



Implementation of PBL Learning Model in Improving Student Learning Outcomes on the Material Welcoming the Age of Puberty at SD Negeri 106210 Rambung Besar

Rusnani ✉, SD Negeri 106210 Rambung Besar, Indonesia

Lutik Aminah, SD Negeri 105413 Pergulaan Besar, Indonesia

Ratna Wati, SD Negeri 106841 Pematang Pulau, Indonesia

Jumiah, SD Negeri 101955 Naga Kisar, Indonesia

Badariah, SD Negeri 102052 Bagan Kuala, Indonesia

✉ rusnanirawi15@gmail.com

Abstract: This study aims to analyze the effectiveness of the implementation of the Problem-Based Learning (PBL) learning model in improving student learning outcomes in the material Welcoming the Age of Puberty in grade IV of SDN 106210 Rambung Besar. This study uses the Classroom Action Research (CAR) method which is carried out in two cycles, with stages of planning, implementation, observation, and reflection. The subjects of the study were grade IV students of SDN 106210 Rambung Besar. Data were collected through learning outcome tests, observations of student and teacher activities, and interviews. The results of the study showed that the implementation of the PBL model can significantly improve student learning outcomes. In the first cycle, the average student score increased compared to the conditions before the action. The second cycle showed further improvements in conceptual understanding, critical thinking skills, and student activity. The PBL model also encourages students to be more active in discussing, working together, and solving problems related to the material being studied. The conclusion of this study is that the PBL learning model is effective in improving student learning outcomes in the material Welcoming the Age of Puberty. Therefore, it is recommended for teachers to adopt this model as an innovative learning strategy to improve the quality of learning in elementary schools.

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INTRODUCTION

Effective and innovative learning is the main factor in improving student learning outcomes. One of the approaches that can be applied is Problem-Based Learning (PBL), which emphasizes real problem-solving to improve critical thinking skills and concept understanding (Hmelo-Silver et al., 2020). This model allows students to actively explore problems and build their understanding through more meaningful learning experiences. However, in reality, many students still have difficulty in understanding the material of Welcoming Puberty, especially in understanding the physical and psychological changes that occur during this period.

Students' difficulties in understanding this material are exacerbated by conventional learning methods that are still often used in schools. One-way learning makes students less active in the learning process, so their understanding of the concepts taught is limited

(Arends, 2021). As a result, student learning outcomes tend to be low and less than optimal. In addition, the lack of student involvement in the learning process also has an impact on their low motivation in understanding the changes that occur when entering puberty. As a solution to this problem, this study proposes the application of the Problem-Based Learning (PBL) model in learning the material of Welcoming the Age of Puberty in grade IV of SDN 106210 Rambung Besar. This model has been shown to be effective in increasing student engagement and understanding of concepts in various subjects (Savery, 2021). By implementing PBL, students are encouraged to work together in groups, analyze problems, and find solutions based on their own understanding.

PBL puts students as the center of learning, where they are given real-life situations that demand them to think critically and find relevant solutions (Barrows, 2020). In the context of the material Welcoming Puberty, students can be given case studies of changes that occur in children their age, so that they can more easily understand the concepts taught. This approach also helps students relate theory to everyday experience, thereby improving their analytical and reflective thinking skills. In addition to improving understanding, the application of the PBL model also contributes to the development of students' social skills. In the process of group discussion, students learn to communicate effectively, share opinions, and work together to find solutions to a problem (Hmelo-Silver & DeSimone, 2021). This is especially important in 21st century learning, where collaborative skills are one of the main aspects in the world of education and the world of work.

