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Mobile Game-Based Learning Framework to Enhance Student Engagement in Islamic Higher Education

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Abstract

This study aims to design and implement a Game-Based Learning (GBL) model to enhance student engagement in Islamic Education (PAI) at the higher education level. The main issue addressed is the low student engagement due to the dominance of lecture-based methods and distractions from smartphone use in class. Generation Z students, in the digital era, demand more interactive and contextual learning models. A game-based learning approach is an innovative solution, turning digital devices from distractions into engaging Islamic learning tools. This research adopts the ADDIE model (Analysis, Design, Development, Implementation, Evaluation). The analysis phase involved interviews with five Islamic Education lecturers, analyzed using NVivo 12 software to identify learning needs. The design phase produced a six-stage GBL flow: orientation, exploration, interaction, reflection, evaluation, and closure. The development phase used the Wayground platform, integrating features like Voting, Word Cloud, Quiz, and Essay Response for interactive learning. The model was tested on 100 PAI students to measure effectiveness. Findings show significant improvements in cognitive, affective, and behavioral engagement, making students more active, motivated, and reflective on Islamic values. The model proved valid and effective, transforming smartphones into productive tools for Islamic learning.

Keywords: *ADDIE Model, Instructional Game-Based Learning, Islamic Education, Student Engagement, Wayground.*

Abstrak

Penelitian ini bertujuan untuk merancang dan mengimplementasikan model Game-Based Learning (GBL) untuk meningkatkan keterlibatan mahasiswa dalam pembelajaran Pendidikan Agama Islam (PAI) di tingkat perguruan tinggi. Masalah utama yang dihadapi adalah rendahnya keterlibatan mahasiswa akibat dominasi metode ceramah dan distraksi dari penggunaan smartphone di kelas. Mahasiswa Generasi Z, di era digital ini, menuntut model pembelajaran yang lebih interaktif dan kontekstual. Pendekatan pembelajaran berbasis permainan menjadi solusi inovatif, mengubah perangkat digital dari distraksi menjadi alat pembelajaran Islam yang menarik. Penelitian ini menggunakan model ADDIE (Analisis, Desain, Pengembangan, Implementasi, Evaluasi). Fase analisis melibatkan wawancara dengan lima dosen PAI yang dianalisis menggunakan perangkat lunak NVivo 12 untuk mengidentifikasi kebutuhan pembelajaran. Fase desain menghasilkan alur GBL enam tahap: orientasi, eksplorasi, interaksi, refleksi, evaluasi, dan penutupan. Fase pengembangan menggunakan platform Wayground dengan fitur Voting, Word Cloud, Quiz, dan Essay Response untuk pengalaman pembelajaran interaktif. Model ini diuji pada 100 mahasiswa PAI untuk mengukur efektivitasnya. Hasil penelitian menunjukkan peningkatan signifikan dalam keterlibatan kognitif, afektif, dan perilaku, menjadikan mahasiswa lebih aktif, termotivasi, dan reflektif terhadap nilai-nilai Islam. Model ini terbukti valid dan efektif, mengubah smartphone menjadi alat produktif untuk pembelajaran Islam.

Kata kunci: *Keterlibatan Mahasiswa, Model ADDIE, Pembelajaran Berbasis Permainan Instruksional, Pendidikan Agama Islam, Wayground.*

Introduction

Islamic Education (PAI) plays a fundamental role in shaping the character, morality, and spirituality of university students as the nation's future generation. In higher education, PAI is not merely a medium for teaching religious doctrines, but also an instrument for internalizing Islamic values within academic, social, and professional contexts (Jenuri et al., 2025; Kurniawan et al., 2025; Mardatillah et al., 2025). However, religious education in the digital era faces increasingly complex challenges. Millennial and Generation Z students grow up in a highly dynamic digital environment, where social interaction, entertainment, and access to information occur instantly through devices such as smartphones (Faqihuddin & Subakti, 2022; Priyadarshini et al., 2024; Putera & Gunada, 2025). This dependence on mobile phones has led to significant changes in learning behavior—students tend to have a short attention span, are easily distracted by social media notifications, and often lack focus on conventional academic activities (Ridwan et al., 2025; Sanusi et al., 2024; Surahman et al., 2024). In this context, Islamic Education must be designed to be more creative, contextual, and engaging to compete with various digital distractions surrounding students (Abd. Rashid et al., 2020; Meng et al., 2025; Suresman et al., 2025; Tian & Zhou, 2022). Therefore, the implementation of Instructional Game-Based Learning (GBL) becomes highly relevant as an instructional strategy that integrates Islamic values with interactive and enjoyable digital learning experiences, thereby attracting students' attention and enhancing their engagement in religious learning (Camilleri, 2023; Chen, 2024).

The phenomenon of smartphone distraction in classrooms has become a major challenge for Islamic Education lecturers in higher education (Afifah et al., 2025, Flanigan & Daleiden, 2025; Kumar & Radcliffe, 2019; Zhou & Deng, 2025a). Students frequently use their smartphones not to support the learning process, but rather to access social media, play commercial games, or watch videos during lectures. Such distractions result in decreased concentration, low levels of active participation, and a lack of reflective depth toward Islamic learning materials (Al-Furaih & Al-Awidi, 2021; Zhou & Deng, 2025b). Meanwhile, learning approaches that remain dominated by lecture and memorization methods make students feel bored and less interested in participating in religious discussions. This condition widens the gap between lecturers' teaching styles and students' more digital and visual learning preferences (Hilton, 2018; Ross, 2018). Consequently, PAI learning often becomes a mere curricular formality without providing meaningful experiences capable of transforming students' behavior and spirituality. This phenomenon highlights an urgent need for learning innovation that does not simply transfer religious content into digital platforms but is also capable of transforming smartphones—the main source of distraction—into educational, engaging, and value-based Islamic learning media (Jenuri et al., 2024; Sulistiyani et al., 2023).

The concept of Instructional Game-Based Learning (GBL) emerges from the integration of two major disciplines: instructional design theory and educational game theory(Brown & Green, 2019; Ranjan, 2025). Instructional design provides a systematic framework for creating effective learning experiences, while game elements—such as challenges, levels, rewards, and feedback—offer intrinsic motivation for learners (Bigdeli et al., 2024; Erradi et al., 2024). In the context of modern education, Instructional GBL has been proven to enhance students' motivation, collaboration, and critical thinking skills. When applied to value-based learning, this approach fosters more immersive and reflective learning experiences (Erradi et al., 2024). In the context of Islamic Education, the application of Instructional GBL holds strong potential, as it transforms students' perceptions of religious education from being rigid and monotonous into something dynamic and engaging. Through Islamic value-based educational games, students can learn about *akhlaq* (ethics), *fiqh* (jurisprudence), and Islamic history in a more contextual and meaningful way (Siregar et al., 2023; Yusoff et al., 2020). Furthermore, GBL allows smartphones—often regarded as a major source of distraction—to be repurposed into productive learning tools that support

Islamic values. Thus, Instructional GBL offers an innovative alternative to address the challenge of low *student engagement* in Islamic Education amid the digital era (Papakostas, 2024).

