

The Implementation of Project-Based Learning to Improve Students

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Abstract

A common problem in English learning is students' poor reading skills due to a lack of motivation, limited vocabulary, and inadequate teaching methods. This results in low student learning outcomes, necessitating teachers to employ learning models such as Project-Based Learning (PjBL). The application of PjBL as a pedagogical strategy to improve student engagement, creativity, critical thinking, and academic achievement. This study was conducted at MA Sultan Hadlirin involving 23 grade X students. This study used a quantitative approach with a one-group pretest-posttest design. The results of the analysis showed that the sig value (2-tailed) was 0.000 which was lower than 0.05. This shows a significant increase between learning outcomes before and after using the PjBL model. So it can be concluded that the use of the PjBL model can improve student learning outcomes. Therefore, the PjBL model has proven to be a useful method in improving student learning outcomes effectively.

Keywords: *Implementation, Project-Based Learning, Learning Outcomes*

Abstrak

Permasalahan yang sering terjadi dalam pembelajaran bahasa Inggris adalah rendahnya kemampuan membaca siswa akibat kurangnya motivasi, terbatasnya kosakata serta model pembelajaran. Hal ini mengakibatkan hasil belajar siswa menjadi rendah sehingga guru memerlukan model pembelajaran seperti *Project-Based Learning* (PjBL). Penerapan PjBL sebagai strategi pedagogis untuk meningkatkan keterlibatan siswa, kreativitas, pemikiran kritis, dan prestasi akademik. Penelitian ini dilakukan di MA Sultan Hadlirin dengan melibatkan 23 siswa kelas X. Penelitian ini menggunakan pendekatan kuantitatif dengan desain one-group pretest-posttest. Hasil analisis menunjukkan nilai sig (2-tailed) sebesar 0,000 yang lebih rendah dari 0,05. Hal ini menunjukkan adanya peningkatan yang signifikan antara hasil belajar sebelum dan sesudah menggunakan model PjBL. Maka dapat disimpulkan bahwa penggunaan model PjBL dapat meningkatkan hasil belajar siswa. Oleh karena itu, model PjBL terbukti menjadi metode yang bermanfaat dalam meningkatkan hasil belajar siswa secara efektif.

Kata kunci: *Implementasi, Project-Based Learning, Hasil Belajar*

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INTRODUCTION

Education is a planned and deliberate process designed to create a learning environment that enables students to develop their spiritual, intellectual, and social potential. As time goes by, learning demands that teachers play a role not only as transmitters of information but also as facilitators capable of utilizing technology effectively. In this context, learning must be tailored to the needs and characteristics of 21st-century students who are familiar with digital technology. (Sari & Handini, 2025)

In addition to being the century of information technology, the 21st century is also known as the knowledge century, the industrial revolution 4.0, the age of the knowledge-based economy, and globalization. This century is a time of rapid change that is hard to forecast in every area of life. Human abilities will change from manual labor to cognitive (brain) skills (Khoerunnisa & Illahi, 2023). Traditional educational paradigms that prioritize rote memorization and passive learning are increasingly deemed insufficient in fostering the complex competencies that students now need. The shift from manual labor and routine cognitive tasks to creative, critical, and collaborative intellectual engagement necessitates an urgent transformation in how learning is delivered and internalized in modern classrooms (Golegou & Peppas, 2025).

Reading is one of the essential language skills that plays a critical role in supporting students' academic success and personal development (Balansag, 2025). In the 21st century, reading ability is not only needed to understand printed texts but also to access, evaluate, and synthesize information from diverse digital sources. Strong reading skills empower students to learn independently, broaden their knowledge, and develop critical thinking skills, which are vital in facing global challenges (Kokcu, 2023).

This global transition signals the importance of implementing student-centered, innovative learning models that provide learners with meaningful and engaging experiences. A fundamental principle of modern education is to provide students with broad opportunities to fully develop their potential, thereby enhancing the overall quality of education (Zitha et al., 2023). Improving the effectiveness of classroom learning largely depends on the teacher's ability to select and apply appropriate approaches, models, methods, media, and instructional strategies. These decisions should take into account the diverse characteristics of students, including their readiness to learn, learning interests, and individual learning profiles (Darling-Hammond et al., 2020).

However, many students still struggle with reading comprehension, vocabulary mastery, and motivation to read extensively (Wae & Herwin, 2025). In Indonesia, the low reading interest among students is a persisting issue that hinders language learning outcomes, especially in English as a Foreign Language (EFL) contexts. Limited exposure to authentic reading materials and the dominance of teacher-centered methods contribute to this challenge (Nadhira & Warni, 2021).

