

Teachers' Learning Strategies in Developing Critical Thinking of Elementary School Students: A Literature Review

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Abstract

Critical thinking skills are an important aspect that needs to be developed from an early age, especially at the elementary school level. This research aims to identify effective learning strategies in encouraging critical thinking skills of elementary school students. The research was conducted using the literature review method of scientific articles obtained through Google Scholar with relevant keywords. From around 70 initial search results, a screening process was carried out based on the year of publication (2019–2023), topic relevance, and suitability with inclusion criteria, until finally 10 articles were obtained that were worthy of further analysis. The results of the study show that strategies such as creating a challenging learning atmosphere, using interactive learning media, and writing training on a regular basis are effective in developing critical thinking skills. The strategy is in line with Bloom's theory of constructivism and taxonomy because it encourages active engagement, analytical ability, and problem-solving. Challenges found in field implementation include limited time, resources, and teacher readiness. Therefore, strengthening teacher competence and institutional support is important. In conclusion, the implementation of the right strategy can significantly support the development of critical thinking skills in elementary school students.

1. Introduction

Education plays a vital role in shaping high-quality human resources in the modern era. In today's global and digitalized world, a nation's progress is no longer determined solely by its natural resources, but by the quality of its human capital particularly their critical thinking skills. Students must be equipped with critical thinking from an early age to face complex challenges and make informed decisions in their academic and personal lives.

Recent changes in curriculum and education policies in Indonesia, such as the implementation of the Merdeka Belajar curriculum, emphasize the importance of higher-order thinking skills, including analysis, evaluation, and problem-solving. However, based on the 2018 PISA results, Indonesian students still ranked below the international average in terms of critical thinking and problem-solving abilities. This gap highlights an urgent need to improve students' critical thinking, especially at the primary level where foundational skills are formed.

Critical thinking, as defined by Johnson (2009), is a structured mental process that involves problem-solving, analyzing assumptions, and making logical decisions. At the elementary school level, teachers play a crucial role in nurturing these skills by applying effective teaching strategies in the classroom.

Although various studies have identified learning strategies such as Problem-Based Learning (PBL), inquiry-based learning, and cooperative group discussions as effective in enhancing students' critical thinking, many of these studies are limited in scope. For example, they often focus on middle or high school students, or lack a specific focus on classroom strategies implemented by elementary school teachers. Moreover, previous research often does not provide a comprehensive and systematic review of recent findings related to this topic.

This research attempts to fill that gap by conducting a literature review to explore: What are the learning strategies used by elementary school teachers to foster students' critical thinking skills? Through a systematic analysis of recent literature, this article aims to provide:

- A clear overview of learning strategies relevant to primary education,
- Theoretical and practical insights on the development of students' critical thinking,
- Recommendations for teachers, schools, and policymakers in implementing effective strategies in classroom practice.

The findings of this study are expected to benefit:

1. Teachers, by enriching their teaching methods and strategies;
2. Students, by helping them strengthen their critical thinking abilities from an early stage;
3. Future researchers, by offering a reference framework for further study on critical thinking development in primary education.

Literature Review

1.1 Critical Thinking: Theoretical Foundations

Critical thinking is a core component of 21st-century skills and is defined as the ability to analyze, evaluate, and synthesize information to make reasoned judgments. According to Ennis (1993), critical thinking includes elements such as clarification, inference, evaluation, and metacognition. This is aligned with Bloom's Taxonomy (revised by Anderson & Krathwohl), where higher-order cognitive skills analyzing, evaluating, and creating are essential for the development of critical thinking (Widodo, 2021).

From a theoretical perspective, constructivist learning theory, as proposed by Piaget and Vygotsky, supports critical thinking development through active engagement, problem-solving, and social interaction. Vygotsky emphasized the role of scaffolding and Zone of Proximal Development (ZPD), which are crucial in helping students move from simple to complex reasoning with the guidance of a teacher.