Most Game-Based Learning (GBL) studies focus on science, technology, and language education (Fante et al., 2024), while applications in religious education—particularly Islamic Education in higher education—remain limited. Existing research is largely oriented toward cognitive outcomes, with comparatively little attention to multidimensional student engagement, including emotional, social, and spiritual involvement. In addition, few studies explicitly integrate instructional design principles with GBL models grounded in Islamic values, and almost none position smartphones as Islamic learning media that transform digital distractions into purposeful learning experiences. Consequently, there is a clear gap in models of Islamic Religious Education (IRE) based on digital games that both sustain student attention and foster religious awareness and moral responsibility. The novelty of this study lies in developing a smartphone-based instructional GBL framework grounded in Islamic values. Using the ADDIE instructional design model, it integrates digital game elements—such as Islamic missions, virtuous rewards, and value-based reflection—into the structure of Islamic Education in higher education. In this design, students are not merely completing game missions but engaging as reflective learners who interpret their in-game experiences within spiritual and social contexts. By bringing Islamic learning directly onto students' personal devices, the model offers a timely response to the digital era: positioning technology not as an adversary to spirituality, but as a medium for nurturing faith, deepening understanding, and strengthening engagement with Islamic values.

Methods

This study aims to design and implement an Instructional Game-Based Learning (GBL) model to enhance student engagement in Islamic Education (PAI) learning within higher education settings. The research employs the ADDIE development model (Analysis, Design, Development, Implementation, Evaluation), consisting of five systematic stages to produce a valid, engaging, and effective instructional model (Branch, 2010; Fang et al., 2011). The participants consisted of five PAI lecturers selected through purposive sampling and 100 Islamic Education students selected through convenience sampling, allowing the model to be tested in an intact class while acknowledging limitations in generalizability beyond this context.

In the Analysis stage, the activities focused on identifying instructional needs and the current conditions of both students and lecturers in PAI learning. Using purposive sampling, in-depth interviews were conducted with five PAI lecturers to explore challenges in improving student engagement, difficulties in delivering content through conventional methods, and the potential integration of game elements in instruction (Arikunto, 2010; Rue, 2018; Wu Suen et al., 2014). Lecturers were included if they had at least three years of teaching experience in Islamic Education and prior exposure to technology-enhanced learning. Qualitative data from interviews, open-ended responses, and observation notes were analyzed using NVivo 12 through an open–axial coding process to identify key issues related to smartphone use, engagement, and digital learning, and to group them into broader thematic categories. Additionally, an analysis of student characteristics was carried out using NVivo 12 software to assist in qualitative data coding and thematic categorization. This analysis covered aspects such as motivation, learning styles, and technological readiness. The outcome of this phase was a comprehensive needs analysis map, which served as the foundation for designing the game-based learning model (AlYahmady & Al Abri, 2013; Dhakal, 2022; Wiltshier, 2011).

The Design stage aimed to develop a GBL model that fosters students' cognitive, affective, and behavioral engagement. In this study, student engagement was conceptualized as a multidimensional construct comprising behavioral (participation, persistence), emotional (interest, enjoyment), cognitive (deep processing, reflection), and spiritual (internalization of Islamic values) dimensions. At this stage, the researcher established learning objectives, structured the instructional flow, and designed game mechanics, including a point system, levels, badges, and

leaderboards. The instructional model followed six systematic phases: introduction, exploration, interaction and collaboration, reflection and conceptualization, evaluation and feedback, and closure and follow-up. The game content was aligned with PAI themes such as ethics (*akhlaq*), jurisprudence (*fiqh*), Islamic history, and faith values, along with defined engagement indicators and evaluation plans. with engagement indicators for each dimension used to guide observation and questionnaire item construction. The Development stage involved creating a prototype of the game-based learning environment using the Wayground platform. PAI learning content was developed in the form of quizzes, simulations, and interactive activities utilizing Wayground's key features—Voting, Word Cloud, Quiz, and Essay Response. These features allowed lecturers to integrate Islamic content into interactive formats, map learning outcomes, and produce game-based materials suited to student needs. The content and model design were validated by subject matter experts and PAI lecturers to ensure relevance, content accuracy, and instructional effectiveness (Brown & Green, 2019). Feedback from validators was used to refine task clarity, the alignment between game mechanics and learning objectives, and the appropriateness of scenarios for supporting Islamic values.

The Implementation stage sought to apply the developed model in an actual learning environment. The participants consisted of 100 Islamic Education students selected through convenience sampling. The GBL model was implemented over several learning sessions to evaluate student engagement and its impact on motivation. Data were collected through classroom observations, *student engagement* questionnaires, and reflective interviews with both students and lecturers. The questionnaire employed a Likert-type scale aligned with the behavioral, emotional, cognitive, and spiritual dimensions defined at the design stage, while structured observation sheets and interview guides were used to capture complementary qualitative evidence of engagement. The Wayground platform served as the primary medium for delivering instructional content, facilitating interactive game-based activities, and managing assessments.

Finally, the Evaluation stage aimed to assess the success and effectiveness of the GBL model in enhancing student engagement. Both formative and summative evaluations were conducted—formative evaluations took place during the design and development phases through expert validation and pilot testing, while summative evaluations were carried out after full implementation with 100 students (Emerson, 2021). Quantitative questionnaire data were analyzed descriptively to identify patterns of change in perceived engagement, and qualitative data from observations and interviews were compared with the initial needs analysis to examine shifts in student behavior and attitudes. Observational and interview data were analyzed to identify changes in engagement levels before and after the model's application. The findings from the evaluation were used to refine the model and provide recommendations for broader application within Islamic Education contexts. This study produced a conceptual model of Game-Based Learning for PAI supported by the Wayground platform, which effectively improved student motivation and participation. Furthermore, it offers practical guidance for lecturers in designing interactive, game-based instruction that aligns with Islamic values and meets the demands of 21st-century education (Blumenfeld et al., 2004). This study adhered to fundamental research ethics principles by clearly informing all participants about the purpose of the study, obtaining their voluntary consent, ensuring the confidentiality of their identities, and using all collected data solely for academic purposes.

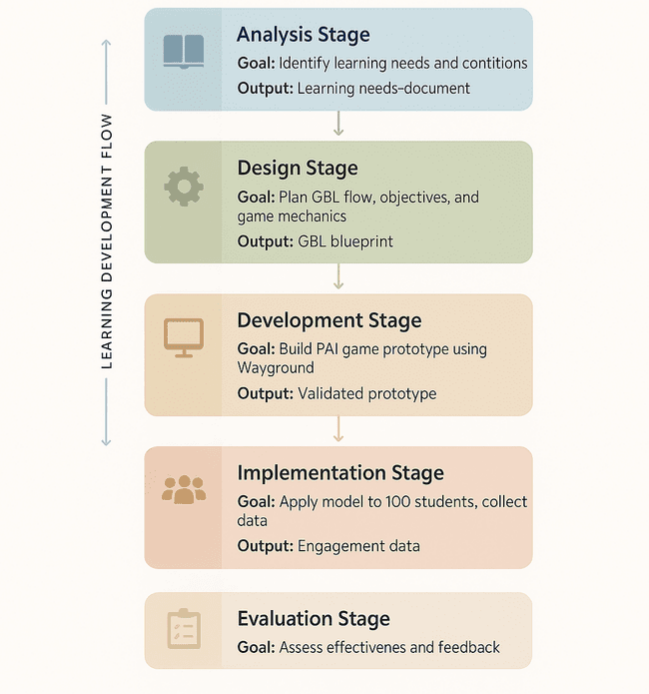

Figure 1. ADDIE Model of Instructional Game-Based Learning (GBL) for Enhancing Student Engagement in Islamic Education (PAI) in Higher Education.

