

Analysis Application of Problem Based Learning Model to Improve Students' Critical Thinking Skills in Pancasila Education Subjects

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Abstract. Critical thinking skills are one of the ten main skills that students need to prepare and strengthen to face and achieve success in the future. Critical thinking skills are needed so that citizens can make wise and appropriate decisions that benefit themselves and their environment. The purpose of this study is to find out student learning activities and improve students' critical thinking skills by applying the problem based learning model. The type of research chosen is class action research (PTK) which consists of 2 cycles. Each cycle includes four stages, namely: planning, acting, observing, and reflecting. The results of the study show that there is an increase in each cycle that has been adjusted to the critical thinking indicators. Thus, the application of problem-based learning in general can improve students' critical thinking skills in the Pancasila Education course in classroom action research.

Keywords: Problem Based Learning; Critical Thinking; Civic Education.

1. INTRODUCTION

Education plays a crucial role in shaping the character and intellectual abilities of the younger generation. In Indonesia, Pancasila education, which is mandatory from primary to secondary school levels, aims to develop citizens with strong character and a deep understanding of the nation's core values. This subject not only teaches the history and foundational concepts of the state but also instills profound moral, ethical, and civic values in students (Tadege et al., 2022; Dwivedi et al., 2024). This is highly important, as Pancasila serves as the state ideology and the foundation for the nation's and state's way of life. According to Sarmurzin, (2024), Pancasila learning can also serve as a means to enhance social awareness and foster an appreciation for public policy, both of which are essential for national life. However, despite the crucial role of Pancasila Education in schools, a major challenge remains: students often lack the critical thinking skills needed to interpret and apply Pancasila values in real-life situations (Rachman et al., 2024).

The issue in Pancasila Education learning in Indonesia lies in the dominance of conventional and predominantly monological teaching methods, where students merely receive information without being given the opportunity to actively engage in critical thinking processes (Shi et al., 2021). In conventional

learning models, students are largely encouraged to read and memorize concepts, rather than being invited to think critically and analyze various issues related to Pancasila values, such as tolerance, democracy, and social justice. This approach hinders the development of students' critical thinking skills, which are urgently needed in today's era of globalization to enable them to make informed and wise decisions in social, political, and economic contexts (Roziq Widhayaka et al., 2023).

The solution to this issue lies in the implementation of more interactive and problem-solving-oriented learning models, such as the Problem-Based Learning (PBL) model. PBL offers students the opportunity to actively engage in analyzing real-life problems and crafting solutions through deep and reflective thinking processes (Aure, 2025). As stated by Squalli Houssaini et al., (2024), PBL not only enables students to acquire knowledge but also fosters the development of higher-order thinking skills that are essential for navigating life's challenges. Moreover, PBL enhances student engagement by providing space for discussion, collaboration, and the critical presentation of ideas (Maor et al., 2023).

However, despite the proven effectiveness of the PBL model in enhancing critical thinking skills across various subjects, its implementation in Pancasila Education remains very limited. Numerous studies have demonstrated the success of PBL in subjects such as science, mathematics, and language, yet its application within the context of Pancasila Education where the focus is on civic values and national character is still relatively rare (Reichert & Torney-Purta, 2019). This highlights a significant gap in the literature regarding the use of PBL to foster critical thinking in civic education, particularly in the teaching of Pancasila Education (Santos-Meneses & Drugova, 2023).

The novelty of this research lies in the implementation of the Problem-Based Learning (PBL) model within Pancasila Education at the secondary school level, with the goal of enhancing students' critical thinking skills in relation to Pancasila values. This study seeks to investigate how PBL can serve as an innovative approach to address the issue of low critical thinking skills among students in Pancasila Education. Furthermore, the research also aims to examine the impact of PBL on increasing student engagement in the learning process, as well as its influence on students' understanding and application of Pancasila values within social contexts and everyday life (Andrew et al., 2019).

The primary objective of this study is to examine the extent to which the application of the Problem-Based Learning (PBL) model can enhance students' critical thinking skills in the Pancasila Education subject. Additionally, this research aims to explore students' learning activities during the implementation of the PBL model and contribute to the development of more innovative instructional approaches in civic education in Indonesia. Therefore, this study is expected to offer new insights into improving the quality of Pancasila Education shifting it beyond rote memorization towards fostering critical thinking and promoting

active citizenship attitudes.

