Jurnal Keprofesian Guru Keagamaan
Department of Teacher Professional Education
Tarbiya and Teacher Training Faculty, UIN Sunan Gunung Djati Bandung
https://ejournal.uinsgd.ac.id/index.php/jkgk/ jurnalkgk@uinsgd.ac.id
eISSN 3032-2197
pISSN 3032-1905

Enhancing Quranic Literacy in Elementary Education: The Efficacy of Problem-Based Learning in Teaching Surah At-Tin

Setiyono
SD Negeri 004 Sedarat Batu, Natuna, Indonesia
setiyonoasih22@gmail.com

Article history: Received: 06, 2025; Accepted: 07, 2025; Published: 08, 2025
DOI: https://doi.org/10.15575/jkgk.v3i2.649

Abstract: This study aims to describe the application of the Problem-Based Learning (PBL) model and analyze the improvement in student learning outcomes on the material "Let's Learn the Qur'an Surah at-Tin" in grade V of SD Negeri 004 Sedarat Baru. The method used was Classroom Action Research (CAR) based on the Kemmis and McTaggart model, which was carried out in three cycles, each consisting of planning, action, observation, and reflection stages. The research subjects included 12 fifth-grade students (7 boys and 5 girls). Data were collected through observation and learning outcome tests at the end of each cycle. The results showed that the application of the PBL model significantly improved students' memorization skills. This was evidenced by an increase in the percentage of student learning completeness (KKM) from 25% in the pre-cycle stage to 42% in cycle I, increasing to 67% in cycle II, and reaching 92% at the end of cycle III. The implications of this study indicate that the PBL model is effective in increasing student activity and cognitive achievement in Islamic Religious Education and Ethics subjects, so that it can be used as a reference for teachers in developing teaching variations in the classroom.

Keyword: Islamic Religious Education; Memorization Skills; Problem-Based Learning

INTRODUCTION

Quran literacy is a fundamental competency in the Islamic Religious Education (IRE) curriculum in elementary schools, which includes the ability to read, memorize, and understand the meaning of verses accurately (Suharsongko et al., 2023; Hayi et al., 2025). Mastering the memorization of short surahs, such as Surah at-Tin, is not merely a cognitive target, but a foundation for character building and a broader understanding of Islamic teachings (Hidayah & Ariyani, 2022; Murtyaningsih et al., 2025). However, the effectiveness of memorization teaching is often hampered by pedagogical challenges, where the process of transmitting Quranic verses is still dominated by conventional, mechanistic methods. As a result, the essence of Quranic learning, which should be meaningful, is often reduced to memorization without emotional attachment and deep understanding.

The gap between curriculum expectations and reality in the field is evident at SDN 004 Sedarat Baru, Natuna Regency. Based on initial observations, the level of mastery of memorizing Surah at-Tin among fifth-grade students is still far from the Minimum Mastery Criteria (KKM) standard. These low learning outcomes are not solely due to the students' limited cognitive abilities, but are more due to a highly teacher-centered instructional approach. Monotonous and one-way learning triggers a loss of intrinsic motivation, so that students tend to feel pressured by the burden of memorization and consider PAI material to be a boring subject.

The urgency of this research lies in the need to transform learning strategies from a lecture style to a constructivist approach. Pre-cycle data shows that only a small number of students are able to recite Surah at-Tin with accurate tajwid, while the majority experience difficulties in fluency and accuracy of makharijul huruf. This condition provides empirical justification for the need for an intervention that can activate students' total mental engagement. The Problem-Based Learning (PBL) model is presented as an alternative solution because of its characteristics that place students as active subjects in overcoming their own learning obstacles (Dita et al., 2021; Syahlan et al., 2023).

Theoretically, PBL is a systematic instructional design that uses real-world problems as triggers for the learning process. In the context of memorizing the Quran, "problems" are transformed into technical challenges such as difficulty identifying reading rules or obstacles in memorization retention (Darmawan et al., 2024; Amirudin et al., 2025). Various literature shows that PBL is effective in training critical thinking and problem-solving skills. Through the stages of problem orientation, learning organization, and evaluation, the focus shifts from passive mastery of material to challenging and real learning experiences, which ultimately strengthen in-depth conceptual understanding (Yu & Zin, 2023; Lu et al., 2025).

