http://dx.doi.org/10.25157/jwp.v%vi%i.21257

The Implementation of the Problem-Based Learning (PBL) Model Assisted by Quizizz Media in Religious Education Subjects

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Abstract

Religious Education learning at junior high schools still faces challenges related to low student participation and learning motivation, thus requiring innovative learning models and media. This study aims to analyze the implementation of the Problem-Based Learning (PBL) model assisted by Quizizz media in Religious Education learning at SMPN 61 Bengkulu Utara and to identify the supporting and inhibiting factors in its application. This study employed a descriptive qualitative approach involving Religious Education teachers and eighth-grade students selected through purposive sampling. Data were collected through classroom observations, semi-structured interviews, and documentation, and analyzed using data reduction, data display, and conclusion drawing techniques. The findings indicate that the PBL model assisted by Quizizz was implemented through stages of problem identification, solution planning, problem solving, and reflection. Quizizz functioned as an interactive learning medium as well as a formative assessment tool that enhanced student motivation and participation. Supporting factors included teacher competence, student motivation, and access to technology, while inhibiting factors involved limited technological facilities, insufficient teacher digital competence, low student motivation, and time constraints. This study concludes that the integration of PBL and Quizizz contributes positively to improving the quality of Religious Education learning and offers practical implications for innovative instructional practices.

Keywords: Problem Based Learning, Quizizz, Religious Education, interactive, collaborative

Abstrak

Pembelajaran Pendidikan Agama di SMP masih menghadapi tantangan terkait rendahnya partisipasi siswa dan motivasi belajar, sehingga membutuhkan model dan media pembelajaran yang inovatif. Penelitian ini bertujuan untuk menganalisis implementasi model Pembelajaran Berbasis Masalah (PBL) yang dibantu media Quizizz dalam pembelajaran Pendidikan Agama di SMPN 61 Bengkulu Utara dan untuk mengidentifikasi faktor pendukung dan penghambat dalam penerapannya. Penelitian ini menggunakan pendekatan kualitatif deskriptif yang melibatkan guru Pendidikan Agama dan siswa kelas delapan yang dipilih melalui purposive sampling. Data dikumpulkan melalui observasi kelas, wawancara semi-terstruktur, dan dokumentasi, dan dianalisis menggunakan teknik reduksi data, penyajian data, dan penarikan kesimpulan. Temuan menunjukkan bahwa model PBL yang dibantu oleh Quizizz diimplementasikan melalui tahapan identifikasi masalah, perencanaan solusi, pemecahan masalah, dan refleksi. Quizizz berfungsi sebagai media pembelajaran interaktif serta alat asesmen formatif yang meningkatkan motivasi dan partisipasi siswa. Faktor pendukung meliputi kompetensi guru, motivasi siswa, dan akses terhadap teknologi, sedangkan faktor penghambat meliputi keterbatasan fasilitas teknologi, kurangnya kompetensi digital guru, rendahnya motivasi siswa, dan keterbatasan waktu. Studi ini menyimpulkan bahwa integrasi PBL dan Quizizz memberikan kontribusi positif untuk meningkatkan kualitas pembelajaran Pendidikan Agama dan menawarkan implikasi praktis untuk praktik pengajaran yang inovatif.
Kata kunci: Pembelajaran Berbasis Masalah, Quizizz, Pendidikan Agama, interaktif, kolaboratif

How to cite:

Rahmawati, Suradi.A., & Iqbal Moch (2025). The Implementation of the Problem-Based Learning (PBL) Model Assisted by Quizizz Media in Religious Education Subjects. *Jurnal Wahana Pendidikan*. 13(1), 197-206

Article History:

Sent 02-09-2025, Revised 20-01-2026 , Accepted 05-02-2026

INTRODUCTION

Problem-Based Learning (PBL) has become an increasingly relevant instructional model in addressing the challenges of 21st-century education. PBL emphasizes the active involvement of students in identifying, analyzing, and solving real-world problems, thereby fostering the development of critical thinking, communication, collaboration, and creativity. Recent studies have demonstrated that PBL not only enhances conceptual understanding but also strengthens social skills and students' tolerance attitudes through sustained interaction and problem solving activities (Huang et al., 2020; Siregar T, 2025; Cong L and Ironsi CS, 2025). This makes PBL one of the most appropriate approaches for competency-based learning in schools.