2. METHOD

This study employed a Classroom Action Research (CAR) design to implement the Problem-Based Learning (PBL) model with the aim of enhancing students' critical thinking skills in Pancasila Education. The CAR approach was selected because it effectively captures the changes that occur directly within the teaching and learning process, while also offering opportunities for ongoing reflection and continuous improvement throughout the research implementation (Sanati et al., 2024). The research followed the Kemmis and McTaggart model, which consists of four main stages: planning, action, observation, and reflection. The study was carried out over two cycles, each focusing on instructional activities and the development of students' critical thinking skills.

2.1 Place and Time of Research

This research was conducted at Public Junior High School 2 Banda Aceh, specifically in class IX 6, which consisted of 30 students. The study took place during the even semester of the 2024/2025 academic year and was carried out over two cycles. Each cycle consisted of four meetings and was implemented over the course of one month. This time frame was designed to allow for adequate application of the Problem-Based Learning (PBL) model and to observe the changes in students' critical thinking skills throughout the process.

2.2 Research Approach and Type

The approach used in this research is a qualitative approach combined with a Classroom Action Research (CAR) design. CAR was selected because it allows for the direct identification and resolution of learning problems through iterative cycles of improvement (Xu et al., 2013). This study aims to observe and evaluate the impact of implementing the Problem Based Learning (PBL) model on enhancing students' critical thinking skills. The data collected includes both qualitative and quantitative types, obtained through observations, interviews, and student learning outcomes tests.

2.3 Data Source

The data sources in this study were the students of class IX-6 at Public Junior High School 2 Banda Aceh, totaling 30 participants. Additional data were collected through observations of classroom activities conducted by the researchers during the learning process. Furthermore, interviews were carried out with the Pancasila Education teacher involved in the implementation of the study, as well as with several randomly selected students to gather feedback on their experiences using the PBL model. The instruments used to assess students' critical thinking skills included essay tests and infographic assignments, both of which were designed based on predetermined critical thinking indicators.

2.4 Data Collection Technique

Data collection techniques in this study include observation, interviews, and tests. Observation data was obtained by observing student interactions in the classroom during the Pancasila learning process using the PBL model. This observation aims to see the extent to which students are actively involved in the learning process, especially in terms of critical thinking and proposing solutions to the problems given. Interviews were conducted with teachers and some students to explore their experiences related to the application of the PBL model and its impact on critical thinking skills. While quantitative data is obtained from test results which include essay questions and infographics which are analyzed to measure the level of students' critical thinking skills.

2.5 Research Procedure

The research procedure was carried out in two cycles. Each cycle began with a planning phase, which involved selecting topics and issues relevant to Pancasila values. This was followed by the implementation phase, where learning was conducted using the Problem-Based Learning (PBL) model. In this phase, students were divided into small groups and tasked with solving problems presented by the teacher. Each group was required to develop solutions and present their outcomes in the form of an essay or infographic.

During the observation phase, the researchers monitored student interactions and gathered data through classroom observations and interviews. At the end of the first cycle, a reflection phase was conducted to evaluate the strengths and weaknesses of the learning process. The findings from this reflection were then used to refine and improve the implementation in the second cycle.

2.6 Data Validity Technique

Data validity in this study was ensured using method triangulation and source triangulation. Method triangulation involved combining multiple data collection techniques namely observations, interviews, and tests to gain a comprehensive understanding of the research findings. Source triangulation was conducted by comparing data obtained from various sources, such as students, teachers, and test results, to ensure that the findings accurately represented the actual phenomenon.

Additionally, to enhance the credibility of the research, the researcher conducted a thorough examination of the collected data and sought feedback from peers and other participants involved in the study. This process helped to validate interpretations and strengthen the reliability of the research outcomes.

