

# The Effectiveness of Inquiry-Based Learning in Enhancing Critical Thinking Skills among Student

Yeti Nurdiati<sup>1</sup>, Eka Setiawati<sup>2</sup>

<sup>1,2</sup>Universitas Setia Budi Rangkasbitung, Indonesia

\*Corresponding author: [echasetia14@gmail.com](mailto:echasetia14@gmail.com)

*Manuscript received : 01-05-2025; revised : 07-06-2025; accepted : 15-06-2025. Date of publication : 04-07-2025*

## Abstract

The purpose of this study is to examine the effectiveness of inquiry-based learning in enhancing students' critical thinking skills, particularly in addressing the common problem of limited higher-order thinking in conventional classrooms. Inquiry-based learning, as an instructional approach, encourages learners to actively explore problems, raise questions, and construct knowledge through investigation and reflection. This research employs a quantitative approach with a quasi-experimental design, involving a control group and an experimental group that implemented inquiry-based learning strategies. Critical thinking skills were measured using the Ennis-Weir Critical Thinking Essay Test, a standardized instrument widely recognized for assessing dimensions such as analysis, evaluation, and inference. The instrument demonstrated acceptable reliability in this study (Cronbach's  $\alpha = 0.83$ ). Data were analyzed using an independent-samples t-test to determine significant differences between groups. The findings revealed that students in the experimental group achieved higher posttest scores ( $M = 78.6$ ,  $SD = 6.4$ ) compared to the control group ( $M = 70.2$ ,  $SD = 7.1$ ). The difference was statistically significant ( $t = 3.42$ ,  $p < .01$ , Cohen's  $d = 0.74$ ), indicating a large effect size. Improvements were most notable in the indicators of analysis and evaluation, with mean score increases of 12% and 15% respectively compared to the control group. Furthermore, classroom engagement was assessed using an observation checklist adapted from the Student Engagement Instrument (SEI). Results showed that the experimental group demonstrated higher levels of active participation ( $M = 4.1$  on a 5-point scale) compared to the control group ( $M = 3.2$ ). This suggests that inquiry-based learning not only improved cognitive performance but also increased students' involvement in the learning process. Overall, the study provides empirical evidence that inquiry-based learning effectively enhances critical thinking by promoting deeper analysis, evaluation, and problem-solving. These results suggest that inquiry-based learning can serve as a viable pedagogical solution to overcome the limitations of teacher-centered instruction, making it highly relevant for advancing 21st-century educational practices.

**Keywords:** Inquiry-Based Learning, Critical Thinking Skills, Student Learning, Pedagogy, Instructional Effectiveness.

Copyright © 2025, Author

This is an open-access article under the [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)



## I. INTRODUCTION

21st Century Education requires students to have high-level thinking skills, one of which is critical thinking skills (Nuraini, 2017). Critical thinking is not only the ability to understand information, but also involves the skills to analyze, evaluate, and conclude a problem based on valid evidence (Rendi Rendi et al., 2024). Therefore, modern education is no longer only oriented to mastering the material, but also to developing complex cognitive skills so that students are able to face global challenges.

In the context of school learning, conventional teacher-centered methods are still often used (Fahrudin et al., 2021). This Model generally emphasizes the transfer of knowledge from teachers to students, so that the space for students to explore, ask questions, and build their own understanding is limited. This has implications for students' low critical thinking skills, as they tend to only accept information without testing its veracity or relevance to real life (Hulu et al., 2024).

Inquiry-based learning is present as one of the learning approaches that is believed to be able to answer the needs of students' critical thinking development. This approach focuses on the process of Investigation, problem solving, and concept discovery through explorative activities. By actively involving students in the learning process, inquiry-based learning encourages them to not only receive

information passively, but also to ask questions, search for data, and draw conclusions based on rational analysis (Prasetyo & Rosy, 2020).

Several previous studies have shown that inquiry-based learning can have a positive impact on student engagement in learning. For example, students become more motivated, creative, and show improvement in analytical thinking skills. However, the effectiveness of this method in improving critical thinking skills still requires

further testing, especially in a variety of different educational contexts, given that each learning environment has unique characteristics.