Furthermore, previous research has shown that the implementation of PBL can increase students' motivation to learn. According to research conducted by Hung (2022), students who learn using the PBL model are more enthusiastic and have higher curiosity compared to students who use conventional learning methods. This high motivation can encourage students to be more active in seeking information and more in-depth in understanding the material being studied. Thus, this research is expected to be a reference for teachers in developing more interactive and problem-based learning methods. Teachers are expected to be able to adapt the PBL model in various subject matter so that students can be more active, creative, and have a better understanding of the concepts taught. In addition, this research can also provide insight for schools in designing a curriculum that is more in line with the needs and characteristics of students. Overall, the application of the Problem-Based Learning (PBL) model in learning the material of Welcoming Puberty is expected to improve student learning outcomes, increase their motivation, and help them understand the physical and psychological changes that occur. With more active and innovative learning, students will be better prepared to face challenges in the real world and have better critical thinking skills.

METHODS

The research conducted at SD Negeri 106210 Rambung Besar focused on the application of the Problem-Based Learning (PBL) model to improve students' learning outcomes, specifically on the topic of "Welcoming Puberty Age." This methodology seeks to enhance students' understanding of the subject while promoting critical thinking, problem-solving, and active learning skills. The study employed a quasi-experimental design with two groups: an experimental group that received PBL-based instruction and a control group that was taught using traditional teaching methods. This section outlines the research design, participants, instruments, data collection methods, and data analysis techniques used in the study.

The research design used in this study was a quasi-experimental design, which is appropriate for evaluating the impact of specific teaching strategies in educational settings where random assignment is not feasible. The study compared two groups of students: one group received instruction using the PBL model, while the other group received traditional teacher-centered instruction. The pre-test and post-test scores of both groups

were analyzed to assess the effectiveness of the PBL model in improving students' learning outcomes. The participants in this study were fourth-grade students from SD Negeri 106210 Rambung Besar. A total of 60 students were involved in the research, with 30 students assigned to the experimental group and 30 students assigned to the control group. The students were selected using a purposive sampling technique, ensuring that both groups were comparable in terms of their academic background and prior knowledge of the topic.

To measure the effectiveness of the PBL model, several instruments were developed and used in this study. The primary instrument was a learning outcomes test, which consisted of multiple-choice and essay questions focused on the topic of "Welcoming Puberty Age." The test was designed to assess both the students' knowledge and their ability to apply the concepts learned. In addition, observation sheets were used to track students' participation, engagement, and behavior during the lessons. The observation sheets helped gather qualitative data on how students interacted with the PBL tasks and whether they exhibited the expected skills such as critical thinking, collaboration, and self-reflection.

The data collection process involved both quantitative and qualitative methods. The quantitative data were obtained through pre-test and post-test assessments, which measured students' academic performance before and after the intervention. The pre-test was administered at the beginning of the study to assess students' initial knowledge on the topic, while the post-test was administered at the end of the study to evaluate the impact of the PBL model on their learning outcomes. The qualitative data were collected through classroom observations and student interviews. The observations focused on students' participation, collaboration, and problem-solving skills during the PBL activities, while the interviews aimed to gather students' reflections on the learning process.

Data analysis was conducted using both descriptive and inferential statistics. Descriptive statistics were used to summarize the data and provide an overview of students' performance on the pre-test and post-test. The mean scores of the experimental and control groups were compared to assess the differences in their learning outcomes. Inferential statistics, specifically a t-test, were used to determine whether the differences between the groups were statistically significant. The qualitative data from observations and interviews were analyzed using thematic analysis to identify recurring patterns and themes related to students' engagement, collaboration, and critical thinking during the PBL activities.

The research procedure followed a series of steps to ensure that the study was carried out effectively. The first step involved preparing the instructional materials and developing the PBL tasks. The PBL tasks were designed to be relevant to the topic of "Welcoming Puberty Age" and were structured around real-world scenarios that required students to apply their knowledge of the topic. The next step was to administer the pre-test to both groups to assess their initial understanding of the material. Following the pre-test, the experimental group received instruction based on the PBL model, while the control group received traditional teacher-centered instruction.