Handayani and Suryani (2022) found that students engaged in learning strategies grounded in constructivist theory showed better outcomes in both conceptual understanding and critical thinking.

1.2 Active Learning Models for Critical Thinking

Active learning models are widely recognized as effective strategies to foster critical thinking. These models shift the learning process from teacher-centered to student-centered, promoting inquiry, collaboration, and reflection.

Several active learning models that are aligned with critical thinking development include:

- Problem-Based Learning (PBL): Students are presented with real-life problems and are required to identify solutions through investigation and analysis. Teachers act as facilitators, prompting students to ask questions, gather data, and synthesize information to develop reasoned conclusions.
- Project-Based Learning (PjBL): This model involves long-term, interdisciplinary projects where students plan, design, implement, and present a product or solution. It fosters critical thinking through planning, decision-making, and peer evaluation.
- Inquiry-Based Learning (IBL): Students pose questions, investigate, and construct meaning through exploration and evidence-based reasoning. This model encourages students to think scientifically and critically.

According to Arends (2012), these models are most effective when teachers structure the learning environment to include challenging questions, opportunities for reflection, and constructive peer interaction. Research by Nurhayati (2021) further confirms that active learning increases students' higher-order thinking skills, motivation, and engagement.

1.3 The Role of the Teacher in Promoting Critical Thinking

Teachers are key agents in developing students' critical thinking skills. Their role involves not only delivering content but also designing meaningful learning experiences that encourage exploration, dialogue, and reflection.

Ayu and Nugroho (2023) argue that teacher strategies such as posing open-ended questions, encouraging debates, and facilitating group work are more effective in promoting critical thinking than traditional lecture methods. Teachers must also foster a classroom climate that values diverse perspectives and promotes safe spaces for students to express their ideas.

In the elementary school context, Rahmawati et al. (2020) found that learning strategies involving structured group discussion, guided inquiry, and student reflection journals contributed significantly to the development of analytical and evaluative thinking in students.

2. Method

This study employed a literature review method with a systematic approach to explore the learning strategies used by elementary school teachers in developing students' critical thinking skills. The main objective of this review was to identify, classify, and analyze learning strategies that have proven effective based on findings in scientific articles.

The review began with formulating a research question: "What learning strategies are used by teachers to develop students' critical thinking skills at the elementary school level?" Article searches were conducted through Google Scholar using the Publish or Perish (PoP) application with the keywords "learning strategies," "critical thinking," and "elementary school students." The scope of publication years was limited from 2019 to 2023 to ensure the recency and relevance of the data reviewed.

To maintain the quality and relevance of the sources, inclusion and exclusion criteria were applied. The inclusion criteria consisted of articles published in peer-reviewed journals, written in English or Bahasa Indonesia, focused on elementary school level, and discussed specific learning strategies linked to the development of critical thinking skills. Meanwhile, articles were excluded if they only discussed general theories without classroom application, did not involve the elementary level, or lacked clear methodological information.

From the initial search, 70 articles were found. The first filtering stage involved reading titles and abstracts to eliminate 20 articles that were not directly relevant to the topic. The remaining 50 articles were then read in full to assess the depth of content. In this stage, articles that did not explain the strategies in detail or lacked a clear connection to critical thinking were excluded. After this process, 15 articles remained. A final evaluation was conducted based on methodological clarity, strength of findings, and alignment with the research focus, resulting in 10 high-quality articles selected for in-depth analysis.

The selected articles were analyzed thematically to identify patterns in learning strategies, teacher practices, and their effects on students' critical thinking. The findings were then synthesized to draw conclusions and provide recommendations for classroom practice.

3. Results and Discussion

3.1. The Concept of Critical Thinking Skills in Elementary School Students

The results of the literature study show that critical thinking skills are an important component of the 21st century learning process. It is characterized by the ability to analyze, evaluate, and infer information logically. According to Lestari and Susilo (2020), critical thinking in elementary school students can be developed through interactive learning processes and contexts.

