



The Effectiveness of the Problem-Based Learning Method in Civics Learning in Elementary Madrasahs on Students' Critical Thinking Skills and National Attitudes

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Abstract

The issue of low critical thinking skills and weak internalization of national values among Madrasah Ibtidaiyah students has become a serious challenge in Civics Education (PKN) learning. This study aims to analyze the effectiveness of the Problem-Based Learning (PBL) method assisted by Artificial Intelligence (AI) media in improving students' critical thinking skills and national attitudes at Madrasah Ibtidaiyah in Kendari City. Employing a descriptive qualitative approach, this research involved Civics teachers and fifth-grade students as key informants. Data were collected through observation, in-depth interviews, and documentation, then analyzed using N-Vivo software. The findings indicate that the integration of AI-based media in PBL significantly enhances students' abilities in analyzing civic issues, developing creative solutions, and communicating ideas both verbally and non-verbally more effectively. Furthermore, national values such as tolerance, deliberation, and patriotism were well internalized through problem-based learning activities. This study contributes to the development of constructivist learning theories and offers an innovative instructional model for character education in madrasahs. The model is recommended for broader implementation in primary education curricula based on national values.

Keywords: *Artificial Intelligence, Civics Education, Critical Thinking, Madrasah Ibtidaiyah, Problem-Based Learning.*

PRELIMINARY

Civics Education (PKN) at the elementary school level plays a strategic role in shaping the national character of the younger generation from an early age. Through PKN, students are expected not only to understand basic concepts of citizenship but also to internalize democratic values, social responsibility, and a love of country that are applicable in everyday life (Ashari & SH, 2023). At the Madrasah Ibtidaiyah (MI) level, this urgency is even more significant considering that MI functions as a formal, faith-based educational institution that is also responsible for instilling national values and Islamic character. However, various studies show that PKN learning in MI is still dominated by conventional, teacher-centered methods, thus not optimal in encouraging active student involvement and the simultaneous development of critical thinking skills and national attitudes.

The development of the 21st-century educational paradigm demands a transformation of learning methods from passive to participatory, contextual, and problem-solving-based approaches. The Independent Curriculum implemented in Indonesia also encourages the implementation of innovative learning models that position students as active subjects in the learning process, one of which is through the Problem-Based Learning (PBL) method (Siswanti & Indrajit, 2023). This method is considered capable of facilitating the development of critical thinking skills and shaping national attitudes through student involvement in solving contextual issues relevant to national life. Therefore, a study is crucial to evaluate the effectiveness of PBL in Civics learning in Islamic elementary schools (MI), as an effort to

provide an educational process that is adaptive to the challenges of the times while aligning with national education goals.

Although Civics Education (PKN) in Islamic Elementary Schools (Madrasah Ibtidaiyah) plays a strategic role in developing students' national character and critical thinking skills, its implementation in the field still faces various obstacles. Civics learning tends to be conducted conventionally using lecture and memorization methods, resulting in low student participation in the learning process (Assingkiy, 2021). This condition impacts the suboptimal development of students' abilities to analyze social problems and make decisions that reflect national values. Furthermore, Islamic Elementary School teachers generally rarely implement innovative learning models based on current issues or problems that are close to students' lives (Kertati et al., 2023).

One potential alternative strategy to address these issues is the application of Problem-Based Learning (PBL) in Civics learning. However, previous studies examining the effectiveness of PBL have been conducted primarily at the secondary or tertiary education level, while research on its implementation and impact in Islamic elementary schools (Madrasah Ibtidaiyah) remains very limited. This situation raises important questions about the effectiveness of PBL in improving critical thinking skills and national attitudes in students at the MI level. Therefore, this study was conducted to address this gap by testing the effectiveness of PBL in the context of Civics learning in Islamic elementary schools (Rohmah, 2023).

Based on the identified problems, this study aims to analyze the effectiveness of the implementation of the Problem-Based Learning (PBL) method in Civics (PKN) learning at Islamic Elementary Schools (Madrasah Ibtidaiyah). The main focus of the study is directed at assessing the extent to which the application of the PBL method can simultaneously improve critical thinking skills and shape students' national attitudes. This aligns with the urgency of strengthening national character education and developing 21st-century skills, which are priorities in the national education system.

