

The Effect of the Problem-Based Learning Model Using the AMK (Mystery Case Envelope) Media on Third-Grade Students' Critical Thinking Skills in Civic Education at MI Mathlaul Anwar

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Abstrak

This study aims to determine the effect of the Problem-Based Learning (PBL) model, supported by the AMK (Mystery Case Envelope) medium, on the critical thinking skills of third-grade students in the Civic Education subject at MI Mathlaul Anwar. The research method used was a quantitative approach with an experimental design. The sample consisted of 60 students divided into an experimental class (30 students) and a control class (30 students). The data analysis technique used was an essay test that had been tested for validity and reliability. The results showed that the average posttest score of the experimental class (83.80) was higher than that of the control class (75.73). The independent sample t-test yielded a significance value of $0.000 < 0.05$, indicating a significant effect of the PBL model supported by the AMK media on students' critical thinking skills.

Keywords: *Problem-Based Learning, AMK Media, Critical Thinking Skills.*

Introduction

Civics Education (PKn) is one of the subjects taught in elementary school. The importance of Civics Education starting at the elementary school level is to introduce students to a sense of nationalism, shape good character in accordance with the values embedded in the curriculum, and foster an understanding of human rights (Indah et al., 2025). Civics holds a strategic position in shaping the character of citizens and aims to foster a young generation that is critical, active, and democratic (Adelina Marta Aritonang et al., 2023).

Although Civic Education plays a very important role, its implementation in the classroom still faces various challenges. Civic Education is often perceived as boring by students because it relies heavily on rote memorization and fails to connect the material to real-life situations (Adelina Marta Aritonang et al., 2023). The methods used by teachers tend to be conventional, such as lectures and one-way question-and-answer sessions, so students are not actively engaged in the learning process. This situation results in students being unmotivated, passive, and unable to develop higher-order thinking skills, which should be the primary goal of Civic Education (Indah et al., 2025). Furthermore, the limited use of innovative learning media also hinders the optimal achievement of Civic Education learning objectives.

Critical thinking is an active process and a systematic and structured way of thinking designed to comprehensively understand information in order to form opinions or beliefs about the truth of that information (Habibu, Hasiru, and Maruwae, 2025). Critical thinking is one of the essential 21st-century skills that students need to develop in order to be more discerning when receiving all forms of information and to be able to solve problems effectively.

Critical thinking skills play a vital role in education, particularly in preparing students to face the increasingly complex challenges of the 21st century. Critical thinking enables students not merely to passively accept information, but to analyze, evaluate, and make rational decisions based on available evidence (Habibu, Hasiru, and Maruwae, 2025). In the context of Civics education, critical thinking skills are highly relevant because this subject requires students to understand the values of democracy, human rights, and civic responsibilities—concepts that cannot be grasped superficially. Therefore, fostering critical thinking skills from an early age in elementary school is a vital investment in shaping a generation that is intelligent, critical, and of good character.

However, the reality on the ground shows that elementary school students' critical thinking skills remain relatively low. Many students are only able to memorize and repeat information without truly understanding or deeply analyzing its meaning. This situation is caused by the dominance of teacher-centered learning, the use of lecture methods that do little to stimulate students' thinking, and the lack of contextual problems that can encourage students to think critically and creatively. This low level of critical thinking ability is also reflected in students' learning outcomes, which have not yet met expected standards, particularly in the areas of analysis and evaluation in the Civic Education (PKn) subject (Indah et al., 2025). This situation underscores the importance of implementing innovative learning models and media that can facilitate the development of students' critical thinking skills.

Based on the results of a preliminary observation in the third-grade class at Mathlul Anwar Islamic Elementary School, it was found that students lacked interest in Civic Education lessons because instruction was one-sided (teacher-centered), leaving students with few opportunities to learn independently and express their opinions. Teachers also did not use varied and innovative teaching models, making the lessons seem monotonous and unengaging.

One proposed solution is to implement the Problem-Based Learning (PBL) model using the AMK (Mystery Case Envelope) media. The PBL model is an innovative learning approach that uses contextual or real-world problems as the starting point of the learning process, designed to develop higher-order thinking skills, problem-solving abilities, and independent learning (Esema et al., 2021). The AMK medium is a game-based learning medium aimed at stimulating active learning, capturing students' attention, and minimizing boredom in the classroom environment (Nesti, 2023).