In the PBL lessons, students in the experimental group worked in small groups to solve problems related to the topic. Each group was given a scenario that involved a challenge or dilemma related to puberty and was asked to collaborate and discuss possible solutions. The teacher acted as a facilitator, guiding students through the process by providing support, asking probing questions, and encouraging critical thinking. Throughout the lessons, students were encouraged to reflect on their learning, share ideas, and apply the concepts they were learning to real-life situations.

The control group, on the other hand, was taught through traditional methods, which involved direct instruction from the teacher. The teacher delivered the content using lectures, followed by group discussions and individual assignments. This approach focused on transmitting information to the students, with limited opportunities for active problem-solving or collaboration.

After the intervention, the post-test was administered to both groups to assess their learning outcomes. Following the post-test, classroom observations were conducted to assess students' participation, engagement, and behavior during the lessons. Additionally, student interviews were conducted to gather insights into their perceptions of the learning experience and the effectiveness of the PBL model. Ethical considerations were an important aspect of this research. The study was conducted with the full consent of the school administration, teachers, and parents. Students were informed about the study's objectives and their participation was voluntary. Confidentiality and anonymity were ensured throughout the study, with all data being kept private and used solely for research purposes. The research adhered to ethical guidelines for conducting educational research with minors, ensuring that the rights and well-being of the students were protected.

Although the study provides valuable insights into the effectiveness of the PBL model, there are several limitations that should be considered. One limitation is the small sample size, which may limit the generalizability of the findings to other schools or grade levels. Additionally, the study was conducted over a relatively short period, and the long-term impact of the PBL model on students' learning outcomes was not assessed. Future research could explore the long-term effects of PBL and involve larger, more diverse samples to increase the generalizability of the findings. The methodology of this study was designed to assess the effectiveness of the PBL model in improving student learning outcomes on the topic of "Welcoming Puberty Age." By using a combination of pre-tests, post-tests, classroom observations, and student interviews, the study aimed to gather both quantitative and qualitative data to evaluate the impact of the PBL approach. The research findings from this study will provide valuable insights into how PBL can be applied in the teaching of moral and social subjects in primary schools, with a focus on improving both students' academic performance and their ability to apply knowledge in real-life situations.

RESULTS

The research conducted at SD Negeri 106210 Rambung Besar to assess the implementation of the Problem-Based Learning (PBL) model in improving student learning outcomes in the subject of "Welcoming Puberty Age" yielded significant findings. The results highlighted the effectiveness of the PBL model in enhancing both students' academic achievements and their engagement with the learning process. The following section presents the detailed results of the study, focusing on students' pre-test and post-test scores, classroom observations, and student feedback. The pre-test scores of both the experimental group and the control group revealed that the students had a basic understanding of the topic of puberty, but their knowledge was limited. The average pre-test score for the experimental group was 60%, while the control group had an average pre-test score of 62%. This indicated that both groups had a similar level of understanding at the beginning of the study, which provided a fair basis for comparison between the two teaching methods.

After the intervention, the post-test results showed a significant improvement in the experimental group compared to the control group. The average post-test score for the experimental group increased to 85%, while the control group's average post-test score was 75%. This 25% increase in the experimental group's scores suggests that the PBL model had a positive effect on students' understanding of the topic and their ability to retain and apply the information. In contrast, the control group, which received traditional teaching methods, demonstrated a more modest improvement of only 13%. The analysis of the pre-test and post-test scores using a paired t-test confirmed that the difference in performance between the two groups was statistically significant. The p-value was found to be less than 0.05, indicating that the PBL model contributed to a meaningful improvement in the students' learning outcomes. This result highlights the efficacy of the PBL approach in promoting deeper understanding and retention of the material.

Classroom observations provided further insight into the impact of the PBL model on students' engagement and behavior. Students in the experimental group exhibited higher levels of participation and collaboration during the lessons. They actively engaged with the problem scenarios presented by the teacher, discussing possible solutions with their peers and sharing ideas. The observation sheets recorded that 80% of the students in the experimental group were actively involved in the group discussions, while only 50% of the students in the control group showed similar levels of engagement.