The core stages of PBL include orienting students to the problem, organizing them into groups for collaborative learning, guiding investigation, developing and presenting solutions, and evaluating the problem-solving process. Teachers play the role of facilitators who encourage students to take responsibility for constructing their own knowledge. This pedagogical shift from teacher-centered instruction to student-centered facilitation requires adaptive competencies to ensure the effectiveness of the learning process (Aini et al., 2021: Millanzi et al., 2021; Fatimah, Rahayu, and Raharjo, 2025). Thus, the success of PBL largely depends on the teacher's ability to select and design contextual problems.

In the context of Islamic Religious Education, PBL serves as a crucial medium for fostering reflective thinking, religious moderation, and tolerance amid diversity. Recent research has shown that PBL enables students to connect religious values with social realities, thereby making learning more meaningful than traditional lecture-based methods (Azizah & Yulianti, 2022). However, classroom practices often reveal several challenges in implementing PBL, including time constraints, low student motivation, and limited teacher competencies in managing problem-based instruction.

The rapid advancement of digital technology has created new opportunities to integrate PBL with interactive learning media, particularly those based on gamification. One widely used medium is Quizizz, an interactive quiz platform that combines text, visuals, and immediate feedback. Quizizz has been proven to increase student motivation through game-based elements such as points, leaderboards, avatars, and real-time feedback, which align with the principles of Self-Determination Theory (Novawan et al., 2022). Its integration in the classroom has demonstrated the potential to enhance both engagement and knowledge retention.

The use of Quizizz also aligns with the *Multimedia Learning Theory*, which posits that students learn more effectively when presented with a combination of text, visuals, and interactivity. Recent

studies have found that incorporating Quizizz into PBL fosters intrinsic motivation, reduces learning fatigue, and creates an enjoyable classroom environment (Kusuma & Hamidah, 2020). Thus, Quizizz functions not only as an assessment tool but also as a complementary medium that reinforces the effectiveness of PBL.

Nevertheless, the integration of PBL with Quizizz is not without challenges. Common barriers include limited technological infrastructure, insufficient digital literacy among teachers, low student motivation, and restricted instructional time to design complex problem-based projects (Nurdyansyah & Mutohar, 2021; Zainuddin et al., 2022). These issues necessitate adaptive strategies, such as teacher training, improved access to digital resources, and the adoption of simpler project designs suited to school conditions.

The *state of the art* of this study lies in combining PBL with Quizizz within the context of Islamic Religious Education in junior high schools. Previous studies primarily highlighted Quizizz as an evaluation tool, whereas this research emphasizes its role in supporting the entire PBL process. Accordingly, this study offers novelty by integrating a pedagogical model with digital gamification to establish a more interactive and collaborative learning environment (Putri et al., 2023). This approach is supported by prior international research indicating that PBL effectively promotes higher-order thinking skills and meaningful learning through authentic problem engagement (Hmelo-Silver, 2004), while gamified digital platforms have been shown to enhance student motivation, engagement, and active participation in learning activities (Sailer & Homner, 2020).

Based on these considerations, this study aims to analyze the use of PBL assisted by Quizizz media in Islamic Religious Education at SMPN 61 Bengkulu Utara, identify supporting and inhibiting factors in its implementation, and assess its implications for enhancing students' learning attitudes and motivation. The novelty of this research lies in the integration of problem-based instruction with gamified learning platforms, which is expected to create an engaging, relevant, and effective learning environment for the digital generation (Rachmawati & Wijayanti, 2024)

RESEARCH METHODS

This study employed a qualitative research design. The purpose of this research was to reveal facts, circumstances, phenomena, variables, and conditions that occurred during the research process and to present them as they were in the field. The research emphasized the depth of data exploration to obtain accurate and meaningful findings. In line with the qualitative approach, the study relied on descriptive narratives in the form of words and sentences that were carefully and systematically organized, beginning from data collection to data interpretation and reporting.

To further operationalize the qualitative inquiry, this study was guided by two central research questions. First, the research sought to explore how Problem-Based Learning (PBL) assisted by Quizizz was implemented in Islamic Religious Education classes at SMPN 61 Bengkulu Utara, particularly in relation to classroom interaction patterns, problem-solving stages, and the use of digital gamification throughout the learning process. This question directed the investigation toward understanding the actual instructional practices and learning dynamics observed during the implementation of PBL supported by Quizizz.