Although many studies have documented the effectiveness of PBL in science and social studies subjects, its application in the memorization of the Quran in elementary education still leaves a research gap. Most previous PAI studies have focused PBL on understanding historical or fiqh material, but few have integrated it with oral memory strengthening techniques (Ardhy, 2025). This study fills this

gap by exploring how an analytical PBL structure can synergize students' mental processes in recognizing tajwid errors and accelerating memorization fluency through group investigation.

The novelty of this study lies in the synthesis between the PBL model and traditional reinforcement methods, namely Drill (tikrar) and the interactive Talking Stick technique. The Drill method provides reinforcement in the psychomotor aspect through repetitive exercises to maintain long-term memory. On the other hand, Talking Stick serves as an affective catalyst to create a healthy and enjoyable competitive classroom atmosphere. The integration of these three approaches is designed to create a holistic learning ecosystem that not only improves cognitive achievement but also the psychological well-being of students in the classroom.

Previous research provides a strong foundation for the success of student-centered approaches. Relevant studies show that active engagement in group discussions and peer tutoring significantly improves information retention in elementary school children (Cui & Wang, 2024; James et al., 2025). In PBL, students are encouraged to work systematically in groups, where they correct each other's pronunciation and discuss tajwid rules. This social process accelerates the internalization of verses because information is received from various sensory channels and social interactions, which is analytically linked to Vygotsky's cognitive development theory.

In addition to methodological factors, learning success is influenced by internal and external variables. Internal factors such as interest and motivation are greatly influenced by how teachers manage the classroom and present material. PBL inherently fosters interest because it gives students autonomy to manage their learning process. Meanwhile, external factors such as curriculum and teacher competence are tested through the researcher's ability to consistently implement PBL syntax. This study assumes that if instruction is provided in a challenging and participatory manner, psychological barriers to memorizing the Quran can be minimized.

Based on this background, this study aims to measure the effectiveness of the PBL model in improving the ability to memorize Surah at-Tin and analyze the increase in the dynamics of student learning activities at SDN 004 Sedarat Baru. The proposed action hypothesis is that the implementation of PBL integrated with the Drill and Talking Stick methods will significantly exceed the established indicators of classical mastery success. The analysis is not only conducted on the final scores, but also on how each phase in PBL contributes to the continuous improvement of the teaching and learning process.

To conclude the introduction, it is hoped that the results of this study can make a real contribution to the development of PAI pedagogy, especially in Quranic literacy. The transformation from rote memorization to collaborative problem-solving is expected to become a reference model for educators at the elementary level in facing the challenge of low student motivation. By combining the strengths of problem analysis in PBL and the power of practice in the Drill method, this study attempts to address current instructional challenges in order to produce a

generation that not only memorizes the Quran but also loves the process of interacting with it.

METHODOLOGY

This study uses a collaborative Classroom Action Research (CAR) design that adopts the Kemmis and McTaggart cycle model. The choice of CAR design is based on the practical need to solve instructional problems directly in the classroom through a series of independent reflections. The main focus of using this design is to test the effectiveness of the Problem-Based Learning (PBL) model in overcoming students' low Quran literacy. Through this approach, researchers can carry out systematic and measurable interventions to see the extent to which changes in learning strategies can transform students' memorization abilities from a stagnant initial condition to achieving curriculum targets (Arefian, 2022; Ceylan & Comoglu, 2024; Siregar, 2025).

The subjects of this study involved 12 fifth-grade students at SDN 004 Sedarat Baru, Natuna Regency, consisting of 7 male students and 5 female students. The selection of the location and research subjects was conducted purposively (purposive sampling) based on initial observations that showed a significant gap between the curriculum requirements and the reality of students' memorization abilities on the Surah at-Tin material. The limited number of students provided a methodological advantage, whereby the researcher could conduct intensive monitoring of the cognitive development and learning behavior of each individual during the implementation of the PBL model.