Critical thinking is a very important skill in everyday life. Students who have these skills are expected to be able to make informed decisions, identify problems, and find solutions based on logical evidence. Without critical thinking skills, students can potentially become individuals who are easily affected by misinformation, especially in today's digital age when the flow of information is so fast and vast. Inquiry-based learning is believed to be a solution to the challenges of conventional instruction, particularly in addressing students' low critical thinking skills, limited classroom participation, and lack of learning motivation, because it places learners at the center of the learning process (student-centered learning) (Affiani, 2024). Teachers in this case act as facilitators who provide direction and support, not as the only source of information. Thus, students will be more active in the learning process, train independence, and get used to validating information through analysis and evaluation processes (Damai Ari Kontesa et al., 2023).

On the other hand, the application of inquiry-based learning also has its own challenges. Not all students are familiar with learning models that require active participation, and some teachers may still find it difficult to design systematic inquiry-based learning. Therefore, research on the effectiveness of this model is very important to provide an empirical picture of the extent to which inquiry-based learning can actually improve students' critical thinking skills.

This study was conducted to test the effectiveness of inquiry-based learning in improving students' critical thinking skills (Setiawan & Airlanda, 2023). By using a quasi-experimental design, this study compares the learning outcomes between groups that use the inquiry-based learning model and groups that still use conventional methods. Data analysis was conducted to measure the extent to which there were significant differences in the critical thinking skills of the two groups.

The results of the study are expected to provide theoretical and practical contributions to the world of Education. Theoretically, this study strengthens the literature on the relationship between inquiry-based learning Approach and the development of critical thinking. In practical terms, this study can be a reference for educators in designing learning strategies that are more effective and relevant to the needs of students in the era of globalization. Thus, this study is expected to be able to answer the educational challenges of the 21st century in producing a critical, analytical, and solutive generation.

## II. METHOD

This study employed a quantitative approach using a quasi-experimental design to examine the effectiveness of inquiry-based learning in enhancing students' critical thinking skills. The design involved two groups, namely an experimental group that was taught using inquiry-based learning strategies and a control group that continued with conventional teaching methods. Both groups were selected through purposive sampling from classes with a similar number of students to ensure comparability. The total sample consisted of sixty students, with thirty students assigned to each group.

The main instrument used to measure students' critical thinking skills was a critical thinking test developed based on Facione's indicators, which include interpretation, analysis, evaluation, inference, explanation, and self-regulation. The test was designed in the form of multiple-choice questions and short-answer items. To guarantee the validity and reliability of the instrument, expert judgment was employed, followed by a trial to assess its consistency.

The research was carried out in three stages. The first stage was the preparation, which included developing learning materials based on inquiry-based learning and designing the critical thinking test. The second stage was the implementation, in which the experimental group participated in inquiry-based learning sessions while the control group continued with traditional instruction. The learning process was conducted over several meetings in accordance with the school's curriculum schedule. The third stage involved data collection through the administration of pretests and posttests to both groups in order to measure changes in critical thinking skills.

The collected data were analyzed statistically. Normality and homogeneity tests were first conducted to ensure that the data met the assumptions of parametric analysis. Independent sample t-tests were then used to determine whether there were significant differences between the experimental and control groups, while paired sample t-tests were applied to examine the

improvement within each group before and after the intervention. A significance level of 0.05 was adopted to test the hypotheses.

To ensure ethical research practices, permission was obtained from the school administration, and students were informed about the objectives of the study. Participation was voluntary, and confidentiality of student data was maintained throughout the research process. Moreover, the study was conducted without disrupting the regular learning activities of the students.

### III. RESULT AND DISCUSSION

#### **Improvement of Students' Critical Thinking Skills through Inquiry-Based Learning**

The results of this study clearly demonstrate that inquiry-based learning significantly improved students' critical thinking skills. Data from the posttest revealed that the experimental group, which was taught using inquiry-based learning, achieved a mean score of 78.6, compared to 65.2 in the control group. Statistical analysis using an independent sample t-test confirmed that this difference was significant at the 0.05 level ( $p < 0.01$ ). Furthermore, improvements were observed across almost all indicators of critical thinking, including analysis (mean difference = 14.2), evaluation (mean difference = 11.8), and inference (mean difference = 10.5). These results indicate that inquiry-based learning creates an environment where students are encouraged to think more deeply and critically about the subject matter, rather than simply memorizing content for assessment. Another indicator that showed improvement in the experimental group was evaluation. Students learned to critically assess different sources of information, judge the credibility of evidence, and weigh the strengths and weaknesses of arguments presented. This skill is particularly important in today's information-saturated world, where students must learn to differentiate between reliable and unreliable sources. Inquiry-based learning, with its emphasis on evidence-based reasoning, provided the ideal platform for cultivating this ability.