Second, the study aimed to examine the supporting and inhibiting factors that influenced the implementation of PBL assisted by Quizizz, as well as the pedagogical implications of this integration for students' learning attitudes, engagement, and motivation in Islamic Religious Education. This research question focused on identifying contextual, technological, and pedagogical conditions that

shaped the effectiveness of the learning model and on interpreting how these conditions affected students' participation and learning experiences.

The research was conducted at SMPN 61 Bengkulu Utara, focusing on the implementation of the Problem-Based Learning (PBL) model assisted by Quizizz media in Islamic Religious Education classes. The research subjects consisted of teachers and students who were directly involved in the teaching and learning process, while additional informants included village officials, religious leaders, and community members who provided contextual insights to enrich the understanding of the educational environment. The selection of informants was purposive, as they were considered capable of providing accurate and relevant information to support the research objectives.

The research procedure began with planning, which included identifying the problems that occurred in the learning process, designing the research focus, and preparing research instruments such as interview guides, observation sheets, and documentation formats. During the implementation stage, the researcher entered the classroom, observed the learning activities, and documented the interaction between teachers and students when PBL and Quizizz were applied. The observation process was carried out naturally, without interfering with the learning process, so that authentic behaviors and responses could be captured.

Data were collected through three primary techniques, namely interviews, observation, and documentation. Interviews were conducted with teachers and students to obtain verbal data about their experiences and perceptions of using PBL and Quizizz. Observations were carried out directly during classroom activities to understand the dynamics of learning and the challenges faced by both teachers and students. Documentation, such as lesson plans, learning media, and Quizizz activity reports, was collected to complement and validate the findings from interviews and observations.

Throughout the research process, the researcher actively engaged in the field. The researcher listened attentively, asked questions, took notes, observed interactions, and immersed themselves in the school environment to obtain a holistic understanding. This field immersion was intended to ensure that the collected data reflected the actual conditions experienced by teachers and students. The process of interpretation involved connecting field findings with the phenomena observed, so that the conclusions drawn represented a deep and comprehensive understanding of the object of study.

Data analysis was conducted continuously and interactively, starting from the reduction of irrelevant information, the organization and classification of data, to the interpretation of meaning. The analysis process aimed to identify patterns, themes, and relationships between variables that emerged in the field. Each piece of information was verified through triangulation, comparing the results of interviews, observations, and documentation to ensure the validity and credibility of the findings.Each data collection instrument was analyzed through systematic and complementary procedures. Interview data were analyzed through transcription, coding, and thematic analysis. All interview recordings were transcribed verbatim, then subjected to open coding to identify meaningful units related to the implementation of PBL assisted by Quizizz, supporting and inhibiting factors, and perceived impacts on students' learning attitudes and motivation. These initial codes were subsequently grouped into categories and higher-order themes through axial coding, allowing patterns and relationships across participants to emerge. Selective coding was then used to refine the core themes that directly addressed the research questions.

Observation data were analyzed using descriptive and analytical field notes. During classroom observations, the researcher recorded instructional sequences, teacher student interactions, student engagement, and the use of Quizizz at each stage of the PBL cycle. The observation notes were first

organized chronologically and then coded based on predefined indicators (e.g., problem understanding, collaborative discussion, feedback use, and reflection) as well as emergent behaviors observed in the field. This process enabled the identification of recurring interaction patterns and deviations across learning sessions.

Documentation data were analyzed through content analysis. Relevant documents, such as lesson plans, teaching materials, Quizizz activity reports, and assessment records were examined to identify alignment between planned instruction and classroom practice. Particular attention was given to learning objectives, problem scenarios, assessment formats, and analytics generated by Quizizz (e.g., accuracy rates and item difficulty). These documents functioned as corroborative evidence to support or challenge findings derived from interviews and observations.

Cross-instrument triangulation was conducted by comparing themes generated from interviews, observations, and documentation. Convergent findings were treated as robust patterns, while discrepancies were re-examined through iterative analysis and, when necessary, additional field engagement. This integrative analytical process strengthened the credibility, consistency, and trustworthiness of the qualitative findings.

Finally, the evaluation and reflection stage were carried out by reviewing the entire research process and findings to ensure that the results answered the research objectives. The cyclical nature of qualitative research allowed the researcher to revisit the field when necessary to clarify or deepen certain findings. Through this process, the study produced a comprehensive description of how PBL assisted by Quizizz was implemented in Islamic Religious Education and revealed the supporting and inhibiting factors in its application.