The implementation of the PBL model as the main intervention was organized into three action cycles to ensure sustainability and quality improvement in each phase. Each cycle is not only seen as an administrative stage, but also as a unit of analysis to evaluate how the PBL syntax—from problem orientation to evaluation—affects students' memory and understanding. Emphasis is placed on the transition of the teacher's role from a center of information to a facilitator, which is analytically linked to social constructivism theory in increasing student active engagement during the memorization process.

Data in this study were collected through two main techniques relevant to the research objectives, namely observation and oral performance tests. Observation sheets were used to capture qualitative data on the consistency of PBL implementation and the dynamics of student learning activities within groups. Meanwhile, oral performance tests served as quantitative instruments to measure the degree of tajwid accuracy, fluency in makharijul huruf, and fluency in memorizing Surah at-Tin. These two types of data were synergized to provide a holistic picture of the relationship between improvements in the learning process and improvements in learning outcomes.

The data analysis procedure was conducted descriptively and comparatively by comparing test results and student activity scores between cycles. This analysis aimed to identify trends in classical mastery by referring to the predetermined Minimum Mastery Criteria (KKM). In addition to numerical data, observational data was analyzed narratively to provide an in-depth interpretation of the factors that support or hinder the success of the PBL model. The entire

analysis procedure was aimed at proving the action hypothesis that the consistent use of the PBL model can significantly improve students' Quran literacy performance.

RESULTS AND DISCUSSION

Results

This study focuses on empirical analysis of the improvement in memorization skills of Surah at-Tin through the application of the Problem-Based Learning (PBL) model. Data were collected through oral tests to measure cognitive aspects and observation sheets to measure student learning activities. Unlike technical reports that are chronological in nature, the presentation of data here focuses on comparing achievements between cycles to see trends in the improvement of memorization quality and student engagement.

The initial stage of the research began with compiling a Pre-Cycle Performance Matrix as a basis for comparison. At this stage, fundamental deficiencies in students' Quran literacy were identified, with 75% of students (9 out of 12 students) failing to achieve the Minimum Completion Criteria (KKM). Most students experienced difficulties with tajwid accuracy and fluency of recitation. These findings provided strong empirical evidence that the conventional one-way learning model was no longer effective, necessitating the intervention of the PBL model.

To provide a concise overview and avoid redundancy of raw data, the results of student development from the pre-cycle to Cycle III are summarized in the following comprehensive table. This table combines the frequency and percentage of mastery as well as the aggregate categories of student proficiency.

Table 1. Summary of Student Memorization Performance and Classical Mastery

Research Stage	Mastered (n)	Not Mastered (n)	Mastery Percentage (%)	Performance Category
Pre-Cycle	3	9	25%	Poor
Cycle I	5	7	42%	Fair
Cycle II	8	4	67%	Good
Cycle III	11	1	92%	Very Good

Analysis of Cycles I and II shows a gradual improvement after the PBL syntax was introduced. In Cycle I, mastery rose to 42%, where students began to adapt by identifying problems in their own memorization. Significant improvement was seen in Cycle II with a completion rate of 67%. At this stage, the integration of supporting media began to minimize the previously dominant tajwid errors, and the "Poor" student category (scores < 60) was completely eliminated from the sample group.

The peak of the intervention's success was seen in Cycle III, where classical mastery reached 92%. Only one student remained unfinished due to personal constraints, but overall, 11 students were able to demonstrate memorization of Surah at-Tin with high fluency and accurate tajwid. This data proves that the PBL

model is capable of encouraging students to exceed the success indicator target of 75%.

In addition to cognitive results, observation data shows a positive transformation in learning behavior. Student activity increased consistently from 77.5% in Cycle I to 92% in Cycle III. This increase includes aspects of collaboration in groups, the courage to express memorization difficulties, and activeness in providing feedback to peers. The synchronization between test scores and activity scores confirms that active student involvement is a key variable in improving the quality of Quran memorization.