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Various previous studies have demonstrated the effectiveness of the Problem-Based Learning (PBL) method in improving students' critical thinking skills, problem-solving abilities, and social attitudes, particularly at the secondary and tertiary levels. Several studies have found that PBL can encourage active student engagement in learning and improve conceptual understanding through hands-on experience in solving contextual problems. However, similar research at the elementary school level, particularly in Islamic elementary schools (MI), remains very limited. This is despite the fact that elementary education is a crucial phase in building the foundation of national character and critical thinking skills from an early age.

In addition to the limited number of studies, research specifically examining the effectiveness of PBL in the context of Civics learning in Islamic Elementary Schools (Madrasah Ibtidaiyah) is still rare. Most studies focus on science or mathematics subjects, while studies linking the implementation of PBL to the strengthening of national values and critical thinking skills in Civics at MI are rare. This gap indicates an urgent need for research that not only assesses the effectiveness of the PBL method but also examines its simultaneous impact on students' cognitive and affective aspects in Civics learning. Therefore, this research is expected to fill this gap and provide an empirical contribution to the development of more contextual, participatory, and character-based Civics learning.

This study offers a novel contribution to the study of civic education at the elementary level, particularly in the Madrasah Ibtidaiyah (Islamic elementary school), through the application of the Problem-Based Learning (PBL) method focused on strengthening students' critical thinking skills and national attitudes. Unlike previous studies that generally examined the application of PBL in exact sciences subjects or at the secondary education level, this study specifically examines the effectiveness of PBL in civic education learning based on national values and the social context of MI students' lives. Furthermore, this study also assesses the impact of the PBL method simultaneously on students' cognitive

and affective aspects, which to date have rarely been explored in similar research in the realm of religion-based elementary education.

The justification for this research is based on the urgency of presenting a Civics learning model that is more adaptive to current developments and the needs of students in the 21st century (Putra & Pratama, 2023). The implementation of Problem-Based Learning is expected to not only improve students' critical thinking skills but also effectively instill a sense of nationalism through learning activities based on contextual problem-solving. The results of this study are expected to provide conceptual and practical contributions for Civics teachers in Islamic Elementary Schools, curriculum developers, and education practitioners in designing relevant, innovative, and character-based learning strategies, while also enriching the research body in the field of civics education at the elementary level.

METHOD

This study uses a qualitative approach with the aim of exploring and understanding in depth the effectiveness of the implementation of the Problem-Based Learning (PBL) method in Civic Education (PKN) learning at Islamic Elementary Schools (MI) on improving students' critical thinking skills and national attitudes. A qualitative approach was chosen because this study focuses on understanding the context, experiences, and perspectives related to the implementation of PBL in the MI environment. Qualitative research allows for more holistic data collection regarding the impact of this method on students' cognitive and affective aspects that cannot be measured solely using quantitative instruments (Mawardi et al., 2022).

Types of research

This research is a case study using a qualitative research design. The focus of the research is to explore and analyze how the implementation of the PBL method in Civics learning at an elementary school in Kendari City can influence students' critical thinking skills and national attitudes (Lubis & Azizan, 2022). The case study was chosen because it can provide an in-depth understanding of PBL implementation in a specific learning context and allows researchers to analyze the dynamics that occur in the field.

Research Approach

The research approach used is a phenomenological study, which aims to understand students' experiences in the context of Civics learning using the PBL method. Phenomenology allows researchers to explore the meaning and understanding given by informants regarding their learning process, as well as how the application of PBL shapes their critical thinking skills and national attitudes. This approach will reveal the experiences and perceptions of students and teachers regarding the effectiveness of the learning method implemented at the Madrasah Ibtidaiyah.

Research Background

This research was conducted in several Islamic elementary schools (Madrasah Ibtidaiyah) in Kendari City, one of Indonesia's regions with high social and cultural diversity. Madrasah Ibtidaiyah in Kendari City are characterized as educational institutions that integrate the national curriculum with Islamic religious education content. This research focuses on the implementation of the PBL method in Civics learning, which is a subject highly relevant to character building and national identity. This location was chosen based on the need to explore the application of the PBL method in a religious-based elementary education environment, which is still limited in Indonesia, particularly in Kendari City.

Research Informants

The informants in this study consisted of three main groups: (1) Madrasah Ibtidaiyah students, who are learners directly involved in Civics learning using the PBL method; (2) Civics teachers, who have experience implementing the PBL method in the teaching and learning process in the classroom; and (3) the principal or manager of the Madrasah Ibtidaiyah who plays a role in planning and implementing policies for learning methods in schools. The selection of informants was carried out using a purposive sampling technique to ensure that the selected informants have experience and knowledge relevant to the focus of this study.