Results

Needs Analysis

Table 1. Summary of Interview Findings.

No	Aspect	Code	Interview Findings / Key Insights	Respondent
1	Student Engagement (STE)	STE1	Students tend to be less active and easily disengaged when learning relies solely on lecture-based methods.	L1
		STE2	Student participation increases when the material is linked to real-life contexts.	L2
		STE3	There is a need for strategies that encourage students to engage more actively in discussions and collaborative learning.	L3, L4, L5
2	Digital Learning Media (DLM)	DLM1	Teaching has primarily used PowerPoint and videos, with no interactive digital tools integrated.	L1, L2, L4
		DLM2	Quizizz has been used, but it has not yet been adapted for Islamic content.	L3
		DLM3	Digital media should be tailored to the interests of younger generations who prefer game-based formats.	L5
3	Islamic Education Content (IEC)	IEC1	PAI materials are often abstract and difficult to comprehend without concrete examples.	L1, L2, L4
		IEC2	Game-Based Learning (GBL) can help convey Islamic values through enjoyable and experiential learning.	L3

		IEC3	Islamic subjects can be structured as missions or game levels to enhance engagement.	L5
4	Integration of Game-Based Learning (GBL)	GBL1	GBL is considered highly relevant to enhancing students' learning motivation.	L1
		GBL2	Training is required to help lecturers integrate Islamic values into educational games.	L2
		GBL3	The Wayground platform is seen as a promising tool for implementing GBL in Islamic Education.	L3
		GBL4	GBL can promote collaborative learning through healthy competition among students.	L4, L5
5	Assessment and Feedback (ASF)	ASF1	An automated assessment system that provides immediate feedback is needed.	L1, L2
		ASF2	Timely feedback is essential for helping students monitor their learning progress.	L4
		ASF3	Assessment should not rely solely on final exams but also include participation in game-based activities.	L3, L5

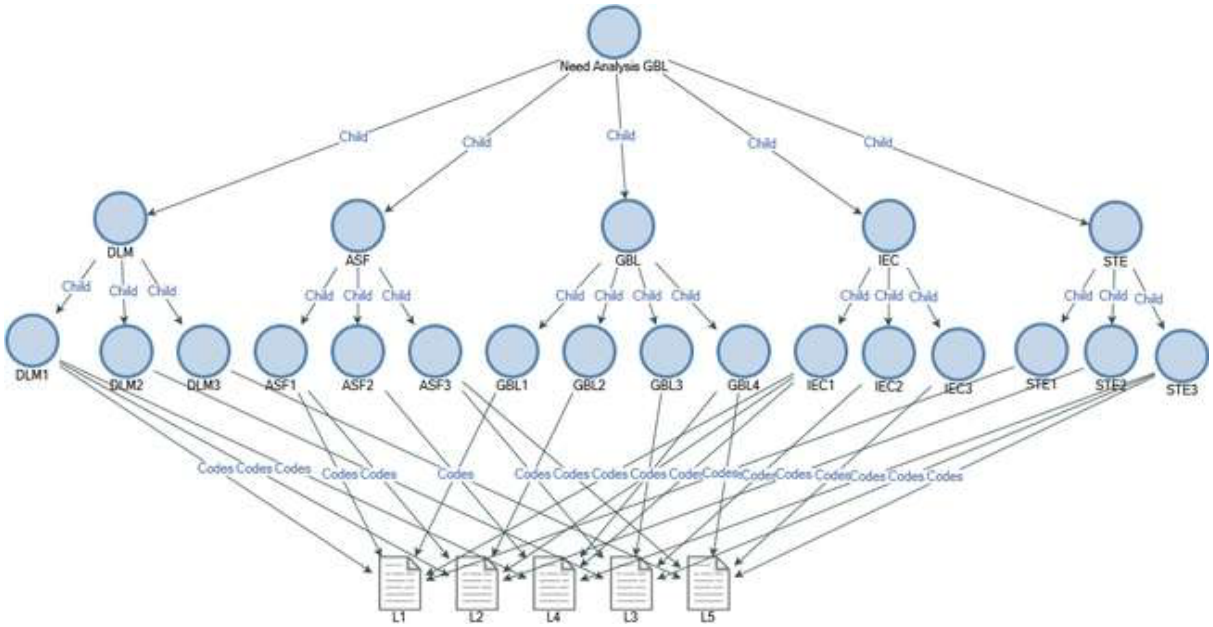

Figure 2. Project Map on NVIVO 12 which displays the mapping of research respondents.

In the aspect of student engagement, lecturers indicated that students' level of activeness in Islamic Education (PAI) learning remains relatively low. Lecturer L1 noted that students often become disengaged when learning activities rely solely on conventional lecture methods. Lecturer L2 added that student participation increases when the learning materials are connected to real-life contexts. Similarly, Lecturer L4 emphasized the necessity of implementing strategies that encourage students to engage more actively in class discussions and collaborative tasks. These findings highlight the need for more interactive and context-based learning approaches to create meaningful learning experiences for students. Regarding digital learning media, most lecturers reported still relying on simple tools such as PowerPoint and videos. Lecturer L1 acknowledged

that these media have not been fully interactive. Lecturer L3 had previously attempted to use the Quizizz platform but had not yet adapted it to align with Islamic content. Meanwhile, Lecturer L5 emphasized that digital learning media should be tailored to the characteristics of younger generations who prefer game-based and interactive learning activities. These observations underscore the need for more engaging, interactive, and Islamically integrated digital learning innovations.

In the aspect of Islamic Education content (PAI), several lecturers pointed out that instructional materials—particularly those related to *aqidah* (faith) and *akhlaq* (morality)—tend to be abstract and difficult to grasp without concrete examples. Lecturer L2 noted that students require contextual illustrations to internalize these values meaningfully. Lecturer L3 further explained that applying Game-Based Learning (GBL) can facilitate the delivery of Islamic values through enjoyable and experiential learning. Lecturer L5 added that *fiqh* (Islamic jurisprudence) materials could be designed as missions or game levels to enhance comprehension and participation. This finding reinforces the notion that GBL holds great potential in revitalizing PAI content, transforming it from a rigid and theoretical subject into a dynamic and engaging learning experience. With respect to the integration of Game-Based Learning (GBL), all lecturers expressed positive perspectives. Lecturer L1 considered GBL highly relevant for enhancing students' learning motivation, while Lecturer L2 highlighted the need for professional training to help educators effectively integrate Islamic values into educational games. Lecturer L3 identified the Wayground platform as a promising tool for developing interactive game-based activities in PAI learning. Additionally, Lecturer L4 stated that GBL can strengthen collaborative learning by fostering healthy competition among students. Collectively, these views reflect a growing awareness among lecturers of the pedagogical potential of technology-enhanced and game-based learning innovations.