In light of these changes, there is a growing consensus that education should not only focus on knowledge acquisition but also on the development of soft skills such as communication, collaboration, creativity, and adaptability (Inyatun Nisa, 2025). These competencies are essential in enabling students to respond effectively to complex and unpredictable challenges in their personal, academic, and future professional lives. Accordingly, educators are called to rethink instructional approaches that can cultivate these competencies in a more meaningful, relevant, and student-driven manner (Sujarwo et al., 2022).

As educational challenges become more complex, there is also increasing emphasis on creating learning environments that not only build academic knowledge but also promote autonomy and lifelong learning habits. Students must be equipped not only with information but with the ability to seek out, process, and apply knowledge independently and collaboratively (Chan, 2019). In this context, instructional models such as PjBL offer a strategic response, as they allow learners to take ownership of their

education through exploration, experimentation, and reflection. By fostering learner agency, PjBL helps bridge the gap between school-based learning and real-world problem-solving demands, ensuring that students are better prepared for both academic and non-academic futures (Adeline, 2024).

Based on preliminary observations at MA Sultan Hadlirin, students tend to be passive during reading activities and rely heavily on teachers' explanations. Many students face difficulties in understanding English texts due to limited vocabulary and lack of reading strategies. Consequently, students' reading scores are relatively low compared to other language skills. This situation indicates the need for an alternative learning approach that can actively engage students in reading tasks and improve their comprehension skills.

In Indonesia, English functions as a foreign language and is rarely used as a means of daily communication. Typically, its use is limited to classroom settings and specific requirements such as proficiency tests (Prasetya, 2024). As a mandatory subject across all educational levels, English is taught to students for a minimum of six years, particularly during junior and senior high school. Recognizing the limited time allocated for English instruction, a well-regarded junior high school in Indonesia has taken the initiative to offer an additional speaking class alongside the regular English curriculum. This class aims to enhance students' speaking abilities through the implementation of Project-Based Learning (Maransha Andrean & Ernati, 2023).

While curriculum reform in Indonesia has begun to emphasize competency-based learning, many schools and universities still rely heavily on teacher-centered instruction. This gap between policy and classroom practice indicates a need for more systemic integration of pedagogical models that promote active student involvement (Mustofa et al., 2025). Project-based learning (PjBL), when implemented properly, can bridge this gap by aligning with national education goals and providing a flexible framework for interdisciplinary and contextualized learning experiences (Emawati et al., 2024).

Project-Based Learning (PjBL) is an instructional approach that organizes learning around projects that require students to engage in investigation, problem-solving, and the creation of meaningful products (Agung et al., 2025). PjBL emphasizes student-centered learning, collaboration, critical thinking, and real-world relevance. In language learning, PjBL can be used to integrate reading, writing, speaking, and listening through purposeful projects that motivate students to use English authentically (Putimasurai et al., 2024).

The current problem is the lack of response from higher education institutions in responding to the existing potential, so that students are not facilitated to develop students in the integration of digital products in learning, especially in critical and creative thinking skills. Based on initial observations, learning in the Early Childhood Education Teacher Education Study Program has not led to the stimulation and optimization, especially in creative thinking skills (Sope & Murtono, 2024). Lecturers also have not maximized the integration of digital products in developing learning media. Existing learning is only limited to encouraging students to understand the basic conception and its application. Teaching tends to revolve around theoretical content and foundational concepts, with minimal application to real-world contexts. As a result, students are not sufficiently encouraged to develop problem-solving skills or to engage deeply with the material they are studying (Laghari, 2024). One way to support the development of students' digital literacy is through the use of project-based learning. This teaching method involves students in practical projects or tasks, enabling them to connect theoretical concepts with real-life applications. By engaging directly in the learning process through project work, students gain a deeper grasp of the subject, while also improving their problem-solving abilities and collaboration skills. Project-based learning

has been widely acknowledged in education for its ability to foster comprehensive learning and equip students with the skills needed to face modern workforce demands (Eka Sastrawati et al., 2025).

Previous studies have demonstrated that PjBL has positive impacts on students' language skills, critical thinking, and motivation. Combining PjBL with digital tools can create engaging learning experiences that improve students' participation and performance. However, most studies have focused on speaking and writing skills rather than reading (Imbaquingo & Cárdenas, 2023).