Indicators of critical thinking among elementary school students generally include: (1) the ability to analyze problems, (2) formulate opinions, (3) the ability to evaluate information, and (4)

make logical decisions (Sari & Fauziah, 2022). Factors influencing this include teachers' teaching styles, learning media, and active student participation (Putri et al., 2021).

3.2. Learning Strategies That Encourage Critical Thinking

Critical thinking is the ability to analyze, evaluate, and synthesize information objectively in making logical decisions. To develop these skills, a learning strategy specifically designed to actively engage learners in the process of higher-level thinking is needed.

According to Seknum (2013), a learning strategy is an action plan that includes methods, techniques, and procedures that aim to achieve learning goals effectively. This strategy must be able to facilitate learners not only to receive information, but also to question, evaluate, and process the information into new knowledge. In line with that, Lamatenggo (2020) emphasized that learning strategies that encourage critical thinking must consist of systematic components, namely preliminary activities, information delivery, active participation of students, evaluation, and followup.

At the preliminary activity stage, the teacher is tasked with building students' curiosity by relating new material to previous experiences or knowledge through perception. This aims to enable students to connect new concepts with their existing frame of mind, so that learning becomes more meaningful. Explicit delivery of learning objectives is also important so that students know what competencies are expected to be achieved.

The delivery of information in the context of critical thinking must pay attention to the principle of constructivism, which is to build students' knowledge based on active learning experiences. Teachers should not only provide information in one direction, but involve students in discussion, exploration, or direct observation of relevant phenomena.

The active participation of students is a crucial component in encouraging critical thinking. Lamatenggo (2020) emphasized that students must be given the opportunity to practice, discuss, solve problems, and express their opinions.

Learning evaluations should also be designed to measure critical thinking skills, not just memorize information. Evaluation instruments such as open-ended questions, project assignments, critical thinking assessment rubrics, and reflective portfolios are more suitable for assessing these skills.

Furthermore, follow-up activities need to be carried out to strengthen learning outcomes. Students who have not achieved their critical thinking goals can be given additional guidance, while students who have developed can be encouraged to apply critical thinking skills in more complex contexts.

In choosing a learning strategy, teachers must consider the characteristics of students, learning objectives, and learning environment conditions. According to Mager (in Lamatenggo, 2020), the selection of the right strategy must be oriented towards achieving learning goals, relevant to the future world of work, and using media that is able to optimally stimulate the various senses of students.

With proper strategy planning, consistent implementation, and targeted evaluation, the development of critical thinking skills among students can be achieved to the maximum. This will help learners become individuals who are able to think independently, creatively, and responsibly in making decisions in various aspects of life.

The results of various articles show that there are several learning strategies that are predominantly used by teachers:

Table 1. Learning Strategies

Author	Research Objectives	Strategy	Key Findings
Issa & Khataibeh (2021)	To investigate the effect of project-based learning (PjBL) on improving critical thinking skills among upper basic students from teachers' perspectives.	Implementing PjBL activities that require planning, researching, and presenting projects collaboratively.	Teachers observed that PjBL significantly improves students' critical thinking by engaging them in authentic tasks and problem-solving.
Killen & O'Toole (2023)	Identify and describe effective teaching strategies to improve student engagement and critical thinking in diverse classrooms.	Use explicit instruction, scaffolding, cooperative learning, and formative assessment to build critical thinking skills.	Effective teaching strategies encourage active participation and reflection, leading to better problem-solving and critical thinking abilities.
Anggraeni et al. (2023)	To conduct a systematic review of research on problem-based learning (PBL) for fostering critical thinking skills.	Analyzing findings from multiple studies on the application of PBL strategies in educational settings.	The systematic review confirmed that PBL consistently fosters critical thinking across various subjects and educational levels.
Rossi et al. (2021)	To evaluate the impact of active learning tools on students' learning outcomes, scientific attitudes, and critical thinking in an online course during the COVID-19 pandemic.	Using interactive online tools like polls, breakout discussions, and collaborative activities.	Active learning tools in online settings enhance critical thinking, engagement, and scientific attitudes, even during remote learning.
Nurhasanah et al. (2022)	Analyzing the effectiveness of PBL in improving critical thinking of elementary school students	Creates an atmosphere that makes students feel challenged during the learning process by using the PBL model	PBL improves the ability to identify problems, hypotheses, and evaluate solutions
Salsabila & Permana (2020)	Assessing the effectiveness of IBL in developing critical thinking	Creates an atmosphere that makes students feel challenged during the learning process by using the IBL model	IBL develops inference, data interpretation, and logical argumentation
Arifin & Nugrahini (2023)	Examining the application of PjBL to develop critical thinking	Creates an atmosphere that makes students feel challenged during the learning process by using the PjBL model	PjBL trains timing, reflection, and evaluation of student progress
Nadia & Prima (2022)	Creating an interactive learning media based on Articulate Storyline designed to improve students' critical thinking skills in science learning in elementary school	Use of interactive learning media	This interactive learning media Articulate Storyline is declared suitable for use in the science learning process for grade V elementary school and is effective in supporting the development of students' critical thinking
Resti Fitria Ariani (2020)	Knowthe application of the Problem Based Learning learning model in improving the critical thinking skills of elementary school students	Creates an atmosphere that makes students feel challenged during the learning process by using the PBL model	Theuse of the problembased learning model can improve the critical thinking skills of elementary school students
Tia et al (2019)	To find out the extent of the relationship between critical thinking skills and the ability to write editorial texts in grade XII students of SMA	Students are trained to be diligent in writing so that their critical thinking skills increase	Students who have high critical thinking skills also tend to have good editorial writing skills, and vice versa

Author	Research Objektivies	Strategy	Key Findings
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3.3. Results and Discussion 3

One of the important strategies in developing critical thinking skills in learners is to create a challenging learning atmosphere and motivate them to think deeper. This challenging atmosphere can be realized through the assignment or question that not only demands right or wrong answers, but invites students to analyze, evaluate, and relate the concepts learned with real experiences. One way is to use a learning model that involves the active role of students. Learning models that can develop students' critical thinking skills include:

1.) Problem-Based Learning (PBL)

Problem-Based Learning is a learning model that puts students in real situations to solve problems collaboratively. In the context of learning in elementary school, this model helps students understand that problems in daily life have various alternative solutions. The results of Resti Fitria Ariani's (2020) research show that the use of the problem-based learning model can improve the critical thinking skills of elementary school students. There is also a study by Nurhasanah et al. (2022) showing that the consistent application of PBL can improve students' critical thinking skills, especially in terms of identifying problems, proposing hypotheses, and evaluating solutions. The advantage of PBL lies in its contextual presentation, making students feel learning is relevant to their lives. However, the main challenge of PBL is the need for strong teacher guidance so that the process does not deviate from the learning goals.

2.) Inquiry-Based Learning (IBL)

Inquiry-Based Learning emphasizes the importance of exploration, observation, and open-ended questions as the basis for learning. In its application in the classroom, teachers facilitate students to formulate questions, collect data, test hypotheses, and conclude the results of their investigations. According to Salsabila and Permana (2020), IBL has been proven to be able to develop various indicators of critical thinking, such as the ability to make inferences, interpret data, and develop logical arguments. Compared to PBL, IBL provides a wider space for exploration and is very suitable for developing student independence. However, the disadvantage is that it is prone to misconception if it is not balanced with scaffolding from teachers.

3.) Project-Based Learning (PjBL)

Project-Based Learning focuses on achieving tangible results through the completion of projects that are relevant to the lives of learners. In the process, students design, plan, and complete projects independently or in groups. In the PjBL learning model, students are trained to think systematically, manage time, and evaluate their own work progress (Arifin and Nugrahini, 2023). Critical thinking skills arise naturally when learners have to make decisions, choose the right materials or sources of information, and reflect on the process they have gone through. PjBL also strengthens communication and collaboration skills that are important in 21st century education, PjBL excels at fostering responsibility, teamwork, and a deep understanding of concepts. However, this model requires longer time and readiness of learning resources.

From this comparison, it can be concluded that each model has its own advantages and limitations, and the selection must be adjusted to the characteristics of students, learning goals, and teacher readiness. PBL excels in the context of complex problem-based learning, IBL to train independent thinking, while PjBL is very effective in thematic and cross-subject learning.

The challenge of this strategy is that not all students respond to challenges in a positive way; some may feel depressed, anxious, or insecure if the demands of learning are perceived as too difficult or not up to their ability. This can hinder active participation and lower motivation to learn. In

addition, creating a challenging atmosphere requires careful planning and classroom management from teachers, so that the challenges given remain within realistic limits and do not cause psychological burdens for students.

3.4. Use of interactive learning media

Critical thinking skills are one of the main competencies of the 21st century that students must have, and their achievement is greatly influenced by the learning strategies used by teachers. In practice, teachers can not only rely on conventional methods, but also need to utilize interactive media that can stimulate students' activeness, curiosity, and analytical skills. The use of interactive media allows students to learn independently, explore the material more concretely, and engage in activities that require them to observe, question, analyze, and infer information. This is in line with the aspects of critical thinking which include focus, reason, inferences, clarification, and review.

This aligns with the findings of a study conducted by Nadia Legina and Prima Mutia Sari (2022), which showed that the development of interactive learning media based on Articulate Storyline is highly effective in improving elementary students' critical thinking skills, especially in science learning. This media was deemed highly feasible based on validation by subject matter and media experts, and it also received very positive responses from both educators and students. These findings reinforce the importance of innovation in the learning strategies applied by teachers, as discussed in my article on strategies to develop critical thinking skills.

The use of interactive learning media in elementary education certainly has many advantages, but it is not without its challenges. One of the main drawbacks is the dependence on technology. Most interactive media requires devices such as computers, projectors, or stable internet connections, which may not be available in all schools, especially in remote areas. Additionally, not all teachers possess adequate technological skills to operate or develop interactive media effectively, which can lead to its use being less impactful or merely formal

3.5. Students are trained to write regularly to enhance their critical thinking skills

Writing is a language skill that not only demands technical ability in arranging words but also critical thinking skills to produce meaningful, logical, and argumentative writing. In the writing process, especially when composing editorial texts, writers are required to identify issues, gather and evaluate facts, develop arguments, and offer solutions to the issues raised. All of these stages are closely related to critical thinking skills. Critical thinkers do not simply accept information at face value but are able to analyze, assess the accuracy of data, connect various facts, and build strong and convincing arguments.

Based on research by Sari, T. P., Dawud, D., & Andajani, K. (2019), the link between writing and critical thinking is further strengthened. This study empirically demonstrated a positive and significant relationship between critical thinking ability and the ability to write editorial texts. Students with higher critical thinking skills were found to produce better editorial writing because they could process and present facts objectively, construct logical arguments, and provide relevant solutions to the issues addressed. On the other hand, students with lower critical thinking skills tended to struggle with developing ideas, distinguishing facts from opinions, and building strong arguments in their writing. This poses a particular challenge for this strategy, as not all students have a strong interest or ability in writing, making the process feel more like a burden than a means of selfdevelopment. Writing requires time, concentration, and intensive guidance, which are often difficult to provide evenly in classrooms with a large number of students.

3.6. Challenges and Solutions in Implementation

Some challenges faced by teachers in implementing critical thinking strategies include limited time, a dense curriculum, and a lack of training for teachers. Additionally, the characteristics of elementary school students, who are still in the concrete operational stage, present their own difficulties (Sutrisno & Hidayati, 2020).