Finally, in the aspect of assessment and feedback, the lecturers emphasized the need for a more dynamic evaluation system. Lecturer L2 suggested that automated assessment mechanisms providing instant results could better motivate students. Lecturer L4 highlighted the importance of timely feedback to help students track their learning progress in real time, while Lecturer L5 advocated for a broader evaluation framework that goes beyond final examinations to include students' participation in game-based activities. This reflects a shift toward comprehensive assessment approaches that measure both learning engagement and experiential outcomes within the GBL framework. The findings indicate that Islamic Education lecturers recognize the urgency of adopting an innovative, interactive, and student-centered learning model that aligns with the digital characteristics of today's learners. The integration of Game-Based Learning through digital platforms such as Wayground is viewed as an effective strategy to enhance motivation, engagement, and understanding of Islamic values in higher education contexts.

Design of the Instructional Game-Based Learning (GBL) Model

This model is systematically structured through five key stages that form a coherent learning flow, ranging from orientation to evaluation. Each stage plays a crucial role in fostering students' motivation, participation, and understanding of Islamic values through interactive learning experiences. The first stage, Preliminary Stage (Orientation & Motivation), serves to introduce students to the learning objectives, explain the rules of the game, and outline the points or reward system to be used. At this stage, the lecturer acts as a guide, dividing students into learning groups and initiating warm-up activities such as short PAI-themed quizzes. This phase aims to build initial motivation, create a positive classroom atmosphere, and prepare students for active engagement throughout the subsequent stages of the learning process.

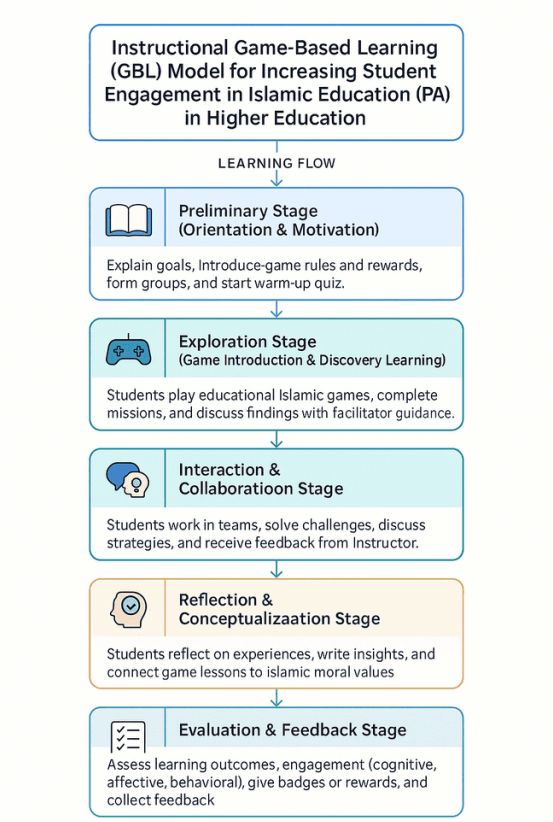

Figure 3. Design of the Instructional Game-Based Learning (GBL) Model

The second stage, Exploration Stage (Game Introduction & Discovery Learning), involves students engaging in the designed Islamic educational games. They complete a series of missions and discuss their findings under the lecturer's supervision. This stage allows students to learn independently while discovering Islamic concepts through direct experience. The approach aligns with the principles of discovery learning, emphasizing exploration, inquiry, and active participation in constructing knowledge. The third stage, Interaction & Collaboration Stage, centers on teamwork and problem-solving. In this phase, students work collaboratively to complete challenges, analyze problems, and formulate strategies. The lecturer functions as a facilitator who provides guidance and constructive feedback throughout the group activities. Through interaction and collaboration, students not only develop critical thinking and problem-solving skills but also internalize essential social values such as cooperation, respect, and effective communication in accordance with Islamic ethics.

The fourth stage, Reflection & Conceptualization Stage, is a critical phase in the internalization of values. Students are encouraged to reflect on their learning experiences, articulate personal insights, and connect the lessons derived from the games to Islamic moral principles. This process enables students to recognize the spiritual meaning behind their actions and reinforces the affective dimension of Islamic Education learning, cultivating moral and emotional awareness. The final stage, Evaluation & Feedback Stage, focuses on assessing students' learning outcomes across cognitive, affective, and behavioral dimensions. Evaluation is conducted by reviewing levels of engagement, mission achievements, and reflective responses. Lecturers may also award badges or bonus points as recognition for students' accomplishments. Additionally, this stage includes gathering student feedback to inform future improvements to the learning model. The Instructional Game-Based Learning (GBL) model offers an innovative pedagogical approach to Islamic Education in higher education. By integrating elements of gameplay, reflection, and

collaboration, this model not only enhances students' motivation and engagement but also enables a deeper understanding of Islamic values through meaningful and enjoyable learning experiences.

Creating Interactive Wayground-Based Learning Media

In the development stage, the learning media were directly created and implemented using the Wayground platform. At this stage, lecturers began transforming the instructional designs produced during the design phase into interactive digital learning media. The first step involved creating a classroom or new activity in Wayground to serve as a space for conducting Islamic Education (PAI) learning sessions. Subsequently, lecturers uploaded or composed learning content—such as questions, instructions, and narratives—based on the previously designed framework to ensure alignment with the intended learning objectives and sequence.

The next step was to arrange the learning activities in a systematic order, starting with Voting → Word Cloud → Quiz → Essay Response. This sequence was designed to establish a logical and progressive learning flow: *Voting* served to elicit students' initial perceptions, *Word Cloud* activated their prior knowledge, *Quiz* assessed conceptual understanding, and *Essay Response* deepened reflection on Islamic values learned throughout the process.

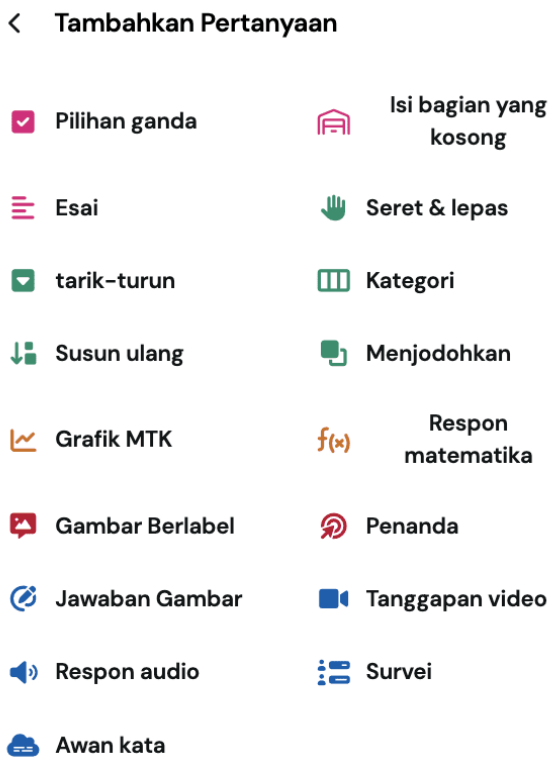

Figure 4. Display of the "Add Question" feature on the Wayground platform.

