcomes significantly. This increase can be an indicator that the learning methods applied are more effective and able to increase student involvement in the learning process.

4. **CONCLUSION**

Based on the research results, it can be concluded that the application of the Problem Based Learning (PBL) learning model is effective in improving student learning outcomes in class III science subjects at UPT SDN 190 Barru. The increase in learning outcomes can be seen from the average student score which increased from 65.75 in cycle I to 79.5 in cycle II, as well as the number of students who achieved Minimum Completeness Criteria (KKM) 70 increased from 25% in cycle I to 80% in cycle II.

The PBL learning model is able to increase student involvement in the learning process, develop critical thinking skills, and significantly increase understanding of the

material. Therefore, this model is recommended to be applied as an alternative learning strategy, especially in subjects that require problem solving and active student involvement.

As a suggestion, teachers need to use PBL methods or other active learning models more often to create a more interesting and challenging learning atmosphere. Further research is recommended to explore the application of the PBL model in other subjects or at different educational levels to expand its benefits.

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