RESULTS AND DISCUSSION

RESULTS

How is Problem-Based Learning (PBL) assisted by Quizizz implemented in Islamic Religious Education (PAI) at SMPN 61 Bengkulu Utara?

Interview results with the principal, vice-principal for student affairs, PAI teachers, and a civics teacher indicated that PBL assisted by Quizizz was implemented through a structured instructional cycle aligned with problem-solving stages. Teachers reported intentionally designing contextual moral and religious problems derived from students' daily experiences and embedding these problems into Quizizz activities to stimulate initial engagement and diagnose prior knowledge.

Observation data confirmed that the learning process followed four recurring stages: problem understanding, solution planning, problem solving, and looking back (reflection). During the problem-understanding phase, teachers presented Qur'anic- and Hadith-based dilemmas using Quizizz scenarios to surface misconceptions. In the planning phase, students analyzed causes and formulated alternative solutions, while Quizizz items were used as formative checkpoints to assess conceptual readiness. In the problem-solving phase, students worked collaboratively in small groups, with Quizizz functioning as low-stakes reinforcement to maintain focus and task progression. Finally, in the reflection phase, teachers used Quizizz analytics (item difficulty, distractor patterns, and accuracy rates) to guide whole-class discussion and error analysis.

Documentation analysis, including lesson plans, learning materials, and Quizizz reports, showed consistency between instructional planning and classroom implementation. Lesson plans explicitly integrated Quizizz at multiple points of the PBL cycle rather than as an end-of-lesson assessment tool. Quizizz reports further evidenced increased participation and more evenly distributed student responses during discussions.

Overall, the findings indicate that PBL assisted by Quizizz was implemented as an integrated instructional model in which digital gamification supported all stages of problem-based learning rather than functioning solely as an evaluation medium.

What supporting and inhibiting factors influence the implementation of PBL assisted by Quizizz in Islamic Religious Education learning?

Interview data revealed three main supporting factors. First, teacher pedagogical competence particularly in designing higher-order, scenario-based Quizizz items played a critical role in sustaining meaningful problem-solving activities. Second, student motivation was strengthened by gamification features such as leaderboards, progress indicators, and collaborative play. Third, adequate infrastructure, including stable internet access and sufficient digital devices, enabled smooth transitions between discussion and digital assessment.

Conversely, interviews also identified several inhibiting factors. Teachers noted uneven student access to devices and internet connectivity, which occasionally disrupted lesson flow. Some teachers acknowledged limited experience in constructing analytical Quizizz items, resulting in an overreliance on recall-based questions. Time constraints within fixed lesson schedules further reduced opportunities for extended reflection.

Observation findings reinforced these interview results. In classrooms with strong infrastructure and skilled facilitation, the PBL cycle ran to completion, and reflective discussions were substantive. In contrast, technical disruptions and limited questioning techniques reduced Quizizz to a simple quiz tool, weakening its alignment with PBL objectives.

Documentation data supported these patterns by showing variability in Quizizz item complexity and reflection time allocation across lesson plans. Where planning emphasized higher-order thinking and reflection, learning interactions were more dialogic and sustained.

DISCUSSION

How is Problem-Based Learning (PBL) assisted by Quizizz implemented in Islamic Religious Education (PAI) at SMPN 61 Bengkulu Utara?

The implementation of PBL assisted by Quizizz aligns closely with classical problem-solving theory, particularly Polya's four stages: understanding the problem, devising a plan, carrying out the plan, and looking back. The integration of Quizizz at each stage functioned as a formative feedback loop, supporting learners' cognitive engagement throughout the problem-solving process. This finding corroborates previous studies emphasizing that PBL is most effective when supported by continuous formative assessment rather than summative evaluation alone (Hmelo-Silver, 2004; Chan et al., 2022).

From a motivational perspective, the results support self-determination theory, which posits that competence, autonomy, and relatedness are key drivers of sustained engagement (Ryan & Deci, 2020). Quizizz features such as immediate feedback and collaborative gameplay supported students' sense of competence and relatedness, thereby enhancing participation in complex moral reasoning tasks. This aligns with earlier research on gamified learning platforms that report increased engagement and persistence when digital tools are embedded meaningfully within pedagogical models rather than used superficially (Sailer & Homner, 2020; Martínez et al., 2021).