Furthermore, lecturers could embed supporting elements such as images, verses from the Qur'an, or relevant short *hadiths* to reinforce the Islamic context of each activity. The inclusion of these visual and religious elements aimed to capture students' attention while enriching the educational meaning of the learning experience. In addition, developers specified the duration of activities, number of attempts, and automated assessment mechanisms to ensure that the learning process remained measurable, structured, and efficient. A pilot test was conducted with a limited number of students to verify the visual layout, flow, and functionality of the media before full-scale implementation. Through this development phase, the Wayground-based Islamic Education

media evolved beyond a mere assessment tool to become an interactive, reflective, and engaging learning platform that enhances students' participation and understanding of Islamic principles.

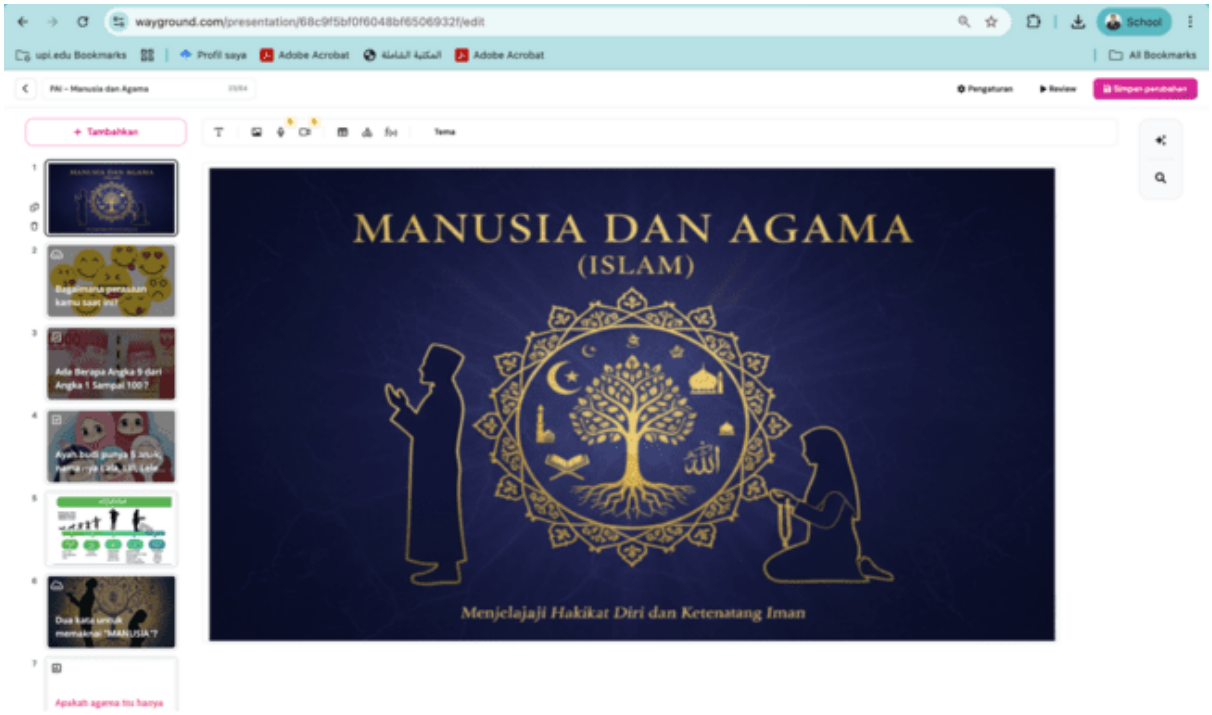

Figure 5. Display of interactive learning media creation on the Wayground platform.

Applying Wayground-Based Interactive Learning

At the implementation stage, the Wayground-based learning media was applied directly in Islamic Religious Education (PAI) classroom activities. In this phase, the instructor acts as a facilitator who guides students through a series of interactive learning activities. The session begins with the instructor providing a Wayground session code that allows students to join the designated digital classroom. Once all participants are connected, students are directed to follow the structured sequence of learning activities previously designed. The learning process begins with the Voting feature, which is used to initiate discussion and explore students' initial perceptions of the topic being addressed—such as honesty, responsibility, or ethics in Islam. This is followed by the Word Cloud feature, where students contribute keywords they associate with the lesson topic. This activity helps identify students' prior knowledge and conceptual understanding of Islamic subject matter.

Next, the Quiz feature is employed to assess students' comprehension of the material covered. The quiz consists of multiple-choice or true–false questions that directly evaluate cognitive understanding. After completing the quiz, students proceed to the Essay Response feature, where they write personal reflections on how Islamic values—such as patience, trustworthiness, and justice—can be applied in real-life contexts. Throughout the learning process, the instructor provides additional explanations, clarifies key concepts, and offers real-time feedback based on student interactions within Wayground. The platform also displays a leaderboard, showcasing individual scores and achievements dynamically. This feature fosters a healthy sense of competition while simultaneously promoting collaboration among students. Through this implementation phase, PAI learning becomes more interactive, participatory, and contextual, as students actively engage in a learning experience that integrates cognitive, affective, and spiritual dimensions—all enhanced by the innovative use of the Wayground educational technology platform.

Figure 6. Implementation of Game-Based Learning (GBL) in Islamic Education (PAI) using the Wayground platform.

Student Engagement in Wayground Learning

In Wayground-based Islamic Education (PAI) learning, student engagement serves as the central focus to create an active, meaningful, and enjoyable learning experience. There are three interrelated pillars of student engagement—cognitive, affective, and behavioral—that collectively support holistic learner development. The cognitive pillar emphasizes students' ability to understand, analyze, and relate Islamic concepts to real-life contexts. Through the use of Quiz, Word Cloud, and Essay Response features, students are encouraged to think critically and reflectively about Islamic values. For example, by completing thematic quizzes on ethics (*akhlaq*), writing reflections on honesty, or connecting Qur'anic teachings to modern social contexts, students develop a deeper, more logical, and contextual understanding of Islamic principles.