Solutions offered by several studies include: (1) improving teacher competence through continuous training, (2) providing learning media that support critical thinking activities, and (3) integrating critical thinking strategies into thematic and cross-disciplinary learning (Damayanti and Rosita, 2021).

3.7. Conclusion

The Based on all relevant articles reviewed between 2019 and 2024, it can be concluded that critical thinking skills are essential and should be developed from the elementary level. These skills include the ability to analyze, evaluate, interpret, and draw logical and in-depth conclusions. Teachers play a central role in fostering these abilities through appropriate and well-planned learning strategies.

Learning strategies that utilize specific models have proven effective in promoting critical thinking, including Problem-Based Learning (PBL), Inquiry-Based Learning (IBL), and Project-Based Learning (PjBL). In addition, strategies such as using interactive learning media and training students to write regularly have also been proven effective in developing students' critical thinking abilities. Each strategy has its strengths in encouraging students to think actively, argue, and solve problems independently. The implementation of these strategies is also in line with constructivist approaches and supported by Bloom's Taxonomy in the higher cognitive domain.

However, the implementation of these strategies in the field does not come without challenges, such as limited time, lack of resources, and teacher readiness. Therefore, collaboration between teachers, curriculum, and the learning environment is needed to create an active, reflective, and meaningful learning atmosphere for students.

3.8. Suggestions

Continuous efforts are needed to improve teacher competence, both through professional training and strengthening learning communities in schools. Policy support from the school and the provision of adequate learning facilities and infrastructure are also important factors to support the success of learning strategies that promote critical thinking.

Further research is recommended to test the effectiveness of implementing these learning strategies directly in the classroom, as well as to explore their adaptation in broader contexts or different educational levels.

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References

- Anggraeni, D. M., Prahani, B. K., Suprpto, N., Shofiyah, N., & Jatmiko, B. (2023). Systematic review of problem based learning research in fostering critical thinking skills. *Thinking Skills and Creativity*, 49, 101334.
- Ariani, R. F. (2020). Pengaruh Model Pembelajaran Problem Based Learning terhadap Kemampuan Berpikir Kritis Siswa SD pada Muatan IPA. *Jurnal ilmiah pendidikan dan pembelajaran*, 4(3), 422-432.

- Arifin, M., & Nugrahini, S. (2023). Implementasi Project-Based Learning dalam Meningkatkan Kemampuan Berpikir Kritis Peserta didik Sekolah Dasar. *Jurnal Pendidikan Dasar Indonesia*, 8(1), 45-52.
- Ayu, M. R., & Nugroho, A. (2023). Strategi Guru dalam Mengembangkan Berpikir Kritis Peserta didik Melalui Pembelajaran Kontekstual. *Jurnal Ilmiah Pendidikan*, 14(2), 120-132.
- Damayanti, R., & Rosita, D. (2021). Integrasi Keterampilan Berpikir Kritis dalam Pembelajaran Tematik di Sekolah Dasar. *Jurnal Ilmu Pendidikan dan Humaniora*, 6(1), 33-40.
- Fitriani, R., Santoso, H., & Kurniawati, I. (2019). Penggunaan Model Pembelajaran Berbasis Masalah dan Inkuiri dalam Meningkatkan Kemampuan Berpikir Kritis. *Jurnal Pendidikan Dasar Nusantara*, 4(2), 88-95.
- Handayani, R., & Suryani, I. (2022). Implementasi Teori Konstruktivisme dalam Mengembangkan Berpikir Kritis Peserta didik. *Jurnal Edukasi Inovatif*, 10(3), 145-154.
- Issa, H. B., & Khataibeh, A. (2021). The Effect of Using Project Based Learning on Improving the Critical Thinking among Upper Basic Students from Teachers' Perspectives. *Pegem Journal of Education and Instruction*, 11(2), 52-57.
- Killen, R., & O'Toole, M. (2023). *Effective teaching strategies 8e*. Cengage AU.
- Legina, N., & Sari, P. M. (2022). Pengembangan Media Pembelajaran Interaktif Articulate Storyline Berbasis Keterampilan Berpikir Kritis pada Pembelajaran IPA bagi Siswa Sekolah Dasar. *Jurnal Paedagogy*, 9(3), 375-385.
- Lestari, D., & Susilo, H. (2020). Pengembangan Keterampilan Abad 21 Melalui Pembelajaran Sains Terintegrasi Berpikir Kritis. *Jurnal Pendidikan Sains Indonesia*, 8(2), 112-118.
- Maysarah, S., Aisah, S., & Dewi, T. P. (2024). Peningkatan Kemampuan Berpikir Kritis pada Peserta didik Sekolah Dasar: Literatur review. *Jurnal Pendidikan Tematik Dikdas*, 9(2), 114-125.
- Nurhasanah, I., Ramadhan, R., & Septiani, D. (2022). Problem-Based Learning dalam Meningkatkan Berpikir Kritis Peserta didik Sekolah Dasar. *Jurnal Inovasi Pendidikan Dasar*, 9(1), 25-34.
- Putri, A. D., Saputra, W., & Herlina, N. (2021). Faktor yang Mempengaruhi Kemampuan Berpikir Kritis Peserta didik SD. *Jurnal Psikologi Pendidikan Dasar*, 3(2), 74-81.
- Rahmawati, L., Yusuf, A. M., & Zainuddin, A. (2020). Peran Guru dalam Mengembangkan Keterampilan Berpikir Kritis Peserta didik Sekolah Dasar. *Jurnal Kependidikan Dasar*, 5(2), 90-99.
- Rossi, I. V., de Lima, J. D., Sabatke, B., Nunes, M. A. F., Ramirez, G. E., & Ramirez, M. I. (2021). Active learning tools improve the learning outcomes, scientific attitude, and critical thinking in higher education: Experiences in an online course during the COVID-19 pandemic. *Biochemistry and Molecular Biology Education*, 49(6), 888-903.
- Salsabila, M., & Permana, E. (2020). Pembelajaran Inkuiri dalam Meningkatkan Kemampuan Berpikir Kritis Peserta didik Sekolah Dasar. *Jurnal Pendidikan Dasar dan Humaniora*, 7(2), 67-73.
- Sari, M. A., & Fauziah, L. (2022). Indikator dan Pengembangan Berpikir Kritis pada Anak Sekolah Dasar. *Jurnal Edukasi Anak*, 5(1), 13-21.
- Sari, T. P., Dawud, D., & Andajani, K. (2019). Hubungan kemampuan berpikir kritis dengan kemampuan menulis teks editorial siswa kelas XII. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 4(1), 51-55.
- Sutrisno, H., & Hidayati, A. (2020). Hambatan Guru dalam Mengembangkan Berpikir Kritis Peserta didik. *Jurnal Pendidikan Guru Sekolah Dasar*, 9(3), 119-127.
- Widodo, A. (2021). Penggunaan Taksonomi Bloom dalam Pembelajaran Berpikir Kritis. *Jurnal Inovasi Pendidikan Indonesia*, 3(2), 54-61.
- Yuliana, T., & Prasetyo, B. (2021). Efektivitas Diskusi dan Debat dalam Meningkatkan Berpikir Kritis Peserta didik Sekolah Dasar. *Jurnal Pendidikan Karakter SD*, 5(1), 40-49.
- Yusnaldi, E., Wibowo, S. P., & Azzahra, S. (2023). Strategi Guru dalam Meningkatkan Keterampilan Berpikir Kritis Siswa dalam Pembelajaran IPS di SD/MI. *Jurnal Pendidikan Tambusai*, 7(3), 32160-32166