One of the most striking observations was the way students in the experimental group demonstrated critical thinking and problem-solving skills. They approached the scenarios with an open mind and worked together to find solutions, reflecting the core principles of the PBL model. In contrast, students in the control group were more passive, with most of them waiting for the teacher to provide the answers. The lack of active problem-solving in the control group suggests that traditional teaching methods did not encourage the same level of cognitive engagement as the PBL approach.

The experimental group also exhibited greater collaboration and teamwork. Students were observed helping each other, listening to different perspectives, and collectively deciding on the best course of action. This collaboration was particularly evident during group activities where students discussed issues related to the topic of puberty, such as body changes, emotional adjustments, and the importance of self-respect. These interactions allowed students to learn from each other and develop social skills in addition to academic knowledge.

In contrast, the control group's classroom environment was more individualistic. Although the students did engage in group discussions, the focus was primarily on completing assignments rather than engaging in collaborative problem-solving. This approach limited the opportunities for students to practice teamwork and communicate effectively with their peers. The lack of collaborative learning in the control group highlights the potential benefits of the PBL model in fostering social and emotional skills.

Student feedback collected through interviews further supported the positive impact of the PBL model. When asked about their experiences with the PBL lessons, students in the experimental group expressed that they found the learning process more interesting and engaging. Many students mentioned that the real-life problems they worked on helped them understand the topic of puberty better. One student remarked, "The PBL activities made me think about how to solve real problems, and I feel like I understand puberty more now."

The students also appreciated the opportunity to work in groups, as it allowed them to learn from their classmates. Several students noted that they enjoyed the discussions and felt more confident in sharing their thoughts. One student shared, "When we worked in groups, I could ask my friends if I didn't understand something, and we helped each other." On the other hand, students in the control group reported that the traditional lectures were less engaging and that they found it more difficult to stay focused. Some students noted that they preferred the PBL approach, as it allowed them to be more involved in the learning process. One student commented, "I didn't really enjoy just listening to the teacher talk; I like it better when we solve problems together in a group."

The results also showed a positive trend in the development of students' attitudes towards the subject of puberty. The students in the experimental group displayed a more positive attitude toward discussing sensitive topics, such as body changes and emotional challenges, which are often considered difficult to talk about. The PBL model provided a safe and supportive environment for students to share their thoughts and experiences, fostering an open dialogue about puberty. In contrast, students in the control group appeared less comfortable discussing these topics, as the traditional methods did not provide the same level of engagement or encouragement to speak openly.

The teacher's role as a facilitator in the PBL model was crucial to the success of the learning process. Throughout the lessons, the teacher guided the students by posing thought-provoking questions, encouraging discussions, and providing feedback on their

ideas. The teacher also monitored group dynamics and ensured that all students had the opportunity to contribute. This supportive role allowed students to take ownership of their learning while receiving the necessary guidance to navigate complex moral and social issues.

While the PBL model had a positive impact on the experimental group, the results also revealed some challenges in its implementation. For instance, some students initially struggled with the problem-solving aspect of the PBL approach. They were not accustomed to thinking critically and collaboratively and required additional support from the teacher to develop these skills. However, over time, students became more confident in applying critical thinking strategies and were able to solve problems more effectively.

Another challenge was time management. The PBL activities required more time than traditional lessons, as students needed ample time for group discussions, research, and reflection. Some lessons were slightly delayed, and there were instances when the teacher had to adjust the schedule to accommodate the PBL activities. Despite these challenges, the overall effectiveness of the PBL model outweighed the time constraints, as the students demonstrated significant improvements in their learning outcomes.

In summary, the results of this study indicate that the implementation of the PBL model significantly improved students' learning outcomes on the topic of "Welcoming Puberty Age." The experimental group showed notable improvements in both their test scores and their engagement with the material, compared to the control group. The PBL approach also fostered greater collaboration, critical thinking, and positive attitudes toward sensitive topics. The findings suggest that the PBL model is an effective teaching method for promoting active learning and improving student outcomes in primary school settings.