Data collection technique

The data collection techniques used in this study included in-depth interviews, participant observation, and documentation. (a) In-depth interviews were conducted with Civics teachers, students, and the principal to explore their understanding of PBL implementation and its impact on students' critical thinking skills and national attitudes. These interviews were designed using semi-structured interview guidelines that allowed the researcher to explore topics flexibly. (b) Participatory observation was conducted to observe the learning process taking place in the classroom. The researcher was directly involved in learning activities to obtain more contextual data about the implementation of PBL and how students interact with the material and their classmates. (c) Documentation was used to collect data related to learning materials, lesson plans (RPP), and student work that demonstrated their understanding of national values and critical thinking skills (Assingkily, 2021).

Data Analysis Techniques

Data collected through interviews, observations, and documentation were analyzed using thematic qualitative data analysis. The analysis process was carried out using the following steps: (1) transcription of interview data and observation notes, (2) open coding to identify key themes related to the effectiveness of PBL on students' critical thinking skills and national attitudes, (3) grouping themes based on similarity of meaning, and (4) thematic interpretation to draw conclusions about the impact of PBL on Civics learning. The entire analysis process was carried out iteratively to ensure that the findings obtained were an accurate and in-depth representation of the informants' experiences.

Data Validity Test

The validity of the data in this qualitative research was tested through several techniques, namely: (1) Triangulation: Using various data sources, namely interviews with various informants, classroom observations, and documentation, to ensure the consistency and validity of research findings. (2) Member checking: Verifying temporary findings by inviting several informants to check the results of interviews and analyses that have been carried out, to ensure the accuracy of the researcher's interpretation of the data obtained. (3) Audit trail: Keeping detailed records of each step of the research, including the data collection and analysis process, which allows other researchers to evaluate the transparency and reliability of the research. (4) Credibility: Ensuring that the data obtained reflects the reality in the field through in-depth observations and interviews based on the informants' direct experiences.