Despite the benefits reported, there is still limited research exploring the use of PjBL specifically to enhance reading skills in EFL contexts, especially in senior high schools in Indonesia (Saputra et al., 2025). Therefore, this study aims to fill this gap by implementing PjBL to improve students' reading abilities at MA Sultan Hadlirin.

This study aims to investigate whether the implementation of Project-Based Learning (PjBL) can significantly improve student learning outcomes through reading comprehension skills and student engagement in English learning at MA Sultan Hadlirin. Therefore, the problem formulation in this study is how the implementation of Project-Based Learning (PjBL) can improve student learning outcomes through reading comprehension skills and student engagement in English learning at MA Sultan Hadlirin.

To genuinely harness the transformative potential of project-based learning, a more comprehensive and contextual approach is necessary one that examines not only its cognitive impact but also its role in shaping the overall development of students. Such an approach must also take into account the realities faced by educators and institutions in adopting innovative teaching practices (Tuti Isnani, 2024). By expanding research and practice in these directions, education systems can ensure that PjBL is not merely a trend, but a meaningful strategy to improve student learning and prepare future generations for the complexities of a globalized digital society (Prahani et al., 2024).

In conclusion, the implementation of PjBL is expected to be an effective solution to overcome the challenges faced by students in reading activities. By involving students in meaningful projects, this approach has the potential to foster deeper understanding, increase motivation, and enhance students' overall English proficiency.

METHODS

This study used a quantitative approach with a one-group pretest-posttest design to evaluate the implementation of the PjBL learning model on student learning outcomes (Rukminingsih et al., 2020). The study was conducted at MA Sultan Hadlirin in May 2025. The sample consisted of all tenth-grade students at MA Sultan Hadlirin. The instruments used in this study were multiple-choice and essay tests. These tests measured student learning outcomes, including indicators of interpretation, analysis, and evaluation based on Anderson's taxonomy criteria.

This study consisted of two stages that is a pretest administered before the implementation of the PjBL learning model and a posttest administered after the implementation of the PjBL learning model. Learning activities were conducted over three meetings. Data collection involved administering written tests at the beginning and end of the learning process.

In this study, data analysis was conducted using a hypothesis test, namely the Paired Sample T-Test (Afifah, 2022). This test was conducted to determine the effectiveness of the PjBL learning model in improving student learning outcomes.

RESULT AND DISCUSSION

Research Result

This study aims to test the application of the PjBL learning model in improving student learning outcomes. Before the application of the PjBL learning model, students

were given an initial test (pretest). After the application of the PjBL learning model, students took the same test (posttest). The average learning outcomes of the pretest and posttest can be seen in the following table.

Table 1. Average Score of Pretest and Posttest

Category	Pretest	Posttest
Average Score	59	86
Number of Students	23	23

Based on the table above, the average score of the pretest is 59 and the average score of the posttest is 86. This shows a significant increase between the learning outcomes of the pretest and posttest.

Table 2. Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		23
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	5.38711231
Most Extreme Differences	Absolute	.221
	Positive	.221
	Negative	-.154
Test Statistic		.221
Asymp. Sig. (2-tailed)		.200 ^c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Based on the table above, it can be seen that the significance value obtained is 0.200, while the α value is 0.05, meaning the significance value $> \alpha$ or $0.200 > 0.05$. Therefore, it can be concluded that the data is normally distributed.

Table 3. Homogeneity Test

Test of Homogeneity of Variances			
Hasilbelajar			
Levene Statistic	df1	df2	Sig.
.268	1	44	.607

Based on the table above, it can be seen that the significance value obtained is 0.607 while the α value is 0.05, which means the significance value is > 0.05 or $0.607 > 0.05$. Therefore, it can be concluded that the data distribution is homogeneous.

Table 4. Paired Sample T-Test Results

Paired Samples Test									
		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	PRETEST - POSTTEST	-26.52174	6.47281	1.34967	-29.32079	-23.72269	-19.650	22	.000

Based on the table above, the significance value (2-tailed) is 0.000 and the α value is 0.05, which means the significance value <0.05 or $0.000 < 0.05$. The decision making is that H_a is accepted and H_0 is rejected. So it can be concluded that the application of the PjBL learning model is very effective in improving student learning outcomes.

So it can be concluded that the use of the PjBL model is very effective in improving student abilities and improving student learning outcomes in class.