2.7 Data Analysis Technique

The data obtained from observations, interviews, and tests were analyzed using both qualitative and quantitative approaches. Qualitative data from interviews and observations were analyzed through thematic analysis, in which

the researcher identified recurring themes related to the enhancement of students' critical thinking skills and changes in their learning behaviors. Meanwhile, quantitative data derived from test results were analyzed using descriptive statistics to measure the improvement in students' critical thinking skills across each cycle.

3. RESULTS

This study was conducted in two cycles to evaluate the effectiveness of the Problem-Based Learning (PBL) model in enhancing students' critical thinking skills in the Pancasila Education subject. During the first cycle, the teacher introduced the topic of global solidarity and guided students to solve a real-world problem related to Indonesia's role in addressing global issues. Students were tasked with writing an essay on the role of Indonesian youth in promoting global solidarity. While some students began to show improvement in organizing their ideas, others still required support in expressing their thoughts critically and structuring their arguments effectively.

In the next stage, students were guided through group research activities, where they collected and analyzed relevant data to support their essays. This process helped them to connect theoretical knowledge with real-world issues, demonstrating the early development of analytical thinking. During the presentation of their essays, several students were able to clearly articulate their ideas, though some still needed to improve their communication and argumentation skills. The final stage involved evaluating students' understanding of the problem and their proposed solutions. Results showed that most students developed a deeper understanding of global solidarity and were able to apply their knowledge more effectively.

In the second cycle, there was a significant improvement in student engagement and critical thinking skills. During the problem orientation stage, students showed greater enthusiasm and readiness to participate in discussions and collaborative problem-solving activities. The task was more focused, requiring students to write essays and design infographics on the theme "Together with the World, Realize Change." They demonstrated improved ability to organize ideas systematically, integrate supporting data, and critically analyze the topic.

During the group research and infographic creation stages, students were more creative in presenting their arguments, incorporating data, images, and design elements to make their presentations more impactful. Their final presentations showed enhanced communication skills and a stronger grasp of the material. Evaluation results indicated that most students achieved a deeper understanding of the subject matter, and their critical thinking improved significantly. In terms of measurable outcomes, the average score in the first cycle was 72.88 with 60% classical completeness, while in the second cycle it increased to 85.55 with 90% classical completeness. These results reflect a notable

enhancement in students' critical thinking abilities through the application of the PBL model.

4. DISCUSSION

According to Supriadi et al., (2024), the development of formal reasoning plays a crucial role in mastering learning concepts. Conceptual understanding is seen as the result of a constructivist process, while thinking skills serve as the tools to achieve it. Therefore, it becomes clear that both learning strategies and thinking skills are essential components of the learning process. The demand for such thinking skills continues to grow in line with the advancement of science and technology. Fostering critical thinking in learners has become a central objective of education systems around the world. However, the research community still encounters significant challenges in realizing this important goal. One major issue is the theoretical gap particularly the lack of robust theories that explain how learning experiences contribute to the development of critical thinking (Jørgensen et al., 2024; Yue Yim, 2024).

It is interesting to see research conducted by Le & Chong, (2024), the development of critical thinking skills has a positive side and is believed to be an important element in the world of education, by prioritizing learning strategies or approaches that can encourage students to think critically. In addition, (Song et al., 2024; Kaynar & Kurnaz, 2024), provide standards in critical thinking, referring to the criteria or guidelines applied to assess or evaluate critical thinking skills. These standards include aspects such as the ability to analyze information, identify assumptions, evaluate arguments, and make decisions based on critical thinking. In line with this, according to Fernandes et al., (2024), there are several characteristics of critical thinking including: (1) looking for clear meaning of each statement; (2) looking for supporting reasons; (3) trying to get a deep understanding of information; (4) using valid reference sources; (5) observing the overall context; (6) trying to stay relevant to the main idea; (7) remembering basic goals and initial interests; (8) having alternatives or other options; (9) being open and flexible; (10) acting when having evidence; (11) exploring as many explanations as possible; (12) structured from the whole problem; and (13) respecting and appreciating the expertise and knowledge of others.

Learning activities in class XI 6 have generally followed a conventional approach. To enhance students' critical thinking skills, problem-based learning (PBL) presents itself as an appropriate and effective instructional model. Grounded in the constructivist approach, PBL provides a framework for learners to construct new knowledge through active engagement and real-world problem-solving.