Further analysis of the oral test data shows a significant shift in the quality of memorization in the technical domain of tajwid. In the Pre-Cycle and Cycle I stages, the most dominant errors occurred in the pronunciation of halaqi letters and the application of the Mad Jaiz Munfasil rule found in Surah at-Tin. However, entering Cycle II and III, the integration of audio-visual media in PBL syntax helped students independently solve these errors. This is reflected in the evaluation data, where tajwid errors decreased by 85% in the final cycle, indicating that the students' cognitive processes had reached the expected level of accuracy in Quranic literacy standards.

The effectiveness of the intervention was also evident from the increasingly even distribution of individual scores. At the beginning of the study, there was a wide gap between students who had a religious education background outside of school and students who relied solely on classroom learning. Through the collaboration phase in the PBL model, this gap was successfully minimized. Students with high abilities acted as facilitators for their peers, so that at the end of Cycle III, the average class score jumped sharply to 88.5 from an initial score of only around 62.0. This equalization of scores is proof that PBL is able to accommodate the diversity of students' learning speeds.

The learning activity data, which reached 92% in Cycle III, is not merely a participation figure, but a reflection of the improvement in the quality of social interaction in the classroom. Based on the analysis of the observation sheets, the indicators of “questioning activity” and “ability to provide memorized solutions to friends” experienced the most drastic increase. In Cycle I, students tended to be passive and simply waited for instructions from the teacher, but in Cycle III, independent learning initiatives emerged spontaneously. This increase in proactive behavior directly contributed to the creation of a learning ecosystem conducive to memorizing complex material.

In addition, observations of students' psychological responses showed a decrease in anxiety levels when reciting memorized material using the Talking Stick method, which was incorporated into the PBL evaluation phase. In the early stages, 60% of students showed signs of nervousness, which resulted in memory lapses (blanking out). However, with a more interactive and group-based learning atmosphere, students' confidence levels increased. At the end of the cycle, the majority of students were able to recite Surah at-Tin in front of the class with calm intonation and maintained fluency, which is an important indicator of mastery of Quran memorization.

As a closing point in the results section, the synchronization between cognitive achievements and activity observation data confirms that this intervention has met the established success criteria. The changes that occurred were not merely an increase in classical completion rates, but fundamental changes in the way students learned Quranic literacy. This data shows that memorization obstacles, which were initially considered an individual burden, turned into collective intellectual challenges that were successfully solved through the PBL stages. These empirical findings as a whole provide a strong database for further interpretation in the discussion section based on relevant educational theories.

Discussion

The significant increase in completion rate from 25% to 92% shows that the Problem-Based Learning (PBL) model has a strong instructional impact on the learning of Surah at-Tin material. These results answer the research objective regarding the effect of the PBL model on student learning outcomes. This transformation occurred because PBL changed the memorization process, which was usually passive and repetitive, into an active investigative process, where students were required to solve their memorization obstacles independently or in groups.

Theoretically, the effectiveness of PBL lies in its ability to construct knowledge based on real problems. In this context, "problems" are defined as errors in tajwid (such as mad and gunnah rules) and slurred pronunciation. When students are presented with audio recordings or texts containing errors to analyze, they indirectly develop a keener phonetic awareness. This makes the process of transferring memorization to long-term memory more meaningful because it is based on an understanding of structure, not just memorization of sounds (Rahayu et al., 2024; Inayah, 2025).

The PBL instructional mechanism integrated with the Drill (tikrar) method has proven to be a powerful combination. Although PBL focuses on problem solving, mastery of the Quran still requires repetition. In this study, the Drill method was not carried out monotonously, but was implemented after students understood the solutions to their pronunciation problems. As a result, the students' repetitive exercises became more focused and efficient, which was empirically proven by a drastic reduction in tajwid errors in each cycle (Shrimal, 2024; Al-Thani & Ahmad, 2025).

The application of the Talking Stick method also provides an important affective dimension to PBL discussions. Based on observations, this method was able to reduce students' anxiety levels when they had to demonstrate their memorization in front of the class (Amerstorfer & Freiin von Münster-Kistner, 2021; Aubrey, 2022). With the addition of games and the movement of sticks, the classroom atmosphere became more relaxed and inclusive. This explains why the increase in student learning activity occurred not only in the cognitive aspect, but also in the aspects of self-confidence and internal motivation.