Method

This study employed a quantitative approach using an experimental method. The research was conducted at MI Mathlul Anwar during the second semester of the 2025/2026 academic year. The study population consisted of all third-grade students at MI Mathlul Anwar. The sample consisted of 60 students divided into two classes: the experimental class (30 students), where the Problem-Based Learning model assisted by AMK media was implemented, and the control class (30 students), which used conventional teaching methods.

Data collection utilized a test instrument consisting of 20 essay questions designed to measure critical thinking skills in the cognitive domains of C4 (analyzing), C5 (evaluating), and C6 (creating), aligned with the curriculum on emulating the character of the framers of Pancasila. Data collection was conducted through pretests and posttests in both classes. Teknik analisis data meliputi: (1) statistik deskriptif, (2) uji normalitas menggunakan Shapiro-Wilk, (3) uji homogenitas menggunakan Levene's Test, (4) a paired-sample t-test to determine the differences between the pretest and posttest scores for each class, and (5) an independent-sample t-test to compare the posttest scores of the experimental class and the control class. All analyses were conducted using SPSS version 22 at a significance level of 0.05.

Results and Discussion

Based on the results of the descriptive statistical analysis, an overview of the pretest and posttest scores for the control class and the experimental class is presented in Table 1 below.

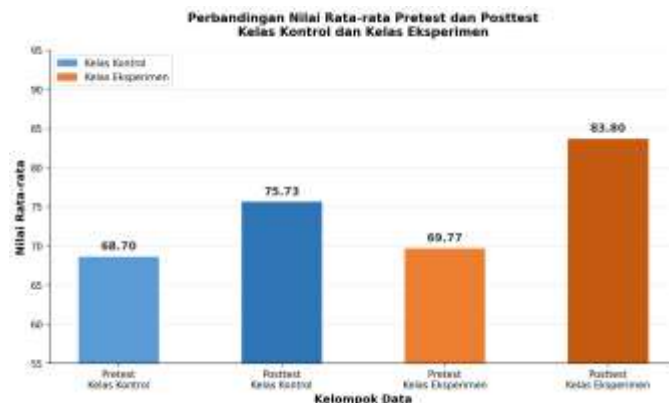
Table 1. Statistical Data Description

	<i>N</i>	<i>Range</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>	<i>Std. Dev.</i>
<i>Pretest Kontrol</i>	30	13	62	75	68,70	3,385
<i>Posttest Kontrol</i>	30	15	68	83	75,73	3,999
<i>Pretest Eksperimen</i>	30	13	63	76	69,77	3,390
<i>Posttest Eksperimen</i>	30	15	77	92	83,80	4,003

Sumber: data diolah peneliti, 2026

In the control class, which used conventional methods, the average pretest score was 68.70 with a standard deviation of 3.385. After instruction, the average posttest score increased to 75.73. Meanwhile, in the experimental class that implemented the Problem-Based Learning model supported by AMK media, the average pretest score of 69.77 increased significantly to 83.80 after the intervention. This indicates a much greater improvement compared to the control class.

To reinforce this picture, the following graph compares the average pretest and posttest scores of the two classes:



Data source: compiled by the researcher, 2026

Figure 4.1 Comparison of the Average Pretest and Posttest Scores Between the Control and Experimental Classes

The percentage increase in learning outcomes was also calculated using the formula for the difference between posttest and pretest scores. The experimental class showed an increase of 20.11%, while the control class showed an increase of only 10.23%. This difference confirms that the use of the Problem-Based Learning model is more effective in improving critical thinking skills than conventional learning.

The results of the normality test using the Shapiro-Wilk test indicate that all data (control pretest = 0.796; control posttest = 0.759; experimental pretest = 0.782; experimental posttest = 0.702) have a significance value > 0.05 , meaning that all data are normally distributed. The results of the homogeneity test using Levene's Test yielded a significance value of $0.994 > 0.05$, meaning the data have homogeneous variances. Both of these prerequisite tests meet the assumptions for conducting subsequent parametric tests.

The results of the Paired Sample t-Test for the experimental class showed a significance value (Sig. 2-tailed) of $0.000 < 0.05$ with a mean difference of -14.033, indicating a highly significant difference between the pretest and posttest scores. Similarly, in the control class, a significance value of 0.000 with a mean difference of -7.033 indicates that conventional learning also resulted in improvement, although not as substantial as in the experimental class.

To test for differences between the two groups, an independent samples t-test was conducted. The results showed a significance value of $0.000 < 0.05$ with a posttest mean difference of 8.067 points (experimental: 83.80; control: 75.73). This proves that there is a significant difference between the critical thinking abilities of the experimental class and the control class, so the alternative hypothesis (H_a) is accepted.