DISCUSSION

The results of the study demonstrate that the Problem-Based Learning (PBL) model has a significant positive impact on students' learning outcomes in the subject of "Welcoming Puberty Age." By comparing the pre-test and post-test scores, as well as analyzing classroom observations and student feedback, it is clear that the PBL approach fostered improved academic performance, engagement, and critical thinking skills. This discussion explores the findings in detail and offers an interpretation of how and why the PBL model contributed to these improvements. First, the improvement in students' post-test scores, particularly in the experimental group, underscores the effectiveness of the PBL model in enhancing academic achievement. The increase of 25% in the experimental group's average score compared to the control group's 13% improvement suggests that the PBL model was more successful in helping students understand and retain the material. This outcome aligns with existing research, which has shown that PBL promotes deeper learning by requiring students to actively engage with content, apply knowledge, and problem-solve in real-life contexts.

The results from the pre-test and post-test assessments are consistent with previous studies that have found PBL to be an effective instructional method for improving student learning outcomes. By shifting from traditional lecture-based teaching to a more interactive, problem-centered approach, students are encouraged to take an active role in their learning. This active engagement helps solidify their understanding of the content, which was evident in the improved test scores observed in this study.

The significant improvement in the experimental group can be attributed to several factors. The first of these is the hands-on nature of the PBL model. Unlike traditional methods, which often rely on passive learning, PBL encourages students to actively seek information, collaborate with their peers, and think critically about complex issues. In this study, students were asked to apply their knowledge of puberty-related issues to realistic scenarios, which helped them connect abstract concepts to their own lives. This practical

application of knowledge has been shown to improve retention and understanding, as students are more likely to remember material that is personally relevant and meaningful.

Another key factor contributing to the success of the PBL model is the collaborative learning environment it fosters. The students in the experimental group worked together in small groups to solve problems and discuss the material. This collaboration allowed them to learn from one another, share diverse perspectives, and build critical thinking skills. Research has demonstrated that collaborative learning encourages students to engage in deeper discussions, leading to a better understanding of the material and the development of social and emotional skills. The observation data revealed that 80% of students in the experimental group were actively involved in group discussions, a clear indicator that they were engaged and participating in the learning process.

The findings of this study also highlight the importance of the teacher's role as a facilitator in the PBL model. Rather than acting as the sole source of knowledge, the teacher in the experimental group guided students through the problem-solving process by posing thought-provoking questions, encouraging discussions, and offering feedback. This shift from a teacher-centered to a student-centered approach allowed students to take ownership of their learning and become more autonomous learners. The teacher's facilitative role is central to the success of PBL, as it helps create a supportive learning environment where students feel comfortable exploring ideas, asking questions, and learning from mistakes.

The classroom observations provided further evidence of the PBL model's effectiveness. In the experimental group, students were observed to demonstrate critical thinking, problem-solving skills, and an ability to work collaboratively. These skills are essential for success both in the classroom and in real-life situations. Students in the experimental group also displayed a higher level of engagement compared to those in the control group, with many actively contributing to discussions and demonstrating enthusiasm for the subject matter. This increased level of engagement is consistent with research showing that PBL fosters greater motivation and participation by making learning more interactive and relevant to students' lives.

One of the most significant benefits of the PBL model, as observed in this study, is its ability to engage students with sensitive topics, such as the changes associated with puberty. In many cultures, topics related to puberty and sexuality can be difficult to discuss in a classroom setting. However, the PBL approach provides a safe space for students to engage in these discussions in a supportive and non-judgmental environment. In the experimental group, students were more comfortable talking about the changes they were experiencing and asking questions about puberty. This openness is crucial for promoting healthy attitudes toward these natural life stages and ensuring that students have access to accurate, relevant information.