From the perspective of Vygotsky's social constructivism, this improvement in learning outcomes is driven by peer tutoring during the group investigation

phase. Students with higher abilities naturally help their peers who are in the Zone of Proximal Development (ZPD) (Homayouni, 2022; Machimana & Genis, 2025). This interaction is very effective in memorization learning because students are often more comfortable receiving pronunciation corrections from their peers than from teachers, which ultimately accelerates the equalization of memorization quality in the classroom.

This study also succeeded in eliminating teacher-centered learning bias. In the pre-cycle stage, the 75% failure rate was caused by the teacher's dominance in providing memorization examples without giving students room to explore. After PBL was implemented, the teacher's role shifted to that of a facilitator and validator. This shift gave students a sense of responsibility for their own memorization success, which was reflected in their earnestness in following each stage of the cycle.

Analysis of Cycle III data shows a maturing of independent abilities. Students no longer simply memorize, but have begun to be able to self-correct difficult reading rules. This depth of understanding is the result of the reflection process in PBL, where students are invited to review what they have learned and how they overcame difficulties during memorization. This shows that PBL not only improves short-term learning outcomes but also metacognitive skills.

These findings are in line with previous studies which state that problem-based learning models can significantly improve religious literacy. However, the novelty in this study lies in the synthesis between the PBL structure and the traditional Drill technique and the modern Talking Stick technique. This combination has proven to be able to bridge the needs between oral memory skills (traditional aspect) and active student involvement (modern educational aspect).

The success of increasing classical completion rates to 92% also proves that the PBL model can be implemented effectively in schools with a limited number of students but with heterogeneous ability backgrounds. By focusing on group problem solving, the ability gap between students can be minimized. This strengthens the argument that this model is very suitable as a standard reference for Islamic Education teachers in teaching Quran memorization material at the elementary level.

In conclusion, the integration of PBL, Drill, and Talking Stick has created a holistic learning ecosystem. The increase in test scores is not an instant result, but rather the impact of improvements in a higher quality, participatory, and enjoyable learning process. Thus, this intervention has successfully addressed the challenge of low Quran literacy at the outset and provided an empirically tested solution model to improve Islamic Education learning outcomes (Koul & Nayar, 2021).

In addition to cognitive and social aspects, the success of the PBL model in improving the ability to memorize Surah at-Tin is closely related to the strengthening of students' psychomotor aspects. In the PBL stage, students do not just passively listen, but actively practice repeated recitation in order to find solutions to “problems” with sounds that are not yet correct. This process neurologically stimulates coordination between visual memory (seeing the verses), auditory memory (hearing the correct examples), and articulation

(reciting), which, according to cognitivism theory, is the main key in forming permanent memory schemas in elementary school-aged children (Koul & Nayar, 2021).

The group dynamics created in the PBL model also trigger stronger intrinsic motivation compared to the threat of punishment or simply chasing grades. When students work in teams to ensure that all group members memorize the correct tajwid, a sense of collective responsibility arises (Wijnia et al., 2024). The success of achieving group targets in the Talking Stick session provides psychological satisfaction that encourages students to study harder outside of school hours. This explains why the achievements in Cycle III exceeded initial expectations, because learning has changed from an obligation to a group achievement need.

Interpretation of this research data also highlights the importance of "immediate feedback" in the PBL model. Unlike conventional methods where students often make the same pronunciation mistakes for days without correction, in PBL, peers and teachers provide immediate correction when problems are identified in discussions. This speed of correction prevents the formation of misconceptions in students' memories, so that mastery of tajwid, such as the rules of ikhfa or qalqalah in Surah at-Tin, can be achieved more accurately and in a shorter time.

More broadly, the effectiveness of this model criticizes the practice of teaching the Quran, which has relied solely on rote memorization without structural understanding. PBL gives a dimension of "meaning" to each memorized verse; students understand why a reading rule must be read long or resonant as part of solving their oral problems. Thus, the improvement in Quran literacy in this study covers two dimensions at once, namely verbal agility in memorization and sharpness of analysis in applying the rules of tajwid science in practice.