What supporting and inhibiting factors influence the implementation of PBL assisted by Quizizz in Islamic Religious Education learning?

The identified supporting and inhibiting factors are consistent with prior findings on technology-enhanced PBL. Teacher design capacity emerged as a decisive factor, echoing studies that stress the importance of pedagogical content knowledge in digital learning integration (Mahmudi et al., 2021). Similarly, infrastructural readiness and time allocation were shown to shape implementation quality, supporting earlier research that highlights contextual constraints as determinants of instructional effectiveness (Arifin & Fauzi, 2022; Hendriyana et al., 2023).

Compared with previous practices at the school where technology use was largely limited to presentation slides and end-of-unit tests the integrated PBL Quizizz approach redistributed assessment across the learning process and positioned technology as a mediator of reasoning and dialogue. This finding reinforces the argument that the pedagogical value of gamification lies not in entertainment but in its strategic alignment with instructional goals (Choi & Lee, 2019; Hartono & Sari, 2025).

CONCLUSION

The study concluded that the application of the Problem-Based Learning (PBL) model assisted by Quizizz in Islamic Religious Education at SMPN 61 Bengkulu Utara was carried out through four main stages: understanding the problem, planning the solution, solving the problem, and re-checking the completed work. These stages reflected the fundamental characteristics of PBL as a cognitive activity in which students were guided to identify issues, collaborate in teams, and generate solutions systematically. The integration of Quizizz as an interactive gamified platform enhanced these processes by providing real-time feedback, increasing student enthusiasm, and fostering collaborative learning that made the classroom environment more dynamic and engaging.

The findings also revealed that several supporting and inhibiting factors influenced the effectiveness of PBL with Quizizz. Supporting factors included teacher competence, student motivation, and adequate access to technological infrastructure, all of which played a critical role in maximizing the benefits of PBL implementation. In contrast, inhibiting factors such as limited technology access, insufficient teacher skills in integrating higher-order learning questions into Quizizz, low motivation among some students, and limited instructional time were identified as challenges that hindered the optimal use of the model. These factors indicated that while PBL with Quizizz had great potential, its success depended heavily on the availability of resources, pedagogical readiness, and student engagement.

Based on these conclusions, it is suggested that teachers continue to enhance their skills in designing contextual PBL scenarios and integrating critical thinking-based questions within Quizizz to maximize learning outcomes. Schools are encouraged to provide professional development programs and technological support to strengthen teacher capacity and ensure reliable digital infrastructure. Furthermore, students should be motivated through collaborative activities and reflective practices to build intrinsic learning motivation. Finally, school administrators and policymakers need to allocate sufficient time and resources for implementing PBL effectively, ensuring that the approach is not applied superficially but rather in a manner that fosters meaningful and sustainable improvements in Islamic Religious Education.

RECOMMENDATION

Based on the findings of this research, it is recommended that future studies further explore the integration of Problem-Based Learning (PBL) with various digital platforms beyond Quizizz, such as Kahoot or Google Classroom, to compare their effectiveness in enhancing student engagement and critical thinking in Islamic Religious Education. Researchers are also encouraged to conduct

longitudinal studies to examine the sustainability of PBL outcomes over time, especially in developing students' tolerance, collaboration, and higher-order thinking skills. Moreover, it is important to expand the scope of research to include different educational levels and diverse learning environments in order to generalize the effectiveness of PBL with digital media across broader contexts. Finally, researchers should consider incorporating mixed-method approaches to capture both the quantitative impact and qualitative experiences of students and teachers, thereby providing a more comprehensive understanding of the model's application.

THANK-YOU NOTE

The researcher would like to express sincere gratitude to SMPN 61 Bengkulu Utara for providing access, facilities, and support throughout the research process. Appreciation is also extended to Dr. H. Sugiyatno, M.Pd., as the Principal of SMPN 61 Bengkulu Utara, and Mrs. Intan Hastiningrum, S.Pd., as Vice Principal of Student Affairs, for their valuable assistance and cooperation during data collection. Special thanks are addressed to the teachers of Islamic Religious Education and Civic Education at SMPN 61 Bengkulu Utara who willingly participated in the interviews and observations, as well as to the students who actively contributed to this study. Without the support of these institutions and individuals, the research would not have been successfully completed.

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