The affective pillar relates to students' attitudes, interests, and emotional involvement in the learning process. Features such as Voting and Leaderboard in Wayground foster a sense of participation, motivation, and ownership over the learning experience. Furthermore, integrating verses from the Qur'an and *hadith* into learning activities strengthens students' spiritual connection to Islamic values. Through this approach, students not only learn intellectually but also experience emotional and spiritual engagement with the religious teachings being studied. The behavioral pillar highlights students' activeness in participating and collaborating during learning activities. Wayground provides interactive features—such as Voting, Quiz, Word Cloud, and Essay Response—that encourage direct engagement, interaction, and teamwork among peers. These activities cultivate students' discipline, active participation, and habits of collaboration in a learning environment that is both cooperative and healthily competitive. The integration of these three engagement pillars through the Wayground platform makes Islamic Education learning more interactive, reflective, and meaningful. Students not only acquire religious knowledge but also develop Islamic attitudes, values, and behaviors that can be applied in their everyday lives.

Table 2. Student Engagement in Wayground Learning.

No	Pillar	Focus	Application in Wayground	Outcome
1	Cognitive	Understanding and critical thinking regarding Islamic	Utilization of Quiz, Word Cloud, and Essay Response features to assess and deepen	Students comprehend Islamic concepts logically and contextually.

		Education (PAI) materials.	understanding of Islamic concepts.	
2	Affective	Attitude, interest, and emotional connection to the learning process.	Integration of Voting, Leaderboard, and Quranic verses/Hadith to build motivation and strengthen spiritual values.	Students demonstrate higher motivation and develop a positive attitude toward Islamic values.
3	Behavioral	Participation and activeness in the learning process.	Use of Voting, Quiz, Word Cloud, and Essay Response to promote active engagement.	Students become active, disciplined, and collaborate productively.

Discussion

Design Model for Game-Based Learning (GBL)

Game-Based Learning (GBL) represents an instructional approach that integrates game mechanics to enhance learning outcomes and engagement. An effective GBL model must be grounded in sound instructional design principles, cognitive theories, and motivational strategies to ensure that learning experiences are not only enjoyable but also pedagogically meaningful. The design process begins with defining the relational structure and game world, ensuring alignment between the game environment and educational objectives. This foundation connects the narrative and mechanics of the game with targeted learning content, fostering conceptual understanding through immersive experiences. To achieve this, GBL design must integrate cognitive and learning theories that provide an embodied context for learners, allowing abstract concepts to be internalized more intuitively (Reese, 2009). A central pillar of GBL design is motivation and engagement. Incorporating challenge, fantasy, and curiosity into learning activities enhances intrinsic motivation, encouraging persistence and active participation (Lai et al., 2013). Furthermore, GBL promotes flexibility and accessibility, enabling learners to participate anytime and anywhere through digital platforms such as social media and online learning systems (Lai et al., 2014). This accessibility supports independent learning while maintaining interaction and collaboration among students. Equally important is assessment and feedback, which align game activities with intended learning outcomes. Both formative and summative evaluations are necessary to assess student performance and provide continuous feedback that reinforces learning (Gosper & McNeill, 2012). Integrating game elements such as narratives, levels, rewards, and interactive challenges enhances engagement and fosters a sense of achievement (Loor et al., 2025). A blended learning approach, combining traditional classroom instruction with game-based digital environments, further maximizes learning effectiveness and overcomes time-space limitations (Yang et al., 2023).

An interdisciplinary approach—combining insights from psychology, pedagogy, and game design—ensures that educational games are both enjoyable and effective in achieving learning objectives (Linek, 2011). Additionally, customization and adaptation of game activities to match students' cognitive levels and learning preferences are essential for maintaining engagement and achieving optimal challenge (Gosper & McNeill, 2012). Several examples illustrate the successful application of these principles. The Selene: A Lunar Creation GaME demonstrates how games can prepare learners with foundational knowledge for complex scientific concepts (Reese, 2009, 2010) Similarly, MonsoonSIM helps business students develop strategic thinking through simulation-based learning (Tumphasuwan, 2023), while Code.org's game-based lessons engage primary students in computational thinking and programming through interactive play (C.-Y. Chen et al., 2023)

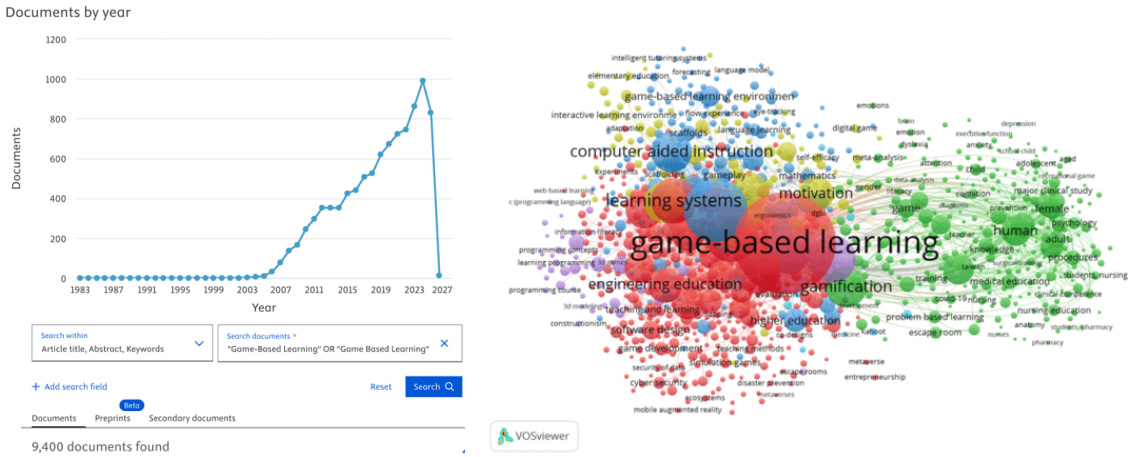

Figure 7. The trend in the number of scientific publications related to Game-Based Learning (GBL) from 1983 to 2027

The graph on the left illustrates the trend in the number of scientific publications related to Game-Based Learning (GBL) from 1983 to 2027. It can be observed that research on GBL has experienced a significant increase since 2007, reaching its peak around 2023 with nearly 1,000 published documents. This trend indicates growing global attention toward the integration of game elements in education, driven by the advancement of digital technology, the expansion of online learning, and the increasing demand for more interactive instructional strategies. The slight decline observed after 2023 is likely attributed to the limitation of publication data that have not yet been fully recorded for subsequent years.

Meanwhile, the visualization on the right presents a keyword co-occurrence network map generated using the VOSviewer software. In this map, the term *"game-based learning"* appears as the central node, surrounded by related keywords such as *learning systems*, *computer-aided instruction*, *gamification*, *motivation*, *engineering education*, and *higher education*. This visualization demonstrates that GBL research encompasses a wide range of disciplines and methodological approaches, spanning from engineering and medical education to psychology, learning motivation, and educational software design. The color and size of each node represent the degree of thematic interconnection—larger and closer nodes indicate higher co-occurrence frequency within the same research context. Together, these visualizations affirm that Game-Based Learning has emerged as one of the central themes in global educational innovation. Its rapid growth reflects a paradigm shift from conventional learning methods toward interactive, collaborative, and digitally experiential approaches that align with the needs of modern learners.