Problem-based learning was originally developed in the 1960s by educators at McMaster University as an innovative approach to medical education. It emerged in response to the limitations of traditional teaching methods and aimed

to introduce a learner-centered, multidisciplinary education model that also fostered lifelong professional learning (Thorndahl & Stentoft, 2020). By the 1980s and 1990s, the use of PBL had expanded to other higher education institutions across (Abbas Shah et al., 2024). PBL supports the development of students' critical thinking by engaging them with complex problems presented by educators. In this study, the implementation of the PBL model followed several structured stages: identifying students' initial understanding of the problem, organizing students for learning, guiding group-based investigations, facilitating the development and presentation of students' work, and analyzing and evaluating the problem-solving process (Chuang & Chang, 2024).

This research was carried out in two cycles to evaluate the implementation of the Problem-Based Learning (PBL) model in enhancing students' critical thinking skills in the Pancasila Education subject. In the first cycle, the initial stage began with problem orientation, where the teacher introduced the learning objectives to the students specifically, to help them understand the importance of global solidarity and Indonesia's role in addressing global issues. The teacher also encouraged students to actively engage in solving a selected real-world problem, with the goal of cultivating a sense of awareness and comprehension of both social and global concerns.

In the second stage, students were organized to begin the learning process by being guided in planning the assigned task. The task involved writing an essay on the role of Indonesian youth in promoting global solidarity. Students were provided with HVS sheets to serve as a medium for writing their essays. During this stage, students began to demonstrate greater active participation in formulating and organizing their ideas. However, it was observed that some students still required assistance in critically expressing their thoughts and structuring their arguments effectively.

The third stage involved providing guidance during the group research process. The teacher encouraged students to gather information relevant to the problem at hand and document their findings on the HVS sheets provided. Students were tasked with writing an essay that explained the issue they were addressing and proposed solutions grounded in their understanding of global solidarity. At this point, students began to demonstrate improved analytical skills, with several groups successfully connecting the concepts they had learned to real-world global issues. This indicated early progress in their ability to think critically and apply their knowledge in meaningful contexts.

The fourth stage focused on the development and presentation of student work. In this phase, students were tasked with preparing an essay on the theme "The Role of Indonesian Youth in Global Solidarity". The teacher provided guidance and support throughout the planning and writing process to help students structure their essays more effectively. During the presentation session, students shared their work in front of the class, demonstrating notable progress.

Many were able to clearly explain the content of their essays and convey their ideas coherently. However, it was also observed that some students still needed further improvement, particularly in terms of delivery and the strength of their arguments.

In the fifth stage, the problem-solving process was analyzed and evaluated. The teacher asked students to present their essays in front of the class and assessed their level of understanding regarding the fundamental concepts of Indonesia's role in global solidarity. This evaluation focused on how effectively students were able to connect theoretical knowledge with practical applications, as well as their ability to propose creative and realistic solutions to the issues discussed. The results of the evaluation indicated that most students had developed a stronger understanding of the significance of global solidarity. Many were able to articulate thoughtful responses and demonstrate a clear grasp of the topic. However, a few students still faced challenges in formulating in-depth and well-structured solutions, suggesting the need for continued guidance and reinforcement in future learning cycles.

This research was conducted in 2 cycles because by applying a problem-based learning model during Pancasila Education learning on the material "Indonesia's global solidarity in global issues" student activity became active because during the learning process it involved a lot of student activeness and there had been an increase in critical thinking skills seen from students who were able to write essays using their own language, and the scores obtained were completed in accordance with the desired expectations. For student activity can be seen in the picture below:

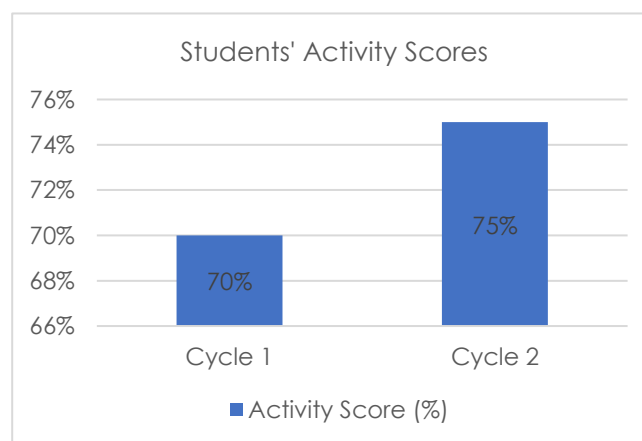


Figure 1. Students' Activity Scores

The explanation of the diagram above shows the results of research that achieved success with very good value criteria. For the increase in learner activity during the first cycle learning activities, students made essays, obtained a percentage of 60% of the "sufficient" criteria, followed by the second cycle which increased with a score of 75 "good" criteria. This certainly shows that the data is

data on students' activities during learning that has increased and changed for the better.

In the second cycle, the implementation of the Problem-Based Learning (PBL) model demonstrated notable improvement compared to the first cycle. During the initial stage "problem orientation" the teacher provided a more in-depth explanation of the learning objectives, emphasizing the importance of "global solidarity" and Indonesia's role in addressing global challenges. The problem presented in this cycle was aligned with the theme "Together with the World, Realize Change." At this stage, the teacher also encouraged students to actively engage in identifying and solving the given problem. As a result, students showed greater readiness and enthusiasm to participate in discussions and collaborative problem-solving activities. This improvement was evident through the increased level of student participation and interaction when compared to the first cycle, indicating a positive shift in both engagement and critical thinking development.

In the second stage, the teacher provides more structured guidance in planning the tasks given to students. Students were asked to create an essay focusing on analyzing the role of Indonesian youth in global solidarity issues. Here, students begin to organize their ideas more systematically and can connect the material taught with real issues that exist. They are also encouraged to dig deeper into various relevant references to enrich their essays. As a result, many students show progress in organizing their thoughts and can construct arguments more clearly and critically.

The third stage, mentoring in group research, also showed progress. At this stage, students were asked to collect data that would be used in making infographics. The teacher provided further guidance on how to design effective infographics, emphasizing creativity in combining data, images, and relevant content. Students were more creative in constructing their infographics, using interesting data and images to support their arguments on global solidarity. The assessment of their creativity reflected a significant improvement in the quality of their work compared to the first cycle.

In the fourth stage, students were given the opportunity to compile and present their infographics with the theme "Together with the World, Make Change Happen". Here, they demonstrated the ability to design work that was not only informative but also aesthetically pleasing, taking into account relevant design elements. The presentation of the infographic in front of the class went smoothly, and students were able to explain the concepts they created with more confidence. This presentation showed improvement in students' communication skills and their ability to convey ideas in a clearer and more structured manner.

In the fifth stage, the teacher conducted an analysis and evaluation of the students' work. Students were asked to present their infographics in front of the class, and the teacher assessed their level of understanding regarding the core

concepts of Indonesia's global solidarity in relation to global issues. The evaluation results indicated that the majority of students had achieved a deeper comprehension of the material. Most received good ratings, particularly in terms of their ability to analyze issues and align the content of their infographics with the topics discussed. Furthermore, the assessment of student presentations revealed significant progress in their critical thinking skills, as demonstrated by their ability to examine problems thoroughly and propose relevant, well-thought-out solutions. This improvement reflects the effectiveness of the PBL model in fostering analytical thinking and conceptual understanding.

Overall, the research results in the second cycle showed a significant increase in students' critical thinking skills. The implementation of PBL model in the second cycle successfully encouraged students to be more active, creative, and critical in learning Pancasila Education. In addition, students' involvement in group discussions and presentations of their work showed that PBL can be an effective approach in improving their understanding of the material as well as critical thinking skills in the context of global issues.

The results of students' critical thinking tests have increased from the infographics that have been made by students referring to critical thinking indicators, averages, and classical completeness. As for the research data in the first and second cycles, there was a satisfactory increase in learning because the increase was very significant. It is proven by the average value that continues to increase. For more details, it can be seen in Figure 2.