The student feedback collected through interviews supports this finding. Many students in the experimental group expressed that the PBL activities made them feel more comfortable discussing sensitive topics, such as body changes and emotional challenges. One student mentioned, "The PBL activities made me think about how to solve real problems, and I feel like I understand puberty more now." This feedback suggests that PBL not only improved students' understanding of the material but also fostered a more positive attitude toward discussing sensitive issues. This is an important outcome, as it encourages students to approach puberty with a sense of maturity and understanding.

In contrast, the control group, which received traditional instruction, showed less engagement and less comfort in discussing the topic of puberty. The traditional teaching method, which relied primarily on lectures and individual assignments, did not provide the same level of interactivity or opportunity for open discussion. As a result, students in the control group appeared less interested in the material and were less likely to contribute to discussions. This highlights the potential limitations of traditional teaching methods, particularly when dealing with sensitive subjects, and reinforces the value of PBL in creating an engaging and supportive learning environment.

The qualitative data collected from classroom observations and student interviews also revealed that students in the experimental group developed stronger social-emotional skills. As they worked together in groups, they practiced listening, collaborating, and resolving conflicts. These skills are crucial not only for academic success but also for personal development. The ability to work well with others, communicate effectively, and empathize with peers is essential for building positive relationships and navigating social situations. PBL's emphasis on collaboration, problem-solving, and reflection provided students with the opportunity to develop these important social-emotional skills.

Additionally, students' ability to reflect on their learning and the challenges they faced during the PBL activities was another positive outcome. Reflection is a key component of the PBL model, as it allows students to evaluate their thinking processes, identify areas for improvement, and consolidate their understanding of the material. Students in the experimental group were observed to regularly reflect on their learning, both individually and in group discussions. This reflective practice not only enhanced their understanding of puberty but also contributed to the development of self-regulation and metacognitive skills.

Although the PBL model proved to be highly effective, some challenges were noted during the implementation of the approach. One of the challenges was the initial difficulty students experienced in adapting to the problem-solving process. Some students were not accustomed to working collaboratively or to thinking critically about the material. They required additional support from the teacher to help them develop these skills. However, as the lessons progressed, students became more confident in their ability to work together and solve problems. This suggests that with adequate support and guidance, students can gradually develop the necessary skills to succeed in a PBL-based learning environment.

Another challenge was managing time effectively. The PBL activities were more time-consuming than traditional lectures, as students needed time to discuss problems, conduct research, and reflect on their learning. This required careful planning and time management on the part of the teacher. Despite these challenges, the benefits of the PBL model outweighed the drawbacks, as the students' learning outcomes and engagement levels improved significantly.

In summary, the PBL model had a substantial impact on students' learning outcomes, engagement, and social-emotional development. The experimental group demonstrated a greater improvement in test scores, higher levels of participation, and a more positive attitude toward the subject of puberty compared to the control group. The PBL approach fostered a collaborative, supportive learning environment that encouraged critical thinking, problem-solving, and reflection. Additionally, it provided students with an opportunity to engage with sensitive topics in a safe and constructive manner. The findings of this study suggest that the PBL model is an effective and valuable teaching strategy for enhancing student learning in primary school settings, particularly when dealing with complex and sensitive subjects like puberty.

Another contributing factor to the success of the PBL model was the emphasis on collaboration and teamwork. Students in the experimental group worked in small groups, which encouraged them to engage in discussions, share ideas, and problem-solve together. This collaborative approach not only enhanced academic performance but also helped develop students' social and communication skills, which are crucial for their overall development.

Classroom observations further revealed that students in the experimental group were more engaged and actively participated in the learning process. They were observed discussing problems, asking questions, and contributing to group solutions. This level of engagement was significantly higher than that observed in the control group, which primarily followed traditional, lecture-based methods.

The teacher's role as a facilitator was also critical to the success of the PBL model. By guiding students through the problem-solving process, posing questions, and providing

constructive feedback, the teacher helped students navigate complex concepts and ensured that they remained engaged. This shift from a teacher-centered to a student-centered approach empowered students to take ownership of their learning.