Discussion

The use of the PjBL learning model is highly effective in improving student learning outcomes. After implementing the PjBL learning model, students' average scores increased from 59 on the pretest to 86 on the posttest. This indicates that the PjBL learning model is highly effective in improving student learning outcomes, particularly in reading comprehension skills.

These results demonstrate that the PjBL approach provides students with deeper engagement and authentic learning opportunities, which positively impacts their reading skills. Through PjBL, students are not only asked to passively read texts but also actively engage in planning, researching, drafting, revising, and presenting projects that require them to deeply understand, analyze, and interpret reading materials. This process enriches their understanding and strengthens their reading comprehension strategies.

Collaboration also plays a crucial role during the learning process. Students work collaboratively in teams, exchanging feedback and participating in peer discussions based on the texts they read and conducting collaborative analyses. These interactions foster their communication and teamwork skills, increasing their confidence in explaining and presenting the information they have gathered through reading assignments. Through this social aspect of learning, students experience the value of collaboration and peer support, which contributes to a more inclusive and motivating classroom environment.

Research conducted by (Mayang Jingga et al., 2024) showed significant improvements in student learning outcomes in reading comprehension after using the Project-Based Learning (PjBL) learning model. Teachers act as mentors, providing reading materials, guiding students in analyzing texts, providing instructions, feedback, and motivating them. This can transform teacher-centered learning into a more student-centered learning experience. Teachers can implement Project-Based Learning (PjBL) effectively by developing skills in curriculum design, selecting relevant reading texts, and conducting assessments using techniques that support active learning.

Related to this research, research by (Mulia, 2023) showed that project-based learning in physical education helped students improve their skills. Furthermore, student motivation was enhanced in project-based learning because they had to produce a high-quality product. In developing time management and problem-solving, students had to meet deadlines, divide responsibilities among team members, find and interpret appropriate reading sources, and overcome obstacles during project implementation.

The implementation of Project-Based Learning (PjBL) can improve the learning process and student learning outcomes. Therefore, teachers must increase their knowledge of PjBL and develop skills in applying it in classroom learning (Daga et al., 2025). The effectiveness of PjBL aligns with the principles of constructivist learning, which states that students construct knowledge best when they are actively involved in the learning process. By engaging students in contextual reading and project assignments, PjBL creates a framework that supports meaningful knowledge construction (Kurniawan, 2025).

Essentially, implementing Project-Based Learning (PjBL) requires careful planning and the participation and support of all parties involved. Student reading

performance through PjBL demonstrates that learners benefit from an interdisciplinary learning approach. Reading is not taught in isolation but is integrated with research, design, critical thinking, and communication tasks. This makes students more adaptable and prepared to face complex, real-life tasks that require strong reading skills (Tamsiyati et al., 2024).

This study supports the finding that Project-Based Learning at MA Sultan Hadlirin is successful in improving student learning outcomes through reading comprehension skills. Furthermore, PjBL also develops critical thinking, creativity, collaboration, and digital literacy skills. Teachers must facilitate the learning process by providing clear guidance, setting specific goals, and providing necessary resources.

It can be concluded that PjBL is a successful method in improving student learning outcomes. This is evident in the significant impact of student learning outcomes on reading performance. This approach encourages student-centered reading activities, deeper engagement, and active participation. Through PjBL, students are motivated and provided with the emotional and material support necessary for project success.

CONCLUSION

The implementation of the Project-Based Learning (PjBL) model has proven highly effective in improving student learning outcomes. This is evident from the pretest and posttest results, which showed an increase in average scores from 59 to 86. Data analysis showed a significance value (2-tailed) of $0.000 < 0.005$. Thus, it can be concluded that the PjBL learning model is highly effective in improving student learning outcomes.

The implementation of PjBL also creates more active, collaborative, and contextual learning, where students are directly involved in designing, researching, and presenting projects that deepen their understanding of reading texts. PjBL also requires students to be prepared to manage their time, find relevant reading sources, and work in teams, which are not always easy for all students. Therefore, the implementation of the PjBL model is expected to be an effective solution for improving the quality of learning. Future research is recommended to involve more participants, conduct longitudinal studies to measure long-term impacts, and explore the implementation of PjBL across various subjects to strengthen the validity and replicability of the results.