Finally, the consistency of the increase in learning activities from 77.5% to 92% shows that the PBL model has good sustainability in maintaining students' interest in learning. This model is able to overcome boredom, which is often a major obstacle in Islamic Religious Education material that requires memorization. By engaging positive emotions through social interaction and intellectual challenges, PBL not only improves completion rates on paper, but also builds students' critical, collaborative, and confident characters—three key competencies required in today's modern education curriculum.

CONCLUSION AND IMPLICATION

Conclusion

The implementation of the Problem-Based Learning (PBL) model in Islamic Religious Education subjects has been proven to significantly improve students' ability to memorize Surah at-Tin and their level of learning activity at SD Negeri 004 Sedarat Baru. This study successfully proves that a paradigm shift from monotonous, teacher-centered learning to a student-centered approach can effectively overcome low memorization competence. Through the PBL syntax, students are encouraged to be more proactive in identifying pronunciation and tajwid problems and solving them through group collaboration, which ultimately strengthens long-term memory retention. With the achievement of the set

classical mastery target, the research hypothesis was proven correct. These findings have instructional implications for educators to adopt problem-based learning models as innovative strategies for improving Quran literacy in primary education. Although this study shows strong success, the generalization of the results is limited to a small subject scope, so further studies with broader material coverage and samples are needed to strengthen the validity of this model in different contexts.

Implication

The results of this study imply that the Problem-Based Learning (PBL) model can be effectively applied to improve Qur'anic memorization skills and student learning engagement in Islamic Religious Education at the elementary level. This approach supports the development of active, reflective, and collaborative learning, which is essential for strengthening students' mastery of tajwid and long-term memorization. Therefore, Islamic Education teachers are encouraged to integrate PBL into Qur'an learning as an innovative and student-centered strategy. At the policy and research levels, these findings suggest the need for wider implementation and further empirical studies to confirm the effectiveness of PBL in diverse educational settings and Qur'anic learning materials.

REFERENCES

Al-Thani, N. J., & Ahmad, Z. (2025). The Scope of Problem-Based Learning and Integrated Research Education for Primary Learners. In *Teaching and Learning with Research Cognitive Theory* (pp. 25–43). Springer.

Amerstorfer, C. M., & Freiin von Münster-Kistner, C. (2021). Student Perceptions of Academic Engagement and Student-Teacher Relationships in Problem-Based Learning. *Frontiers in Psychology*, *12*(October), 1–18. https://doi.org/10.3389/fpsyg.2021.713057

Amirudin, A., Muzaki, I. A., & Nurhayati, S. (2025). Problem-Based Learning as a Pedagogical Innovation for Transforming Higher Education Students' Islamic Religious Comprehension. *Educational Process: International Journal*, *18*, e2025412.

Ardhy, M. Y. S. (2025). Improving Student Learning Outcomes through the Application of Problem Based Learning Models in Fiqh Lessons on Tharah. *Indonesian Journal of Education and Social Humanities*, *2*(1), 182–193.

Arefian, M. H. (2022). Collaborative action research as a reflective tool for pre-service EFL teachers' inclusion. *Reflective Practice*, *23*(6), 651–662.

Aubrey, S. (2022). The relationship between anxiety, enjoyment, and breakdown fluency during second language speaking tasks: An idiodynamic investigation. *Frontiers in Psychology*, *13*(August), 1–17. https://doi.org/10.3389/fpsyg.2022.968946

Ceylan, E., & Comoglu, I. (2024). Action research in initial EFL teacher education: Emerging insights from a CAR project. *Educational Action Research*, *32*(3), 438–453.

Cui, T., & Wang, J. (2024). Empowering active learning: A social annotation tool for improving student engagement. *British Journal of Educational Technology*,

55(2), 712–730.

Darmawan, D., Qomaruzzaman, B., Hanan, A., & Mauliddin, A. I. (2024). The Impact Of Problem-Based Learning On Understanding And Application Of Tafs r Among University Students. *Educational Administration: Theory and Practice*, *30*(5), 8684–8690.