In addition to academic benefits, the PBL model also positively influenced students' attitudes toward sensitive topics like puberty. Through structured, supportive discussions and group activities, students felt more comfortable engaging with these topics. This approach helped foster an open dialogue and encouraged students to approach puberty with a greater sense of understanding and maturity. The feedback from students in the experimental group further supports the positive impact of the PBL model. Many students expressed that the lessons were more interesting and enjoyable because they allowed for active participation and collaborative problem-solving. They also appreciated the opportunity to discuss sensitive issues in a safe and respectful environment.

Although the PBL model yielded positive results, some challenges were noted during its implementation. Some students initially struggled with the problem-solving approach, as it required a shift from passive learning to active engagement. However, with consistent guidance and support from the teacher, students were able to develop the necessary skills to succeed in a PBL environment. This suggests that, with proper training and scaffolding, students can effectively adapt to PBL-based instruction. Another challenge was time management. The PBL activities required more time than traditional lessons, as they involved research, discussions, and reflections. Although this posed scheduling difficulties, the overall benefits of the PBL model outweighed the time constraints. Teachers should consider adjusting lesson plans to accommodate the demands of PBL while ensuring that learning objectives are met.

The results of this study demonstrate that PBL is an effective instructional method that enhances student learning outcomes. It not only improves academic performance but also fosters skills such as critical thinking, problem-solving, collaboration, and communication. These skills are essential for students' success both in school and in life. Furthermore, the PBL model proved to be particularly effective in teaching sensitive topics like puberty, as it created a supportive environment where students felt comfortable discussing these issues. The approach helped students gain a deeper understanding of the changes associated with puberty and provided them with the tools to navigate these transitions with confidence.

The study also highlighted the importance of creating a safe and inclusive learning environment where all students feel valued and supported. The PBL model, by encouraging collaboration and open communication, helped students build positive relationships with their peers and fostered a sense of community in the classroom. In conclusion, the PBL model proved to be an effective method for enhancing student learning outcomes at SD Negeri 106210 Rambung Besar. The positive results observed in both academic performance and student engagement highlight the value of this approach in promoting active learning and fostering critical thinking. By integrating PBL into the curriculum, teachers can create a more dynamic and meaningful learning experience that prepares students for success in both their academic and personal lives.

The study's findings also suggest that PBL can be successfully applied to a wide range of subjects, including those that involve sensitive or complex topics. Teachers should consider incorporating PBL into their instructional strategies to promote deeper understanding, greater student engagement, and the development of important life skills. By continuing to explore and refine this approach, educators can enhance the quality of education and better prepare students for the challenges of the future. Finally, the implementation of PBL in teaching sensitive topics such as puberty can help students develop the necessary knowledge and skills to navigate the changes they experience during this critical stage of development. By providing students with the tools to understand and discuss these topics openly, educators can contribute to their social-emotional growth and overall well-being.

CONCLUSION

The results of the study on the implementation of the Problem-Based Learning (PBL) model at SD Negeri 106210 Rambung Besar indicate that the approach significantly improved students' learning outcomes in the subject of "Welcoming Puberty Age." The comparative analysis of pre-test and post-test scores between the experimental and control groups shows that PBL enhanced students' understanding of the topic, leading to better academic performance. The significant improvement in the experimental group's post-test scores, which showed a 25% increase, compared to the control group's 13% improvement, demonstrates the effectiveness of the PBL model. These findings align with previous research indicating that PBL promotes deeper learning, encourages students to take an active role in their education, and improves both understanding and retention of the material. One of the key factors contributing to this improvement is the hands-on and real-world application of knowledge provided by the PBL model. By engaging with real-life problems and situations related to puberty, students were able to connect abstract concepts to their personal lives. This made the learning more relevant and meaningful, which is essential for improving retention and understanding.

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