Based on the descriptive analysis conducted, the critical thinking skills of third-grade students at Mathlaul Anwar Islamic Elementary School in the Civic Education subject fall into the moderate category. This is reflected in the average pretest scores of 69.77 for the experimental class and 68.70 for the control class. The balance in initial ability between the two classes methodologically provides confidence that the differences in the final results obtained are purely the result of the treatment administered, not influenced by differences in students' initial abilities.

These findings align with the views of Habibu, Hasiru, and Maruwae (2025), who explain that critical thinking is an active and systematic process of comprehensively understanding information. Due to its active nature, this skill cannot be developed through one-way lecture methods. This is reinforced by Scriven and Paul (in Kusuma, Handayani, and Rakhmawati, 2024), who state that critical thinking enhances an individual's capacity to analyze, evaluate, and reconstruct thoughts to solve problems – a skill that cannot develop in a passive learning environment. This finding aligns with the results of Rahmadana et al. (2023), who revealed that the critical thinking skills of elementary school students are generally still low and require more innovative learning models, as was the case at MI Mathlaul Anwar prior to this study.

The measurement of critical thinking skills in this study refers to the indicators proposed by Susanto (in WDJ Pomalato and Hulukati, 2023), which encompass four main aspects: analyzing, identifying and solving problems, drawing conclusions, and evaluating or assessing. In line with this, Robert Ennis (in Fitriani et al., 2021) defines critical thinking as a rational and reflective thinking process in determining what should be believed or done. The pretest scores, which remain in the moderate category, indicate that these four indicators have not yet been maximally stimulated. As emphasized by Kusuma, Handayani, and Rakhmawati (2024), critical thinking skills can only develop optimally when students are placed in a learning environment that is active, challenging, and allows them to synthesize information from various sources.

In the experimental class, the learning process was conducted using the Problem-Based Learning (PBL) model supplemented by the AMK (Mystery Case Envelope) media. Learning takes place through five main steps, namely: (1) orienting students to the problem, (2) organizing students for learning, (3) guiding individual and group investigations, (4) developing and presenting work products, and (5) analyzing and evaluating the problem-solving process. All of these steps are integrated with the use of the AMK media to create an active, collaborative, and enjoyable learning environment.

Arends (in Saravina Putri Ramadhani et al., 2024) states that PBL is designed to help students develop thinking and problem-solving skills and become independent learners through real-life and simulated situations. I Wayan Dasna (in Karmila et al., 2026) adds that PBL starts with a case that is analyzed to identify the core of the problem, thereby encouraging students to learn actively. The effectiveness of this approach is also demonstrated by

Andriyani, Purwandari, and Hisnan Hajron (2021), who found a significant improvement in fifth-grade students' critical thinking skills in science through PBL supported by thematic Ludo-based media, with an average posttest score of 71.83 compared to a pretest score of 49.75. These findings reinforce that the combination of PBL and game-based media is capable of optimizing students' active thinking.

Rusman (in Khairunnisa et al., 2025) asserts that problems in PBL are real-world, unstructured, require diverse perspectives, and challenge students' knowledge and attitudes, making independent learning a priority. This view is reinforced by IGA Mas Darwati et al. (2021), who state that PBL is capable of developing higher-order thinking skills because students are encouraged to solve real-world problems in a structured manner in order to construct their own knowledge. This is evidenced in the research by Intan Nila Sari, Sekar Dwi Ardianti, and Khamdun (2023), which showed a significant increase in average critical thinking ability from 50.1 to 88.6 following the implementation of PBL supported by PSA media, with a significance level of 0.000. This demonstrates that when PBL is concretely implemented through media, students do not merely understand the material but genuinely develop meaningful critical thinking skills.

Learning success in the experimental class was also supported by the use of the Mystery Envelope (AMK) medium. Adenya, Anggraini, and Sari (2021) state that the Mystery Envelope is a game-based learning medium capable of stimulating active learning, capturing attention, and reducing boredom, thereby making the learning experience more memorable. Nesti (2023) adds that this medium not only creates a fun learning atmosphere but also functions as a pedagogical tool that fosters higher-order thinking skills while developing socio-emotional aspects such as cooperation, discipline, and responsibility. The relevance of combining innovative media with PBL is further demonstrated by Wahdah, Widiada, and Hasnawati (2024), who found a positive effect of PBL supported by animated media on the critical thinking skills of fourth-grade elementary school students, with the posttest score for the experimental class at 74.43 – higher than the control class's score of 71.41 – and a calculated t-value of 2.145 exceeding the critical t-value of 1.682.