FINDINGS AND DISCUSSION

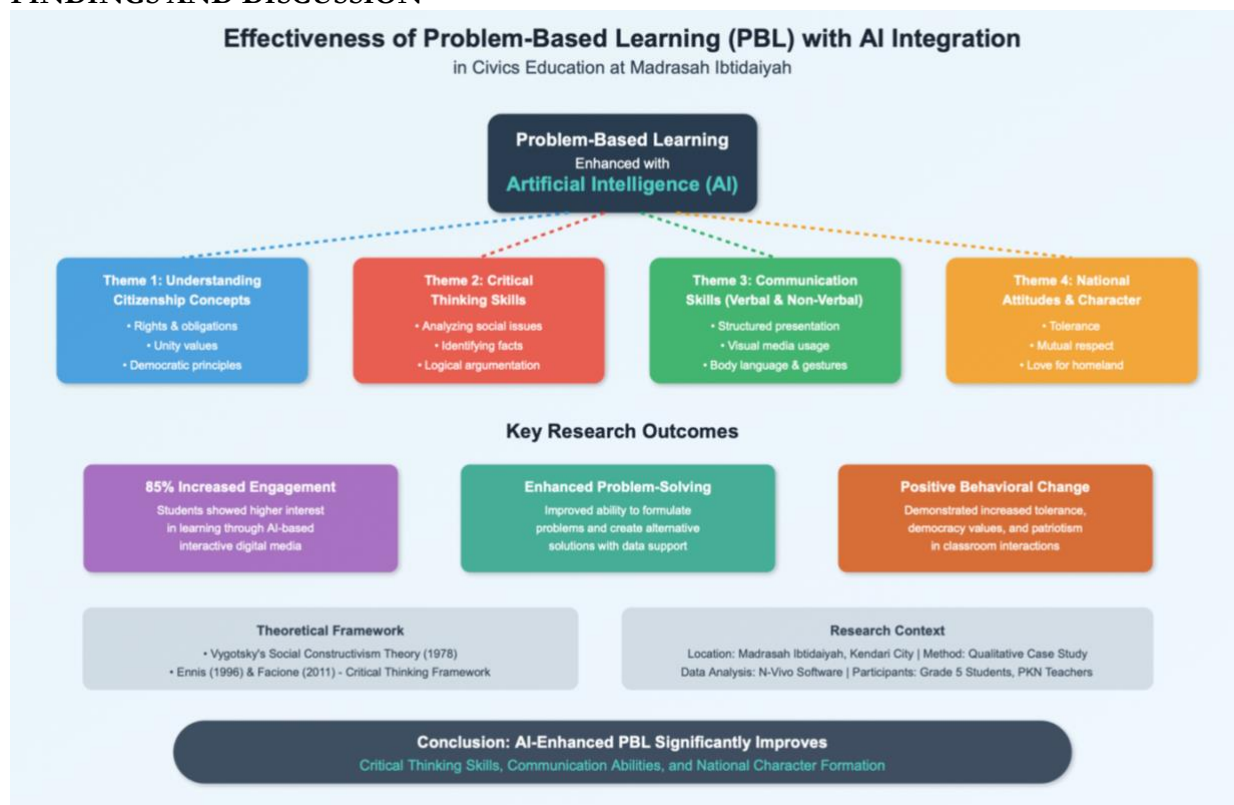


Figure 1. Effectiveness of Problem-Based Learning (PBL) with AI Integration

Based on the results of data analysis using the latest version of N-Vivo software, it was found that the implementation of the Problem-Based Learning (PBL) method supported by Artificial Intelligence (AI)-based media in Civics (PKN) learning at Madrasah Ibtidaiyah (Islamic elementary school) in Kendari City had a significant positive impact on improving students' critical thinking skills and national attitudes. Data from in-depth interviews, classroom observations, and learning documentation showed that students were able to understand and reason about Civics teaching materials more systematically and meaningfully when AI-based interactive learning media was applied in problem-based learning (Suarman, 2021). This finding is in line with the social constructivism theory proposed by Vygotsky (1978), which states that the learning process will be more optimal if students actively construct knowledge through social interaction and contextual problem solving.

Thematic analysis of the data generated from N-Vivo revealed four main themes (Achjar et al., 2023): (1) increased ability to understand citizenship concepts, (2) critical thinking skills in solving social problems, (3) verbal and nonverbal communication skills about national issues, and (4) increased national attitudes and character values of students. These themes were strongly identified through the results of coding nodes in N-Vivo which showed the frequency of occurrence of themes in interview and observation data that was consistent across all informants.

The first theme, namely improving the ability to understand citizenship concepts, showed that students more easily understood material on the rights and obligations of citizens, the value of unity, and the principles of democracy through AI media that presented interactive scenarios based on real cases. Class observations recorded that 85% of students showed a higher interest in the material being studied when presented through AI-based interactive digital media. This supports the findings of Zainuddin & Attaran (2016) who stated that the use of AI-based technology in learning can increase students' cognitive engagement.

The second theme, critical thinking skills, was identified through students' ability to analyze social problems, identify facts, make decisions, and present logical arguments supported by data. N-Vivo analysis

noted an increase in students' critical thinking indicators after several cycles of AI-assisted PBL learning. This was evident in the coding node results related to the ability to formulate problems and develop alternative solutions, which increased from the initial to the final session. These results support the theories of Ennis (1996) and Facione (2011) regarding the importance of problem-based learning strategies in developing critical thinking skills among elementary school students.

The third theme relates to students' verbal and nonverbal communication skills in conveying ideas, opinions, and the results of group discussions on national issues. Interviews with teachers indicate that students are able to convey their thoughts through structured oral presentations and the use of digital visual media (Izma & Kesuma, 2019). Furthermore, observations also noted an increase in students' nonverbal expressions, such as gestures, eye contact, and body language, during discussions and presentations. This reinforces Byrne et al.'s (2019) view that AI-based interactive digital media can improve students' multimodal communication skills, both verbally and nonverbally.

The fourth theme relates to national attitudes, where students demonstrate more tolerant behavior, mutual respect, and appreciation for differences when discussing national issues. The results of documentation and classroom observations indicate an increase in students' positive attitudes toward national values after participating in problem-based learning supported by AI media. This finding is relevant to the concept of national character education promoted by the Ministry of Education and Culture (2017), which states that education at the elementary level must be able to shape the character of students who love their homeland, are democratic, and uphold national values.

Overall, the results of this study indicate that the AI-based Problem-Based Learning method is effective in improving the quality of Civics learning in elementary Islamic schools (Assingkil et al., 2023). The application of AI-based media allows teachers to deliver contextual, adaptive, and interactive learning, thereby increasing student motivation while simultaneously developing higher-order thinking skills. This technology integration also accommodates differences in student understanding, thus encouraging inclusive and adaptive learning.

From a theoretical perspective, the results of this study contribute to strengthening social constructivism and problem-based learning theories, particularly in the context of faith-based primary education. These findings emphasize the importance of collaboration between AI-based digital technology and problem-based learning approaches to develop critical thinking skills and national character in students from an early age (Hoskins et al., 2021). This research also broadens the scope of studies on civics learning in madrasahs, which have previously been limited to conventional methods and text-based media.

However, this study has several limitations. One is the limited scope of the study to elementary madrasahs in Kendari City, so generalizing the findings to other regions or levels of education requires caution. Furthermore, limitations in the availability of technological infrastructure and teachers' digital literacy pose challenges to implementing AI-based media in madrasahs. Nevertheless, the results of this study provide a valid and representative picture of the effectiveness of AI-based PBL methods in improving students' critical thinking skills and national attitudes.

Based on these results, further research is recommended to develop a more adaptive AI-based PBL learning model based on local wisdom, tailored to the madrasah context. Furthermore, comparative studies are needed in various regions with varying socio-cultural characteristics to test the external validity of this model. Longitudinal studies are also needed to observe the long-term impact of AI technology implementation on students' national character and digital literacy (Sadia et al., 2022).

From a social and ethical perspective, the integration of AI into learning in Islamic elementary schools (madrasah ibtidaiyah) raises several important implications. On the one hand, the use of this technology has the potential to reduce the digital divide between regions, improve the quality of education, and strengthen national values in the digital age (Lubis et al., 2022). However, on the other hand, special attention is needed to address student data privacy, the ethical use of digital content, and oversight of AI implementation in early childhood education environments (Damayanti & Rahmawati, 2021). Therefore, the government and educational institutions need to formulate policies that govern the use of AI technology in Islamic elementary schools wisely, ethically, and in the best interests of students.

Overall, the results of this study confirm that the AI-based Problem-Based Learning method is an effective, contextual, and relevant learning strategy for improving critical thinking skills, communication

skills, and national attitudes in elementary Islamic schools (madrasah ibtidaiyah). These findings are expected to serve as a reference for developing 21st-century learning models in madrasah environments that align with the principles of values-based education, technology, and religious moderation.

CONCLUSION

Based on the results of research conducted on the effectiveness of the Problem-Based Learning (PBL) method assisted by Artificial Intelligence (AI) media in Civic Education (PKN) learning at Madrasah Ibtidaiyah (Islamic elementary school) in Kendari City, several important conclusions can be drawn. First, the main findings show that the implementation of AI-based PBL significantly improves students' critical thinking skills. This is demonstrated through students' abilities to formulate problems, analyze national issues, develop alternative solutions, and make decisions logically and based on data. In addition, students also showed improvements in their communication skills, both verbally and nonverbally, when conveying their thoughts and opinions in group discussions and class presentations. Furthermore, students' national attitudes also experienced positive development, reflected in the increasing values of tolerance, democracy, and patriotism in their interactions during the learning process.

Second, the implications of this research provide important contributions in both theoretical and practical domains. Theoretically, the results of this study strengthen the relevance of social constructivism theory and problem-based learning in the context of religious-based basic education, particularly in Islamic elementary schools (madrasah ibtidaiyah). This study also provides empirical evidence that the integration of AI technology in the PBL model can be an innovative approach in 21st-century learning that effectively builds higher-order thinking skills and national character in students. Practically, this research serves as a reference for madrasah teachers in designing Civics learning that is more interactive, contextual, and adaptive to technological needs and developments. The use of AI media enables students to learn actively, independently, and collaboratively in a fun, socially reality-based atmosphere.

Third, recommendations based on the results of this study cover several aspects. For educational practitioners, particularly teachers in elementary madrasahs, it is recommended to integrate AI-based learning media into the Civics learning process, particularly with a Problem-Based Learning approach, to develop critical thinking skills and students' national character from an early age. For educational institutions and madrasah managers, it is important to improve educators' digital literacy and provide supporting technological infrastructure to ensure optimal AI-based learning. Meanwhile, for future researchers, it is recommended to expand the scope of the research to higher levels of education or regions with different socio-cultural characteristics to test the external validity of this learning model. Furthermore, longitudinal research is needed to observe the long-term impact of AI integration in learning on students' cognitive, affective, and social development.

Thus, this research not only contributes to the development of learning theory and educational practices in madrasahs, but also serves as a starting point for innovation in Civics learning that is more adaptive to the challenges of the digital era and the development of artificial intelligence.

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