Educational Implications

The development of an Instructional Game-Based Learning (GBL) model to enhance student engagement in Islamic Education (PAI) carries significant implications for both theory and practice in higher education. This model not only redefines how Islamic values are delivered but also provides a framework for integrating digital technology into faith-based learning environments in a meaningful and pedagogically sound manner. First, from a pedagogical perspective, the GBL model promotes a paradigm shift from teacher-centered to student-centered learning. By incorporating interactive elements such as quizzes, word clouds, reflective essays, and voting features via the Wayground platform, students are encouraged to engage cognitively, emotionally, and behaviorally throughout the learning process. This aligns with constructivist and experiential learning principles, where knowledge is constructed through active participation and reflection rather than passive reception.

Second, from a technological perspective, the integration of GBL in Islamic Education demonstrates how digital tools can be utilized to foster religious literacy and moral reasoning. Instead of being a source of distraction, smartphones and digital platforms are transformed into educational instruments that support the internalization of Islamic values. This shift exemplifies the concept of *technology as pedagogy*, where digital engagement becomes a means to promote spiritual and intellectual development simultaneously. Third, the model has implications for curriculum design and instructional policy. The incorporation of GBL strategies supports the development of curricula that emphasize interactive learning, critical thinking, and moral reflection. Higher education institutions can adopt similar frameworks to improve engagement not only in Islamic Education but also in other value-based disciplines such as ethics, philosophy, and civic education. Furthermore, the model underscores the need for faculty development programs that equip educators with digital literacy and gamification-based instructional skills. Lastly, in a broader educational context, this research contributes to bridging the gap between religious learning and the digital generation's lifestyle. By aligning Islamic values with modern technological approaches, GBL encourages a holistic learning experience that nurtures intellectual curiosity, emotional connection, and ethical awareness. This innovation ensures that Islamic Education remains relevant, engaging, and transformative in the 21st-century learning ecosystem.

Conclusion

This study suggests that a smartphone-based instructional Game-Based Learning (GBL) model can enhance student engagement in Islamic Education (PAI) at the higher education level, as indicated by questionnaire responses, classroom observations, and student interviews showing higher motivation, participation, and attentiveness compared to conventional lecture-based approaches. Developed using the ADDIE framework, the model integrates missions, points, leaderboards, and value-based reflection tasks to target behavioral, emotional, cognitive, and spiritual dimensions of engagement while aligning Islamic content with the digital habits of Generation Z students. Theoretically, the findings contribute to the integration of instructional design and educational game theory within an Islamic education context; practically, they offer a framework that lecturers can adapt to design digital, value-based, and student-centered learning environments. However, the study is limited by its single institutional setting, relatively small and convenience-based sample, reliance on one platform (Wayground), and the absence of longitudinal data to assess long-term impacts on moral and cognitive development. Future research should therefore involve more diverse contexts and technologies, employ more robust and varied measures of engagement, and adopt longitudinal or comparative designs to examine the sustainability and generalizability of the model's effects.

References

Abd. Rashid, J., Abdul Aziz, A., Abdul Rahman, A., Saaid, S. A., & Ahmad, Z. (2020). The Influence of Mobile Phone Addiction on Academic Performance Among Teenagers. *Jurnal Komunikasi: Malaysian Journal of Communication*, *36*(3), 408–424. https://doi.org/10.17576/JKMJC-2020-3603-25

Afifah, A. R., Azizah, F., Firdausy, R. S., Firmansyah, M. I., & Nasrudin, E. (2025). The Effectiveness of the Qur'anic Reading Guidance Program on Students' Ability to Read the Qur'an. *Indonesian Journal of Islamic Religious Education*, *3*(1), 61–70. https://doi.org/10.63243/a0tpyz69

Al-Furaih, S. A. A., & Al-Awidi, H. M. (2021). Fear of missing out (FoMO) among undergraduate students in relation to attention distraction and learning disengagement in lectures. *Education and Information Technologies*, *26*(2), 2355–2373. https://doi.org/10.1007/s10639-020-10361-7

AlYahmady, H. H., & Al Abri, S. S. (2013). Using Nvivo for Data Analysis in Qualitative Research. *International Interdisciplinary Journal of Education*, *2*(2), 181–186. https://doi.org/10.12816/0002914

Arikunto. (2010). *Purposive sampling: complex or simple? Research case examples*. *1645*, 1–76.

Bigdeli, S., Mirhosseini, F., Mohammadi, A., Mojtahedzadeh, R., & Arabshahi, S. K. S. (2024). *Instructional Design in e-Learning Environments in Medical Education* (pp. 173–181). https://doi.org/10.1007/978-3-031-51244-5_19

Blumenfeld, P. C., Paris, A. H., & Fredricks, J. A. (2004). School Engagement: Potential of the Concept, State of the Evidence. *Review of Educational Research*, *74*(1), 59–109.

Branch, R. M. (2010). Instructional design: The ADDIE approach. In *Instructional Design: The ADDIE Approach*. https://doi.org/10.1007/978-0-387-09506-6

Brown, A. H., & Green, T. D. (2019). *The Essentials of Instructional Design*. Routledge. https://doi.org/10.4324/9780429439698

Camilleri, V. (2023). Designing GBL for Higher Education: Pitfalls & Recommendations. *European Conference on Games Based Learning*, *17*(1), 869–875. https://doi.org/10.34190/ecgbl.17.1.1900

Chen, C.-Y., Su, S.-W., Lin, Y.-Z., & Sun, C.-T. (2023). The Effect of Time Management and Help-Seeking in Self-Regulation-Based Computational Thinking Learning in Taiwanese Primary School Students. *Sustainability*, *15*(16), 12494. https://doi.org/10.3390/su151612494

Chen, P. S. (2024). *Synergistic Play Design* (pp. 119–139). https://doi.org/10.4018/979-8-3693-1022-9.ch006

Dhakal, K. (2022). NVivo. *Journal of the Medical Library Association*, *110*(2), 270–272. https://doi.org/10.5195/jmla.2022.1271

Emerson, R. W. (2021). Convenience Sampling Revisited: Embracing Its Limitations Through Thoughtful Study Design. *Journal of Visual Impairment and Blindness*, *115*(1), 76–77. https://doi.org/10.1177/0145482X20987707

Erradi, O., Barhone, J. E., & Khaldi, M. (2024). *Main Models of Design and Pedagogical Scenarisation for Online Adult Training Courses* (pp. 228–244). https://doi.org/10.4018/979-8-3693-1206-3.ch010

Fang, M., Zheng, X., Hu, W., & Shen, J. (2011). On the ADDIE-based effective instructional design for higher education classrooms. *Advanced Materials Research*, *271–273*, 1542–1547. https://doi.org/10.4028/www.scientific.net/AMR.271-273.1542

Fante, C., Ravicchio, F., & Manganello, F. (2024). Navigating the Evolution of Game-Based Educational Approaches in Secondary STEM Education: A Decade of Innovations and Challenges. *Education Sciences*, *14*(6), 662. https://doi.org/10.3390/educsci14060662