REFERENCE

- Adeline, W. D. (2024). The Impact of Project-Based Learning on Developing Critical Thinking and Problem-Solving Skills. *Research Output Journal of Education*, 51–56.
- Afifah, S. (2022). *IJOTIS How to Calculate Paired Sample t -Test using SPSS Software : From Step-by-Step Processing for Users to the Practical Examples in the Analysis of the Effect of Application Anti-Fire Bamboo Teaching Materials on*. 2(1), 81–92.
- Agung, A. A. I., Sudiatmika, R., Pujani, N. M., & Juniartina, P. P. (2025). Project-Based Learning Model in Improving Students' Learning Outcomes in Integrated Science Classroom. *Pegem Journal of Education and Instruction*, 15(1), 82–92. <https://doi.org/10.47750/pegegog.15.01.08>
- Balansag, J. P. (2025). Reading Performance as a Predictor of Academic Success of Key Stage 2 Learners. *International Journal of Research and Innovation in Social Science*, IX(IIIS), 1932–1949.
- Chan, H. W. (2019). Promoting Autonomous, Collaborative English learning Practices and Fostering Greater Learner Autonomy among Secondary Students in Hong Kong. *Asian Journal of Education and E-Learning*, 7(1), 22–28. <https://doi.org/10.24203/ajeel.v7i1.5664>
- Daga, A. T., Heli, M. H., & Lende, P. (2025). Pembelajaran Berbasis Proyek dalam

- Pembelajaran Ilmu Pengetahuan Alam untuk Meningkatkan Hasil Belajar Siswa. *Jurnal Pendidikan: Teori, Penelitian, Dan Pengembangan*, 10(1), 19–28.
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, 24(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>
- Eka Sastrawati, Maryono, Yantoro, & Destrinely. (2025). Project based learning model in digital literacy course in education to improve creativity of pgsd unja students in writing scientific articles. *Primary: Jurnal Pendidikan Guru Sekolah Dasar*, 14(1), 1–10. <https://doi.org/10.33578/jpkip-v14i1.p1-10>
- Emawati, Taufiqulloh, & Fadhly, F. Z. (2024). Challenges and Opportunities in Implementing the Merdeka Curriculum in Language Education: A Meta-syntetic Analysis. *English Review: Journal of English Education*, 12(2), 869–882.
- Golegou, E., & Peppas, K. (2025). STEM Education and 21st Century Skills in Crisis: A Case Study of the COVID-19 Pandemic Response. *Asian Journal of Advanced Research and Reports*, 19(4), 470–509. <https://doi.org/10.9734/ajarr/2025/v19i4996>
- Imbaquingo, A., & Cárdenas, J. (2023). Project-Based Learning as a Methodology to Improve Reading and Comprehension Skills in the English Language. *Education Sciences*, 13(6). <https://doi.org/10.3390/educsci13060587>
- Inyatun Nisa, N. (2025). Soft Skill Development Through Career Counseling Programs to Face The Challenges of The Work Industry for Students. *Eduvest - Journal of Universal Studies*, 5(2), 3189–3196. <https://doi.org/10.59188/eduvest.v5i2.50785>
- Khoerunnisa, N., & Illahi, I. N. (2023). Educational Transformation in the Era of Industrial Revolution 4.0: Preparing Quality and Competitive Graduates in the 21St Century. *2nd Annual International Conference on Islamic Education for Students (AICOIES 2023)*, Aicoies.
- Kokcu, Y. (2023). Critical Reading Self-Efficacy and Metacognitive Reading Strategies: A Relational Study. *International Journal of Progressive Education*, 19(1), 47–61. <https://doi.org/10.29329/ijpe.2023.517.4>
- Kurniawan, Y. (2025). the Effectiveness of Project-Based Learning in Enhancing Students' Speaking Skills in English. *Jurnal Review Pendidikan Dan Pengajaran*, 8(1), 2861–2867. <https://doi.org/10.31004/jrpp.v8i1.42957>
- Laghari, S. (2024). *Impact of Traditional Teaching Methodologies on the Performance of Students at Primary Level in Government Schools of Hyderabad City*. 5(3), 2790–6809.
- Maransha Andrean, F., & Ernati. (2023). Indonesian Junior High School Students' Problem in Learning EFL. *Journal Of Social Science Research*, 3, 8810–8823.
- Mayang Jingga, Abdullah, H. (2024). IMPROVING READING COMPREHENSION ACHIEVEMENT BY USING PROJECT-BASED LEARNING (PBL) STRATEGY. *The Journal of English Literacy Education*, 11(1), 231–242.
- Mulia, G. (2023). The Effectiveness of Project Based Learning in Improving Student Learning Results and Motivation in Physical Education Learning. *Indonesian Journal of Sport Management*, 3(1), 273–279.
- Mustofa, I., Dara, S., & Sok, V. S. (2025). Policy and Practice of Competency-Based Education in Indonesia: Challenges and Prospects for the Future. *Journal Emerging Technologies in Education*, 3(2), 54–64. <https://doi.org/10.70177/jete.v3i2.2131>
- Nadhira, S., & Warni, S. (2021). Students' Listening Difficulties in English as a Foreign Language Learning at Secondary School in Indonesian Context. *Proceedings of the 1st Annual International Conference on Natural and Social Science Education (ICNSSE 2020)*, 547(Icnsse 2020), 186–193.

- <https://doi.org/10.2991/assehr.k.210430.029>
- Prahani, B. K., Trianggono, M. M., Zahro, I., Siswono, H., Ashadi, F., & Saphira, H. V. (2024). EFFECTIVENESS OF DIGITAL PROJECT-BASED SCIENCE LEARNING IN OPTIMIZING STUDENT ' S CREATIVE THINKING SKILLS : ALIGNMENT WITH SDG 4 IN HIGHER EDUCATION learning , especially in critical and creative thinking skills . Based on initial observations , learning. *Journal of Lifestyle and SDGs Review*, 5, 1–21.
- Prasetya, R. E. (2024). Exploring English language instruction through synchronous virtual meetings in Indonesian EFL context: Pedagogical approaches, opportunities and challenges, and multimedia integration. *Journal on English as a Foreign Language*, 14(1), 179–208. <https://doi.org/10.23971/jeft.v14i1.7532>
- Putimasurai, P., Angraini, D., & Mukhlash Abrar. (2024). Integrating Project-Based Collaborative Learning into English Classroom: A Systematic Review. *PPSDP International Journal of Education*, 3(2), 124–139. <https://doi.org/10.59175/pijed.v3i2.295>
- Rukminingsih, Adnan, G., & Latief, M. A. (2020). Metode Penelitian Pendidikan. Penelitian Kuantitatif, Penelitian Kualitatif, Penelitian Tindakan Kelas. In *Journal of Chemical Information and Modeling* (Vol. 53, Issue 9).
- Saputra, I., Purnawan, A., & Angraini, R. (2025). IMPROVING STUDENTS' ENGLISH READING SKILLS BY USING PROJECT- BASED LEARNING (PjBL) IN MUHAMMADIYAH UNIVERSITY OF BENGKULU. *International Journal of Social Service and Research*, 5(1), 23–31. <https://doi.org/10.46799/ijssr.v5i1.1180>
- Sari, D. R., & Handini, O. (2025). *Pengaruh Media Pembelajaran Ular Tangga Berbasis Digital terhadap Hasil Belajar IPAS Peserta Didik Kelas IV SD Negeri Joglo 76 Surakarta*. 5(September).
- Sope, Y. A., & Murtono. (2024). Improving the Critical Thinking Skills of Early Childhood Through the Application of the STEAM Method with Loose Parts in the Independent Curriculum. *Cakrawala Dini: Jurnal Pendidikan Anak Usia Dini*, 15(2), 137–148.
- Sujarwo, Safitri, D., & Ibrahim, N. (2022). DEVELOPING 21st CENTURY SKILLS: Critical Thinking Skills in Case-Based Learning in Social Studies. *Edukasi IPS*, 6(2), 4–23.
- Tamsiyati, E. T., Tiara Nadila, Yasmini, E., Ismail, F., & Efriani, A. (2024). The Effect of the Project-Based Learning Model on Science Learning Outcomes of Fifth-Grade Students at MIN 1 Musi Banyuasin. *TOFEDU: The Future of Education Journal*, 3(5), 1964–1970. <https://doi.org/10.61445/tofedu.v3i5.331>
- Tuti Isnani. (2024). *Implementation_of_Project-Based_Learning_Approach_*. 47–55.
- Wae, P., & Herwin. (2025). Improving Elementary Students' Reading Skills Through the Cooperative Integrated Reading and Composition Method. *Jurnal Ilmiah Sekolah Dasar*, 8(3), 456–465. <https://doi.org/10.23887/jisd.v8i3.71995>
- Zitha, I., Mokganya, G., & Sinthumule, O. (2023). Innovative Strategies for Fostering Student Engagement and Collaborative Learning among Extended Curriculum Programme Students. *Education Sciences*, 13(12). <https://doi.org/10.3390/educsci13121196>