The results of the study demonstrate a significant effect of implementing the PBL model supported by AMK media on students' critical thinking skills. The average posttest score for the experimental class was 83.80, surpassing that of the control class, which was only 75.73. The percentage increase for the experimental class (20.11%) was significantly higher than that of the control class (10.23%). The paired sample t-test for the experimental class yielded a significance value of 0.000 with a mean difference of 14.033 points, while the independent sample t-test yielded a significance value of 0.000 with a posttest mean difference of 8.067 points. Thus, the null hypothesis was rejected and the alternative hypothesis was accepted, meaning that there was a significant effect of the application of the PBL model assisted by AMK media on the critical thinking skills of third-grade Civics students at MI Mathlaul Anwar.

This success can be explained through Facione's critical thinking framework (as cited in Padmakrisya and Meiliasari, 2023), which includes six indicators: interpretation, analysis, evaluation, inference, explanation, and self-regulation. These six indicators are directly stimulated in PBL learning supported by the AMK media, where students read cases (interpretation), analyze the contents of the envelopes (analysis), discuss solutions (evaluation and inference), present findings (explanation), and reflect on their thinking processes (self-regulation). This aligns with the perspective of Winarti et al. (2021) that the Mystery Envelope medium aligns with the holistic objectives of Civic Education (PKn) as it fosters collaboration, active problem-solving, and direct participation. This finding is further confirmed by Putu Sintya Devi and Gede Wira Bayu (2020), who demonstrated a significant effect of visual media-

assisted PBL on elementary students' critical thinking with a significance value of 0.001, indicating the consistent effectiveness of PBL across various media types and subjects.

The success of the PBL model supported by AMK media can also be understood through the factors that influence the development of critical thinking. Rosmaini (2023) identified three factors that have a positive influence on critical thinking in Civic Education: physical condition, intellectual development, and motivation. The PBL model supported by AMK media is capable of addressing all three factors simultaneously: the game element in the envelope enhances learning motivation, group discussions stimulate intellectual development, and a pleasant learning atmosphere helps maintain students' physical condition so they remain focused and enthusiastic. This finding is reinforced by Arzeti and Ismiyanti (2025), who demonstrated the significant impact of PBL supported by a spinning wheel media on elementary school students' mathematical critical thinking skills with a significance value of 0.000, further strengthening the conclusion that PBL combined with game-based media is consistently effective in enhancing critical thinking skills at the elementary education level.

These findings are consistent with several previous studies. Andriyani et al. (2021) concluded that PBL supported by thematic board games significantly improved fifth-grade students' critical thinking skills in science, with a posttest score (71.83) far exceeding the pretest score (49.75). Wahdah & Ketut Widiada (2024) demonstrated that the PBL model supported by animated media has a positive effect on the critical thinking skills of elementary school students, with a calculated t-value (2.145) > table t-value (1.682). Arzeti & Ismiyanti (2025) confirmed that PBL supported by a spinning wheel has a significant effect on the critical thinking skills in mathematics of fourth-grade elementary school students (sig. 0.000 < 0.05).

The strength of the Problem-Based Learning model in enhancing critical thinking skills lies in its ability to present real-world, contextual problems, encouraging students to think actively and engage in collaborative discussions. The use of AMK media strengthens the learning process by introducing game elements that boost student enthusiasm and active engagement. Students are encouraged to open envelopes, identify problems, discuss them, and present their solutions to the class, which synergistically develops critical thinking skills at levels C4 through C6.

Conclusion

Based on the results of the research and discussion conducted regarding the effect of the Problem-Based Learning (PBL) model assisted by the AMK (Mystery Case Envelope) media on the critical thinking skills of third-grade students in Civic Education at MI Mathlaul Anwar, the following conclusions can be drawn: The critical thinking skills of third-grade students in Civic Education at MI Mathlaul Anwar prior to the intervention were in the moderate category, with an average pretest score of 69.77 for the experimental class and 68.70 for the control class. This indicates that the initial abilities of both classes were relatively equivalent and that conventional Civic Education instruction had not been sufficiently effective in developing students' critical thinking skills. The implementation of the Problem-Based Learning (PBL) model supported by AMK media in the experimental class proceeded through five main stages: orienting students to the problem, organizing learning, individual and group investigation, developing and presenting work products, and analyzing and evaluating problem-solving. The use of AMK media strengthened this process by introducing game elements that increased students' enthusiasm and active engagement in every stage of learning. Students are encouraged to open the envelope, identify the problem, engage in collaborative discussion, and present their solutions to the class.

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