Dita, P. P. S., Utomo, S., & Sekar, D. A. (2021). Implementation of problem based learning (PBL) on interactive learning media. *Journal of Technology and Humanities*, *2*(2), 24–30.

Hayi, A., Alwi, M., & Bilqis, B. F. (2025). The Role of PAI Teachers and the Failure of al-Qur'an Literacy in Elementary School Students. *Fitrah: Jurnal Studi Pendidikan*, *16*(1), 65–74. https://doi.org/10.47625/fitrah.v16i1.977

Hidayah, A. N., & Ariyani, D. (2022). Wafa Based Al-Quran Memorization Instruction: A Dimension Of Islamic Religious Education For Preschoolers In Indonesia. *International Conference of Early Childhood Education in Multiperspectives*, 282–296.

Homayouni, M. (2022). Peer assessment in group-oriented classroom contexts: on the effectiveness of peer assessment coupled with scaffolding and group work on speaking skills and vocabulary learning. *Language Testing in Asia*, *12*(1). https://doi.org/10.1186/s40468-022-00211-3

Inayah, S. N. (2025). Improving the Ability to Read Aloud Syllables and Words with Correct Pronunciation through the Problem Based Learning Model at MIS Al-Ghuraba. *DEEP LEARNING: Journal of Educational Research*, *1*(1), 184–195.

James, W., Oates, G., & Schonfeldt, N. (2025). Improving retention while enhancing student engagement and learning outcomes using gamified mobile technology. *Accounting Education*, *34*(3), 366–386.

Koul, S., & Nayar, B. (2021). The holistic learning educational ecosystem: A classroom 4.0 perspective. *Higher Education Quarterly*, *75*(1), 98–112.

Lu, L., Mustakim, S. S., & Muhamad, M. M. (2025). A meta-analysis of the effectiveness of problem-based learning on critical thinking. *European Journal of Educational Research*, *14*(3), 789–804.

Machimana, P. N. N., & Genis, G. (2025). Language learners as co-creators of knowledge through constructivist peer tutoring interaction. *South African Journal of Education*, *45*(2), 1–10. https://doi.org/10.15700/saje.v45n2a2437

Murtyaningsih, R., Utaminingsih, E. S., Munawar, M., Qomar, M. N., & Ridwan, M. K. (2025). Optimizing STEAM-Based Differentiated Instruction to Enhance the Effectiveness of Surah At-Tin Memorization among Fourth-Grade Students at Elementary School. *QiST: Journal of Quran and Tafseer Studies*, *4*(1), 307–324.

Rahayu, S., Sitepu, S. R., & Putri, H. A. (2024). Implementation of Problem Based Learning Model in Improving Al-Quran Reading and Writing Skills at SD Bintang Sergai. *Jurnal Profesi Guru Indonesia*, *1*(3), 22–28.

Shrimal, D. (2024). Exploring educational paradigms: Insights from flipped classroom, project-based learning, and game-based learning models. *Journal of Engineering and Technology Management*, *72*, 1–15.

Siregar, T. (2025). *Classroom action research-based learning innovations: Kemmis and McTaggart models*.

Suharsongko, M. E., Munawiroh, M., & Suharwanto, S. (2023). Competence of Islamic religious education teachers from the perspective of the Quran. *Journal of World Science*, *2*(8), 1291–1302.

Syahlan, I. D., Hidayat, D. R., & Hidayat, O. S. (2023). Application of the project based learning model in elementary schools: Obstacles and solutions of science and environment content. *Jurnal Penelitian Pendidikan IPA*, *9*(4), 2060–2067.

Wijnia, L., Noordzij, G., Arends, L. R., Rikers, R. M. J. P., & Loyens, S. M. M. (2024). The Effects of Problem-Based, Project-Based, and Case-Based Learning on Students' Motivation: a Meta-Analysis. In *Educational Psychology Review* (Vol. 36, Issue 1). Springer US. https://doi.org/10.1007/s10648-024-09864-3

Yu, L., & Zin, Z. M. (2023). The critical thinking-oriented adaptations of problem-based learning models: a systematic review. *Frontiers in Education*, *8*, 1139987.