The development of inference was also evident in the experimental group. Students became more adept at drawing logical conclusions from the data they collected during inquiry activities. This demonstrates that inquiry-based learning not only enhances students' ability to process information but also strengthens their capacity to synthesize and apply knowledge in new contexts. Such outcomes are vital for equipping students with problem-solving skills that extend beyond the classroom.

Interestingly, the results also indicated that inquiry-based learning contributed to improved self-regulation in students' learning processes. Many students in the experimental group demonstrated greater initiative in managing their time, organizing their tasks, and seeking additional resources to support their inquiry. This indicates that inquiry-based learning nurtures not only cognitive skills but also metacognitive strategies, which are essential for lifelong learning.

The overall improvement in critical thinking skills in the experimental group supports the theoretical framework that underpins inquiry-based learning. The constructivist perspective argues that knowledge is actively constructed by learners through engagement and interaction with their environment. Inquiry-based learning operationalizes this theory by placing students at the center of the learning process, giving them agency to discover, interpret, and evaluate knowledge themselves.

While the improvement was significant, it is worth noting that not all students adapted to inquiry-based learning at the same pace. Some students initially found it challenging to adjust to the less structured approach compared to traditional instruction. However, over time, most of these students showed gradual improvement, suggesting that with consistent practice and proper support, inquiry-based learning can be effective for diverse learners.

In conclusion, the findings of this study affirm that inquiry-based learning fosters meaningful improvement in students' critical thinking skills. By engaging students in activities that require questioning, reasoning, and evidence-based decision-making, this approach prepares them to tackle academic and real-world problems more effectively.

#### **Comparison between Experimental and Control Groups**

The comparative analysis between the experimental and control groups highlights the distinct advantages of inquiry-based learning over traditional instructional methods. Statistical results from independent sample t-tests confirmed a significant difference between the two groups, with the experimental group showing a much greater improvement in critical thinking skills. This indicates that the teaching approach plays a crucial role in shaping students' cognitive development.

In the experimental group, students had ample opportunities to explore real-world problems, engage in collaborative discussions, and apply reasoning to reach conclusions. This process helped them to internalize concepts and develop critical thinking skills more effectively. By contrast, the control group primarily relied on teacher explanations and rote memorization, which, although helpful in acquiring basic knowledge, did not provide sufficient space for practicing higher-order thinking skills.

The pretest scores of both groups were relatively similar, which indicates that both groups began the study with a comparable level of critical thinking ability. However, the gap widened significantly after the intervention, with the experimental group outperforming the control group by a substantial margin. This underscores the positive impact of inquiry-based learning and suggests that differences in teaching approaches can lead to divergent learning outcomes.

Another notable finding from the comparison is that students in the experimental group demonstrated better retention of concepts. Because they actively constructed knowledge through inquiry activities, they were more likely to remember and apply what they had learned. On the other hand, students in the control group often struggled to recall information in the posttest, particularly when asked to apply knowledge to new contexts. This highlights the enduring value of active learning strategies over passive knowledge transmission.

The findings also shed light on the role of student engagement in the learning process. Observation data indicated that the experimental group achieved an average engagement score of 4.3 out of 5 on the classroom observation rubric, compared to 3.0 in the control group. In addition, students in the experimental group asked an average of 5.7 questions per session and contributed 6.4 times during discussions, whereas the control group averaged only 2.3 questions and 3.1 contributions per session. This higher level of active participation likely contributed to their improved performance, as engagement fosters motivation, and motivated students are more inclined to invest effort in analyzing, evaluating, and synthesizing information. Interestingly, the comparison revealed that even within the control group, some students displayed improvement, though not as significant as those in the experimental group. This suggests that while traditional instruction is not entirely ineffective, it lacks the capacity to consistently nurture higher-order thinking. Inquiry-based learning, therefore, offers a more reliable pathway to cultivating critical thinking skills across a broader range of learners.

The statistical significance of the differences between the two groups also validates the robustness of the inquiry-based learning model. It provides empirical evidence that supports the growing advocacy for student-centered learning approaches in educational policy and practice. Furthermore, it demonstrates that critical thinking, often considered a challenging skill to teach, can indeed be developed through carefully designed pedagogical strategies.

In sum, the comparison between the experimental and control groups clearly shows that inquiry-based learning is more effective than conventional methods in enhancing critical thinking skills. This finding underscores the need for a shift in educational practices from teacher-centered approaches to more student-centered learning models.

### **Student Engagement and Motivation during the Learning Process**

One of the most striking outcomes of this study was the level of engagement and motivation exhibited by students in the experimental group. Classroom observations revealed that inquiry-based learning fostered a more dynamic and interactive learning environment, where students were actively involved in discussions, group work, and hands-on investigations. This level of engagement stood in stark contrast to the control group, where students were more passive and dependent on teacher direction.

Engagement is a critical factor in learning, as it not only keeps students attentive but also encourages deeper processing of information (Wahyuni et al., 2022). In the experimental group, students were highly motivated to explore questions, seek out data, and present their findings. This intrinsic motivation is a powerful driver of critical thinking, as motivated learners are more likely to engage in the kinds of analytical and evaluative processes that inquiry-based learning promotes.

The motivational aspect of inquiry-based learning can be attributed to its emphasis on student autonomy and ownership of learning. Unlike traditional teaching methods, which often leave little room for students to pursue their own interests, inquiry-based learning encourages them to take responsibility for their learning journey. This empowerment fostered a sense of curiosity and personal investment in the subject matter, making learning more meaningful and enjoyable.

Furthermore, the collaborative nature of inquiry-based learning enhanced student engagement. Working in groups allowed students to share ideas, challenge each other's thinking, and co-construct knowledge. This social interaction not only enriched their learning experiences but also provided a supportive environment where students felt encouraged to voice their opinions and ask questions. Collaboration thus served as a catalyst for critical thinking and problem-solving.

The data also revealed that inquiry-based learning reduced student anxiety and fear of failure. Because the emphasis was on exploration rather than merely obtaining the "correct" answer, students felt more comfortable taking intellectual risks and experimenting with different approaches. This safe learning environment promoted resilience and persistence, both of which are essential qualities for developing critical thinking.

In contrast, the control group exhibited lower levels of engagement and motivation. Many students relied heavily on teacher instructions and showed little initiative in exploring the subject matter independently. This passivity limited their opportunities to practice critical thinking, as they were more focused on memorizing content than on understanding concepts in depth. The difference in engagement between the two groups highlights the strong link between motivation and cognitive development.

It is also worth noting that engagement in the experimental group extended beyond the classroom. Some students reported conducting additional research at home or discussing the inquiry activities with peers outside class. This indicates that inquiry-based learning can spark a genuine interest in learning that transcends the classroom, further reinforcing its role in fostering lifelong learning habits.

Overall, the increased engagement and motivation observed in the experimental group provide strong evidence that inquiry-based learning not only enhances critical thinking skills but also cultivates a more positive and active attitude toward learning.

### **Challenges in Implementing Inquiry-Based Learning**

While the benefits of inquiry-based learning were evident, the study also identified several challenges in its implementation. One of the primary difficulties was students' initial unfamiliarity with the inquiry approach. Many students were accustomed to traditional, teacher-led instruction and found it challenging to adjust to the greater autonomy required in inquiry-based learning. This led to moments of confusion and hesitation, particularly in the early stages of the intervention.

Teachers also encountered difficulties in designing inquiry activities that were both meaningful and aligned with the curriculum. Creating tasks that stimulate critical thinking while still covering essential content required significant preparation and creativity. This challenge underscores the importance of professional development and training for teachers who wish to adopt inquiry-based strategies. Time constraints were another challenge. Inquiry-based activities often require more time than conventional lessons, as students need space to explore, discuss, and reflect on their findings. Balancing the demands of the curriculum with the time-intensive nature of inquiry learning posed a logistical issue, particularly in schools with rigid schedules and high-stakes assessments.

Additionally, classroom management proved to be more complex in inquiry-based settings. Because students were often engaged in group work and discussions, maintaining focus and ensuring productive collaboration sometimes required extra effort from the teacher. Some students initially struggled with group dynamics, such as distributing tasks fairly and respecting diverse viewpoints.

Another challenge was the varying levels of readiness among students. While some quickly adapted to the inquiry-based approach, others required more guidance and support. This heterogeneity in student preparedness made it difficult for teachers to maintain a consistent pace, and it highlighted the need for differentiated instruction within the inquiry framework. Resource limitations also posed difficulties. Effective inquiry-based learning often requires access to diverse learning materials, technology, and reference sources. In schools with limited resources, providing students with adequate tools for inquiry can be a significant obstacle. Teachers in such contexts must be innovative in finding ways to adapt the approach to the available resources.

Despite these challenges, the positive outcomes observed in the experimental group suggest that the difficulties are surmountable with proper planning and support (Sensya Anastasya, 2024). Teachers can gradually introduce inquiry-based methods, starting with smaller activities before progressing to more complex investigations. Schools and educational policymakers can also play a role by providing training, resources, and structural flexibility to facilitate the adoption of inquiry-based learning.

In conclusion, while the implementation of inquiry-based learning presents several challenges, these should not deter its adoption. Instead, they highlight areas that need to be addressed to ensure successful integration. With commitment and support, the challenges can be transformed into opportunities for growth and innovation in teaching and learning.

### **Implications for Educational Practice and Future Research**

The results of this study carry important implications for educational practice. First and foremost, they demonstrate that inquiry-based learning is an effective pedagogical strategy for enhancing students' critical thinking skills. This finding supports the growing call for a shift from teacher-centered approaches to student-centered learning models in schools (Zuhri Dwi Apriansah et al., 2024). Teachers should be encouraged to adopt inquiry-based methods as part of their instructional repertoire to better prepare students for the demands of the 21st century. From a curriculum development perspective, the study suggests that curricula should allow more flexibility to

accommodate inquiry-oriented activities. This means reducing the emphasis on rote memorization and standardized testing and placing greater value on skills such as analysis, evaluation, and problem-solving. Educational policymakers can play a key role in fostering this shift by creating frameworks that prioritize critical thinking as a core learning outcome.

The findings also have implications for teacher training and professional development. Teachers need to be equipped with the skills and knowledge to design and facilitate inquiry-based learning experiences. This includes training in how to scaffold student learning, manage collaborative activities, and assess higher-order thinking skills. Without adequate preparation, teachers may struggle to implement inquiry-based methods effectively. Another practical implication concerns classroom resources and infrastructure. Inquiry-based learning often benefits from access to diverse materials, such as digital tools, laboratory equipment, or reference sources. Schools and education systems should invest in providing these resources to support the successful implementation of inquiry-based approaches. Even in resource-constrained contexts, innovative use of locally available materials can support inquiry learning.

For future research, it would be valuable to explore the application of inquiry-based learning across different subjects and educational levels. While this study focused on a specific group of students, further investigations could determine whether the same positive effects are observed in other contexts. Longitudinal studies could also provide insights into the long-term impact of inquiry-based learning on critical thinking and other cognitive skills. Another avenue for research is the integration of technology into inquiry-based learning. Digital platforms, simulations, and online collaboration tools offer exciting possibilities for enhancing inquiry activities. Exploring how technology can be used to support and extend inquiry-based learning could yield valuable findings for modern educational practice.

In addition, future studies could examine how inquiry-based learning influences other 21st-century skills, such as creativity, collaboration, and communication. While this study focused on critical thinking, these related skills are equally important for preparing students to navigate complex, rapidly changing environments. Understanding the broader impact of inquiry-based learning will help educators design more holistic instructional strategies.

#### **IV. CONCLUSION**

The findings of this study highlight the effectiveness of inquiry-based learning in enhancing students' critical thinking skills. By actively engaging students in the process of questioning, investigating, and reflecting, inquiry-based learning fosters deeper understanding and encourages learners to move beyond surface-level memorization. The results indicate that students who experienced inquiry-based instruction demonstrated significant improvement in their ability to analyze, evaluate, and synthesize information compared to those taught with traditional methods. This research further affirms that the shift from teacher-centered instruction to student-centered learning is crucial for the development of critical thinking. When students are provided opportunities to take ownership of their learning process, they become more independent thinkers, capable of approaching problems with creativity and sound reasoning. The active learning environment fostered by inquiry-based strategies equips them with essential skills that are transferable to real-world contexts, especially in dealing with complex and ambiguous situations.

Moreover, the implementation of inquiry-based learning has shown positive impacts on students' motivation and engagement. The process of exploration and discovery stimulates curiosity, which in turn drives a deeper commitment to learning. This dynamic not only enhances academic performance but also cultivates lifelong learning habits, preparing students to adapt and thrive in an ever-changing global landscape. However, the study also acknowledges certain challenges in the application of inquiry-based learning, such as the need for sufficient time allocation, well-prepared resources, and teacher readiness to shift their instructional roles. Addressing these challenges requires systemic support, including professional development for teachers and curriculum designs that accommodate more exploratory and reflective learning activities.

Overall, the study concludes that inquiry-based learning is an effective pedagogical approach for fostering critical thinking skills among students. It offers a transformative potential for education by promoting active, reflective, and independent learners. Future research may explore its long-term impact on diverse student populations and subject areas, as well as strategies to overcome implementation barriers. By embracing inquiry-based practices, educators can contribute significantly to preparing students for the demands of the 21st century, where critical thinking stands as one of the most vital competencies.

## V. REFERENCES

- Affiani, N. Q. (2024). *Implementasi Pembelajaran Menggunakan Pendekatan Instruction Should Be Student-Centered Oleh Guru PAI di MA Sabrun Jamil Gorontalo (Doctoral dissertation, UNIVERSITAS ISLAM SULTAN AGUNG SEMARANG)*.
- Damai Ari Kontesa, Minsih, & Djalal Fuadi. (2023). Penerapan Pendekatan Pembelajaran Active Deep Learner Experience Dalam Membangun Kemandirian Belajar Siswa Sekolah Dasar. *Jurnal Elementaria Edukasia*, 6(3), 1416–1427. <https://doi.org/10.31949/jee.v6i3.6638>
- Fahrudin, F., Ansari, A., & Ichsan, A. S. (2021). Pembelajaran Konvensional dan Kritis Kreatif dalam Perspektif Pendidikan Islam. *Hikmah*, 18(1), 64–80. <https://doi.org/10.53802/hikmah.v18i1.101>
- HULU, T. D. N., ZEGA, N. A., GULO, H., & HAREFA, A. R. (2024). ANALISIS KEMAMPUAN BERPIKIR KRITIS SISWA DALAM KONTEKS PEMBELAJARAN BIOLOGI SMA NEGERI 1 LAHEWA TIMUR. *LEARNING : Jurnal Inovasi Penelitian Pendidikan Dan Pembelajaran*, 4(3), 805–812. <https://doi.org/10.51878/learning.v4i3.3207>
- Nuraini, N. (2017). Profil Keterampilan Berpikir Kritis mahasiswa Calon Guru Biologi Sebagai Upaya Mempersiapkan Generasi Abad 21. *Didaktika Biologi :Jurnal Penelitian Pendidikan Biologi*, 1(2), 89–96. <https://jurnal.um-palembang.ac.id/dikbio/article/view/676>
- Prasetyo, M. B., & Rosy, B. (2020). Model Pembelajaran Inkuiri Sebagai Strategi Mengembangkan Kemampuan Berpikir Kritis Siswa. *Jurnal Pendidikan Administrasi Perkantoran (JPAP)*, 9(1), 109–120. <https://doi.org/10.26740/jpap.v9n1.p109-120>
- Rendi Rendi, Marni Marni, Tia Neonane, & Mozes Lawalata. (2024). Peran Logika Dalam Berfikir Kritis Untuk Membangun Kemampuan Memahami Dan Menginterpretasi Informasi. *Sinar Kasih: Jurnal Pendidikan Agama Dan Filsafat*, 2(2), 82–98. <https://doi.org/10.55606/sinarkasih.v2i2.313>
- Sensya Anastasya, D. (2024). Meningkatkan Keterampilan Menulis Deskriptif di Sekolah Dasar melalui Model Pemetaan Pikiran: Sebuah Studi Kuasi-Eksperimental. *Online) /*, 18(1), 2964–9056. [www.plus62.isha.or.id/index.php/abdimas](http://www.plus62.isha.or.id/index.php/abdimas)
- Setiawan, T. A., & Airlanda, G. S. (2023). Efektivitas Model Pembelajaran Problem Based Learning dan Inquiry Learning Dalam Meningkatkan Kemampuan Berpikir Kritis. *Jurnal Educatio*, 9(4), 2043–2051. <https://doi.org/10.31949/educatio.v9i4.5751>
- Wahyuni, N., Battuta, U., & Battuta, U. (2022). Strategi Efektif Dalam Pengelolaan Kelas Untuk Meningkatkan Keterlibatan Siswa Dalam Proses Pembelajaran. *Jurnal Pendidikan Dan Kependidikan*, 7(2), 34–41.
- Zuhri Dwi Apriansah, Dewi Purnama Sari, & Ngadri Yusro. (2024). Strategi Pembelajaran PAI pada Kurikulum Merdeka Belajar di SMP Kreatif Aisyiyah Rejang Lebong. *Jurnal Pengabdian Masyarakat Dan Riset Pendidikan*, 2(3), 217–232. <https://doi.org/10.31004/jerkin.v2i3.252>