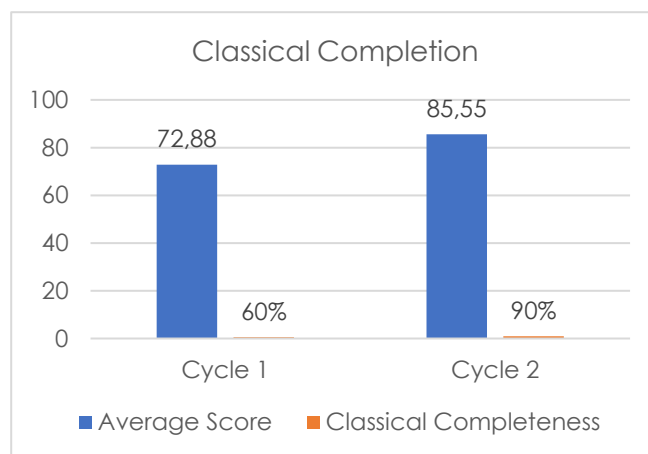


Figure 2. Classical Completion

Based on the diagram above, it can be seen that in the first cycle the average score of students' thinking ability test was 72.88 with 60% classical completeness, and in the second cycle the average score of students' thinking ability test was 85.55 with 90% classical completeness. Students' critical thinking skills in learning Pancasila Education showed a very good improvement in each cycle. These results are in line with research conducted by (Raslan & Forawi, 2024; Qu et al., 2024), that the results of students' critical thinking tests have increased

from each question that refers to critical thinking indicators. This happens because researchers always make improvements and redesign learning from deficiencies in each cycle with the application of problem-based learning models.

From the description above, it can be seen that the application of problem-based learning can help develop students' critical thinking skills in Pancasila Education subjects. The material used in this model is Indonesia's global solidarity in the global world. Problems related to Pancasila as a value system are presented in the form of modules and PowerPoint, students are asked to determine the problem, understand the problem, solve the problem by providing the right solution, and draw conclusions. Then, the results of the discussion are presented in the form of essays and infographics presented in front of the class. In line with the definition of problem-based learning according to Konstantinidis, (2024), which is learning that focuses on carefully selected and designed problems, so that in its application it can build a conducive classroom atmosphere that makes students actively participate in discussions, and express opinions to each other. The results of research conducted by (Purwanto et al., 2024; Wang & Wang, 2024), show that students' critical thinking skills can be improved by applying a problem-based learning model, which focuses on problems as the basic material in learning. So that it can encourage students to actively participate in problem solving by working together. Furthermore, in (Affandy et al., 2024; Lee & Son, 2024), it was explained that a significant comparison of the effect on students' critical thinking skills by applying a problem-based learning model when compared to students who used a conventional model during learning.

5. CONCLUSION

The improvement observed in students' critical thinking skills aligns with findings from previous studies, such as those by Raslan & Forawi (2024) and Qu et al. (2024), which also showed that structured learning interventions based on critical thinking indicators can significantly enhance student performance. The increase in student scores and classical completeness demonstrates the effectiveness of continuous refinement and iteration in the PBL cycles. By analyzing each cycle's shortcomings and redesigning the learning experience accordingly, educators were able to foster deeper cognitive engagement among students.

Furthermore, the results support the assertion by Supriadi et al. (2024) that conceptual understanding is a result of constructivist learning processes, with thinking skills acting as tools to construct that understanding. In this case, the PBL model served as an effective vehicle for students to apply critical thinking strategies in solving real-world problems, consistent with the critical thinking characteristics outlined by Fernandes et al. (2024). The structured stages of PBL, problem identification, collaborative investigation, creation, and reflection allowed students to move beyond surface-level learning and engage in

meaningful analysis.

This study confirms the importance of learning models that prioritize active student involvement and real-world problem contexts. As emphasized by Konstantinidis (2024), problem-based learning enables students to work collaboratively, express opinions, and actively construct knowledge in a conducive classroom environment. The results are also supported by Purwanto et al. (2024) and Wang & Wang (2024), who found that students' critical thinking skills improve significantly when learning is centered around problem-solving activities. Finally, the comparative effectiveness of PBL over traditional learning methods, as highlighted in the work of Affandy et al. (2024) and Lee & Son (2024), further underscores the value of adopting innovative and student-centered pedagogies to foster critical thinking in educational settings.

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