Faqihuddin, A., & Sinta, D. (2024). Peningkatan Kompetensi Digital di Perguruan Tinggi : Pengaruh Mata Kuliah Desain Digital Pendidikan Agama Islam Terhadap Pengembangan. *Wawasan: Jurnal Kediklatan Balai Diklat Keagamaan Jakarta*, *5*(1), 85–101. https://doi.org/https://doi.org/10.53800/wawasan.v5i1.279

Faqihuddin, A., & Subakti, G. E. (2022). Realizing Interactive And Fun PAI Learning In The New Normal Era Through The Masquerade Party Method. *International Conference on General Education International Conference on General Education (ICOGEN)*, 58–68. https://www.researchgate.net/publication/366846894

Flanigan, A. E., & Daleiden, B. K. (2025). The Role of Academic Delay of Gratification in Overcoming Digital Distraction During Class. *New Directions for Teaching and Learning*. https://doi.org/10.1002/tl.70002

Gosper, M., & McNeill, M. (2012). Implementing Game-Based Learning: The MAPLET Framework as a Guide to Learner-Centred Design and Assessment. In *Assessment in Game-Based Learning* (pp. 217–233). Springer New York. https://doi.org/10.1007/978-1-4614-3546-4_12

Hilton, J. (2018). Teaching religion using technology in higher education. *Teaching Religion Using Technology in Higher Education*, 1–211. https://doi.org/10.4324/9781315110615

Jenuri, Faqihuddin, A., Suresman, E., Abdullah, M., & Fahrudin. (2025). Overcoming the spiritual emptiness of students in the modern era through the integration of Al-Ghazali's human

concepts in the Islamic religious education learning model. *Cogent Education*, *12*(1). https://doi.org/10.1080/2331186X.2025.2497147

Jenuri, J., Darmawan, D., & Faqihuddin, A. (2024). Promoting Moral and Spiritual Transformation: The Role of Pesantren Ramadan Programs in Preventing and Addressing Bullying in Educational Settings. *AL-ISHLAH: Jurnal Pendidikan*, *16*(4), 4613–4629. https://doi.org/https://doi.org/10.35445/alishlah.v16i4.5875

Kumar, D. K., & Radcliffe, P. (2019). *The Effect of Smartphones on Traditional Education* (pp. 27–37). https://doi.org/10.1007/978-981-15-1401-2_3

Kurniawan, R., Bakti, I. K., Firmansyah, M., Bahri, R., Kholis, N., & Kusaeri. (2025). Islamic emotional-cognitive integration: how Islamic education shapes students' cognitive processes and outcomes through expressive writing. *British Journal of Religious Education*. https://doi.org/10.1080/01416200.2025.2523385

Lai, C.-H., Jong, B.-S., Lin, Y.-C., & Hsia, Y.-T. (2013). Adding social elements to game-based learning - An exploration. *2013 IEEE Frontiers in Education Conference (FIE)*, 698–700. https://doi.org/10.1109/FIE.2013.6684915

Lai, C.-H., Lin, Y.-C., Jong, B.-S., & Hsia, Y.-T. (2014). Adding Social Elements to Game-Based Learning. *International Journal of Emerging Technologies in Learning (IJET)*, *9*(3), 12. https://doi.org/10.3991/ijet.v9i3.3294

Linek, S. B. (2011). As You Like It. In *Handbook of Research on Improving Learning and Motivation through Educational Games: Multidisciplinary Approaches* (pp. 606–632). https://doi.org/10.4018/978-1-60960-495-0.ch029

Loor, J. V., Gracia, E. P., & Jesús, C. (2025). Design and Validation of an Instrument to Evaluate a Gamified Strategy in E-Learning Environments in Higher Education. *Journal of Information Technology Education: Innovations in Practice*, *24*, 010. https://doi.org/10.28945/5521

Mardatillah, F., Muchlinarwati, M., & Abdurrahman, D. (2025). Integrating Islamic Educational Values in Higher Education: A Framework for Social Cohesion and Peacebuilding in Aceh. *Journal of Peacebuilding & Development*, *20*(2), 150–170. https://doi.org/10.1177/15423166251342683

Meng, S., Qi, K., Shen, P., Zhang, M., Zhang, Y., Onyebuchi, N., Zhan, G., Wei, F., Tong, W., Han, Y., & Ge, X. (2025). The effects of mobile phone addiction on learning engagement of Chinese college students - the mediating role of physical activity and academic self-efficacy. *BMC Public Health*, *25*(1), 110. https://doi.org/10.1186/s12889-024-21250-w

Papakostas, C. (2024). Faith in Frames: Constructing a Digital Game-Based Learning Framework for Religious Education. *Teaching Theology and Religion*. https://doi.org/10.1111/teth.12685

Priyadarshini, V., Maheswary, U., Swami, K., Kumar, M. D., Madhusudhanan, R., & Chandrakhanthan, J. (2024). *Fostering Self-directed Learning Among Millennial and Gen Z Learners Through E-learning Platforms and ICT* (pp. 129–136). https://doi.org/10.1007/978-3-031-63569-4_12

Putera, G. N. K., & Gunada, I. W. A. (2025). Strategies and Challenges in Compiling Instructional Design with a Critical Pedagogical Approach for Generation Z Students in State Hindu Institute of Gde Pudja Mataram. *International Journal of Learning, Teaching and Educational Research*, *24*(8), 790–812. https://doi.org/10.26803/ijlter.24.8.35

Ranjan, S. (2025). Elements of Educational Game Design. In *Gamification Learning Framework for Cybersecurity Education* (pp. 349–380). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3373-0477-9.ch014

Reese, D. D. (2009). GaME Design for Intuitive Concept Knowledge. In *Handbook of Research on Effective Electronic Gaming in Education* (pp. 1104–1126). IGI Global. https://doi.org/10.4018/978-1-59904-808-6.ch064

Reese, D. D. (2010). GaME Design for Intuitive Concept Knowledge. In *Gaming and Simulations* (pp. 474–496). IGI Global. https://doi.org/10.4018/978-1-60960-195-9.ch210

Ridwan, M., Mughni, J. A., & Muiz, M. A. (2025). Moderating Religion, Bridging Cultures: The Impact of Pesantren Riyadul'Ulum Wadda'wah on Intercultural Harmony. *Indonesian Journal of Islamic Religious Education*, *3*(1), 101–110. https://doi.org/10.63243/ndw02k89

Ross, K. C. (2018). Creating Dialogical Spaces in Blended Environments. In *Online Course Management* (pp. 388–403). IGI Global. https://doi.org/10.4018/978-1-5225-5472-1.ch022

Rue. (2018). Purposive Sampling as a Tool For Informant Selection. *Ethnobotany Research and Applications*, 147-158.

Sanusi, A., Al-Rawafi, A., & Ningsih, A. G. (2024). Investigating Islamic Religious Education learning in Public Higher Education: Epistemological, ontogenic, and didactic barriers. *Indonesian Journal of Islamic Religious Education*, *2*(2), 177–188. https://doi.org/10.63243/d53wwk48

Siregar, F. R., Sukmana, