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## Implementation of Problem Based Learning Model to Improve Student Learning Activities: Classroom Action Research at MIS Sumber Mas Ganding Sumenep

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**Abstract:** This study aims to enhance student learning activities through the implementation of the Problem-Based Learning (PBL) model and to explore its practical application in elementary school classrooms. The research was conducted as a Classroom Action Research (CAR) at MIS Sumber Mas Ganding, Sumenep, involving fifth-grade students and focusing on the sub-theme "Diversity of Living Things in My Environment." The study was carried out over two cycles, each consisting of two face-to-face learning sessions. The four stages of CAR planning, implementation, observation, and reflection were used systematically to monitor and evaluate the process and outcomes. Data collection methods included observation, interviews, and documentation, ensuring a comprehensive understanding of the students' learning activities and engagement. In the first cycle, the percentage of students actively participating in the learning process reached 61%, indicating the need for further improvement. After reflecting on the initial cycle and making necessary adjustments to the learning strategies, the second cycle was implemented. In this cycle, student learning activities increased significantly, reaching 81%, demonstrating a marked improvement in engagement and active participation. The findings suggest that the PBL model is effective in promoting student-centered learning, enhancing critical thinking skills, and encouraging active involvement in classroom activities. By presenting real-life problems and allowing students to collaborate in solving them, the PBL approach creates a more dynamic and meaningful learning experience. These results support the integration of PBL into elementary education as a strategy to improve both the quality of learning and student motivation.

**Keywords:** Problem-based learning, student engagement, elementary education, active learning.

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## INTRODUCTION

In the rapidly evolving landscape of education, fostering active student engagement has become a central focus for educators worldwide. Active learning strategies are recognized for their potential to enhance student participation, critical thinking, and overall academic achievement (Prince, 2004). Among these strategies, Problem-Based Learning (PBL) has emerged as a prominent pedagogical approach that encourages students to engage in problem-solving and collaborative learning activities (Hmelo-Silver, 2004).

PBL is grounded in constructivist theories, emphasizing the importance of learners constructing their own understanding through active engagement with real-world problems (Barrows, 1986). This approach has been associated with improved critical thinking skills, deeper understanding of subject matter, and increased motivation among students (Savery, 2006). In the context of elementary education, implementing PBL can be particularly beneficial, as it aligns with young learners' natural curiosity and propensity for exploration (Hung, 2011).

Recent studies have demonstrated the effectiveness of PBL in enhancing various aspects of student learning. For instance, Pridayanti and Alyani (2022) found that PBL significantly improved fifth-grade students' critical thinking abilities in science subjects. Similarly, Afriani (2021) reported that PBL effectively enhanced critical thinking skills among elementary students in science learning contexts. These findings underscore the potential of PBL to foster higher-order thinking skills in young learners.

Despite the growing body of evidence supporting PBL, its implementation in elementary schools, particularly in rural or under-resourced areas, remains limited. Factors such as lack of teacher training, insufficient resources, and rigid curricula can hinder the adoption of innovative teaching methods like PBL (Ertmer & Simons, 2006). In Indonesia, while educational reforms have emphasized student-centered learning, traditional teacher-centered approaches continue to dominate classroom practices (Suryani, 2019).

MIS Sumber Mas Ganding in Sumenep, a rural area in Indonesia, exemplifies the challenges faced by schools in implementing modern pedagogical approaches. Limited access to professional development opportunities and educational resources poses significant barriers to adopting PBL in such contexts. Consequently, students may miss out on the benefits associated with active learning strategies, potentially impacting their academic performance and engagement.

Addressing this gap requires targeted interventions that consider the unique challenges of rural educational settings. Classroom Action Research (CAR) offers a practical framework for educators to systematically investigate and improve their teaching practices within their specific contexts (Kemmis & McTaggart, 1988). By engaging in CAR, teachers can collaboratively identify issues, implement changes, and assess the outcomes to enhance student learning experiences.

This study aims to explore the implementation of the PBL model to improve student learning activities at MIS Sumber Mas Ganding. By employing CAR, the research seeks to adapt the PBL approach to the local context, addressing the specific needs and constraints of the school. The focus is on increasing student engagement and participation in learning activities, which are critical components of academic success.

The novelty of this research lies in its application of PBL within a rural Indonesian elementary school setting, an area that has received limited attention in existing literature. While previous studies have examined PBL in urban or well-resourced schools, there is a paucity of research on its effectiveness in rural contexts with constrained resources. This study contributes to filling this gap by providing empirical evidence on the feasibility and impact of PBL in such settings.

Furthermore, the research emphasizes the importance of contextualizing pedagogical approaches to align with the cultural and logistical realities of the educational environment. By tailoring the PBL model to fit the specific circumstances of MIS Sumber Mas Ganding, the study offers insights into how educators can adapt innovative teaching methods to diverse contexts. This adaptability is crucial for the successful implementation of educational reforms across varied settings.

The study also seeks to contribute to the professional development of teachers by involving them in the CAR process. Engaging teachers in reflective practice and collaborative problem-solving can enhance their instructional skills and foster a culture of continuous improvement (Zeichner, 2003). This participatory approach empowers

educators to take ownership of pedagogical innovations and sustain changes in their teaching practices.

In addition to improving student engagement, the research examines the impact of PBL on students' critical thinking and problem-solving abilities. Developing these skills is essential for students to navigate complex real-world challenges and succeed in the 21st-century workforce (Partnership for 21st Century Skills, 2009). By fostering these competencies at an early age, educators can lay the foundation for lifelong learning and adaptability.

The study employs a mixed-methods approach, combining quantitative and qualitative data to provide a comprehensive understanding of the PBL implementation process and its outcomes. Data collection methods include classroom observations, student interviews, and analysis of student work, allowing for triangulation and validation of findings. This methodological rigor enhances the credibility and applicability of the research results.

Ethical considerations are integral to the research design, ensuring that the rights and well-being of participants are protected. Informed consent is obtained from all participants, and confidentiality is maintained throughout the study. These ethical practices uphold the integrity of the research and respect for the school community.

The findings of this study have implications for educational policy and practice, particularly in promoting equitable access to quality education. By demonstrating the effectiveness of PBL in a rural school, the research supports the scalability of student-centered learning approaches across diverse educational settings. Policymakers and educators can draw on these insights to inform curriculum development and teacher training programs.

## **METHODS**

This study employed a Classroom Action Research (CAR) design to investigate the implementation of the Problem-Based Learning (PBL) model in enhancing student learning activities. CAR is a cyclical process of planning, action, observation, and reflection, which allows teachers and researchers to collaboratively improve instructional practices within a real classroom setting (Kemmis & McTaggart, 1988). The research was conducted at MIS Sumber Mas Ganding Sumenep, involving fifth-grade students during the 2024/2025 academic year.

The research was carried out in two cycles, each comprising four key stages: (1) Planning, (2) Action, (3) Observation, and (4) Reflection. Each cycle spanned two face-to-face learning sessions. In the planning stage, the researcher and classroom teacher collaboratively developed lesson plans based on the PBL model, designed instructional materials, and prepared assessment tools aligned with the learning objectives.

During the action stage, the researcher implemented the PBL approach by presenting students with real-life problems related to the sub-theme "Diversity of Living Things in My Environment." Students were divided into small groups and guided through the problem-solving process, which included identifying the problem, researching information, discussing possible solutions, and presenting their findings. The teacher acted as a facilitator, providing scaffolding and support as needed.

The observation stage involved systematic monitoring of student behavior and learning engagement using observation sheets. Data were collected on indicators such as participation in discussions, collaboration with peers, asking and answering questions, and involvement in completing group tasks. Field notes and photographs were also taken to support observational data.

In the reflection stage, the researcher and the teacher analyzed the results from the observation to evaluate the effectiveness of the learning activities and identify areas for improvement. This process informed the planning of the subsequent cycle.

Modifications were made to teaching strategies, group dynamics, and instructional materials to better support student learning.

Participants in the study consisted of 28 fifth-grade students (13 males and 15 females) and one classroom teacher. The selection was based on purposive sampling, considering the relevance of the topic and the willingness of the school to participate in the research.

Data collection techniques included observation, interviews, and documentation. Observations were conducted during the teaching and learning process to assess student engagement and interaction. Semi-structured interviews were held with students and the teacher after each cycle to gain insights into their experiences, perceptions, and suggestions. Documentation in the form of student worksheets, group reports, and photographs served as additional sources of evidence.

Data were analyzed using descriptive qualitative and quantitative approaches. Qualitative data from interviews and field notes were analyzed thematically to identify recurring patterns and themes related to student engagement and the implementation process. Quantitative data from observation checklists were used to calculate the percentage of student participation and activity levels across both cycles.

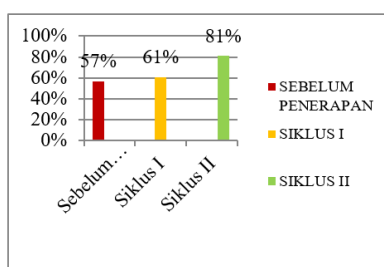
The criteria for success in this study were determined based on the percentage of students who actively participated in learning activities. A threshold of  $\geq 75\%$  active participation was set as the indicator of successful implementation. Improvements in student behavior, collaboration, and enthusiasm were also considered as qualitative indicators of success. All research activities were conducted in adherence to ethical standards. Informed consent was obtained from the school principal, classroom teacher, students, and parents. Participation was voluntary, and confidentiality of data was ensured. The study was approved by the ethics committee of the affiliated university.

## **RESULTS**

In the action of cycle I of the application of the Problem Based Instruction model for the subtheme of the Diversity of Living Things in My Environment, the results of the observations were used as material to determine the next action. Based on student activity data and analysis of learning activities, there were several activities, namely asking questions, submitting opinions, submitting problems, conveying the results of discussions/presentations. From several activities, it was obtained that student learning activities during the learning of the subtheme of the Diversity of Living Things in My Environment with the Problem Based Instruction model classically in cycle I were 61%. Based on the results of observations conducted by the class teacher in cycle II, there were several aspects that were implemented. The teacher and student observation sheets in cycle II increased and overall mastery of the material was good, class control was also good so that learning ran smoothly. Meanwhile, student activity in cycle II increased from the previous cycle. Students have dared to ask questions to the teacher, students are also enthusiastic about paying attention to the teacher's explanation even though there are still some who do not understand the material, but students dare to ask questions or give their ideas, students are active in group work, there is good interaction in group work activities, namely students help each other who have difficulty solving problems. In the action of cycle I, the application of the Problem Based Instruction model for the subtheme of the Diversity of Living Things in My Environment.

Based on student activity data and analysis of learning activities, there are several activities, namely asking questions, submitting opinions, submitting problems, conveying the results of discussions/presentations. From several activities, student learning activities were obtained during the learning of the subtheme of the Diversity of Living Things in My Environment with the Problem Based Instruction model classically in cycle I of 81%.

Increase in Student Activity Before Implementation, Cycle I and Cycle II are presented in Chart 1 below.



The table and figure above show an increase in student activity from before the implementation of 57% with the criteria of less active to 61% in cycle I with the criteria of quite active and increasing to 81% in cycle II which is classified as active criteria. Increased student and teacher activity in this study are presented in Chart 2 below.



In the observation of student activities, the results of the percentage of student activity in learning 1 in cycle I were obtained, namely 73% increasing in cycle II to 86%. In addition, on the teacher activity sheet, namely in cycle I in learning 1, the teacher's activities that were carried out got a percentage of 72%. In cycle II in learning 1, teacher activities increased with an acquisition of 83%. Likewise in learning 2, in cycle I, student activities that were carried out got a percentage of 64%. In cycle II, there was an increase in student activity in learning 2 with a percentage of 82%. For teacher activities in cycle I in learning 2, the percentage was 63%. This also increased in cycle II in learning III, namely with a percentage of 84%.

## DISCUSSION

The application of the Problem Based Instruction learning model in class IV MI Sumber Mas in thematic learning in the Subtheme of Diversity of Living Things in My Environment in the teacher activity observation activity obtained the results of the percentage of teacher activity in cycle I, namely PB1 72% and PB2 63% increasing in cycle II reaching PB1 83% and PB2 84%. In addition, on the student activity observation sheet, namely in cycle I, student activities that were carried out got a percentage of PB1 72% and PB2 64%. In cycle II, student activity increased with an acquisition of PB1 86% and PB 82%.

The implementation of the Problem-Based Learning (PBL) model in the fifth-grade classroom at MIS Sumber Mas Ganding Sumenep aimed to enhance student learning activities, particularly in the sub-theme "Diversity of Living Things in My Environment." The study observed a significant increase in student engagement, with active participation rising from 61% in the first cycle to 81% in the second cycle. This improvement underscores the effectiveness of PBL in fostering active learning environments.

The initial cycle's 61% participation rate indicated a moderate level of engagement, suggesting that students were beginning to adapt to the PBL approach. The subsequent increase to 81% in the second cycle demonstrates that, with continued exposure and refinement of the PBL implementation, students became more comfortable and involved in the learning process. This aligns with the findings of Nugraheni et al. (2023), who reported enhanced scientific literacy and character development through PBL in elementary settings.

The PBL model's emphasis on real-world problem-solving and student-centered learning likely contributed to the observed increase in engagement. By presenting students with authentic problems related to their environment, the learning experience became more relevant and meaningful, thereby motivating students to participate actively. This approach is supported by the work of Arina Fajarini et al. (2023), who found that PBL improved literacy skills by encouraging contextual and meaningful learning experiences.

Furthermore, the collaborative nature of PBL facilitated peer-to-peer learning, allowing students to share ideas, challenge each other's thinking, and develop a deeper understanding of the subject matter. This collaborative aspect is crucial in developing critical thinking and communication skills, as highlighted by Sutriyanti et al. (2025), who observed improvements in students' critical thinking abilities through PBL.

The study's findings also resonate with the research conducted by Sadrianti et al. (2023), which demonstrated that PBL could significantly enhance student learning outcomes in social studies by promoting active participation and engagement. The consistent improvements across various subjects suggest that PBL is a versatile pedagogical approach suitable for diverse educational contexts.

In the context of rural education, such as at MIS Sumber Mas Ganding Sumenep, the successful implementation of PBL is particularly noteworthy. Rural schools often face challenges such as limited resources and access to professional development. However, this study illustrates that, with appropriate planning and support, innovative teaching methods like PBL can be effectively adopted to enhance student learning experiences.

The study's methodology, involving two cycles of planning, action, observation, and reflection, allowed for continuous improvement of the PBL implementation. This iterative process enabled the identification and addressing of challenges encountered in the first cycle, leading to more effective strategies in the second cycle. Such reflective practices are essential for the successful integration of new teaching methodologies.

The increase in student engagement observed in this study is consistent with the findings of Yuliani et al. (2023), who reported that PBL improved learning outcomes in mathematics by encouraging active participation and problem-solving skills. These results suggest that PBL can be an effective approach across various subjects, promoting a more engaging and interactive learning environment.

Moreover, the study contributes to the growing body of literature supporting the use of PBL in elementary education. The positive outcomes observed reinforce the notion that PBL can be a powerful tool in developing essential 21st-century skills, such as critical thinking, collaboration, and self-directed learning. This is particularly important in preparing students to navigate complex real-world challenges.

The study also highlights the importance of teacher facilitation in the successful implementation of PBL. Teachers play a crucial role in guiding students through the problem-solving process, providing support, and fostering a learning environment that

encourages inquiry and exploration. Effective teacher facilitation ensures that students remain focused and engaged throughout the learning process.

Additionally, the study underscores the significance of aligning PBL activities with students' interests and real-life experiences. By connecting learning to students' everyday lives, educators can enhance the relevance and applicability of the content, thereby increasing student motivation and engagement. This approach is supported by the findings of Nugraheni et al. (2023), who emphasized the importance of contextual learning in promoting scientific literacy.

The study's findings also suggest that PBL can contribute to the development of students' social and emotional skills. Through collaborative problem-solving activities, students learn to communicate effectively, resolve conflicts, and work as part of a team. These experiences are invaluable in fostering a positive classroom climate and preparing students for future interpersonal interactions.

Furthermore, the study demonstrates that PBL can be adapted to suit various educational contexts, including those with limited resources. By utilizing locally available materials and focusing on community-related problems, educators can implement PBL without the need for extensive resources. This adaptability makes PBL a feasible and effective approach for schools in diverse settings.

The study also highlights the importance of ongoing professional development for teachers in implementing PBL. Providing educators with training and support enables them to develop the necessary skills and confidence to facilitate PBL effectively. This professional growth is essential for sustaining innovative teaching practices and improving student learning outcomes.

Moreover, the study's findings align with the broader educational goals of promoting student-centered learning and developing lifelong learners. By engaging students in meaningful, real-world problem-solving activities, PBL fosters a sense of ownership over learning and encourages the development of self-directed learning habits. These attributes are critical for success in an ever-changing global landscape.

The study also contributes to the discourse on educational equity by demonstrating that innovative pedagogical approaches like PBL can be effectively implemented in under-resourced schools. This challenges the notion that such methodologies are only suitable for well-resourced educational environments and highlights the potential for

## **CONCLUSION**

The application of the Problem Based Instruction learning model in class IV MI Sumber Mas in thematic learning in the Subtheme of Diversity of Living Things in My Environment in the teacher activity observation activity obtained the results of the percentage of teacher activity in cycle I, namely PB1 72% and PB2 63% increasing in cycle II reaching PB1 83% and PB2 84%. In addition, on the student activity observation sheet, namely in cycle I, student activities that were carried out got a percentage of PB1 72% and PB2 64%. In cycle II, student activity increased with an acquisition of PB1 86% and PB 82%. The findings of this classroom action research demonstrate that the implementation of the Problem-Based Learning (PBL) model significantly enhances student learning activities, as evidenced by the increase in active participation from 61% in the first cycle to 81% in the second cycle. Through structured problem-solving processes, contextual learning, and collaborative group work, students became more engaged, motivated, and involved in the learning process. This study not only affirms the effectiveness of PBL in fostering active



learning environments in elementary education but also highlights its adaptability and relevance in rural and under-resourced school contexts. The research underscores the importance of teacher facilitation, continuous reflection, and curriculum alignment in the successful application of PBL, suggesting that with proper support and planning, this model can serve as a transformative pedagogical approach that cultivates 21st-century competencies in young learners.

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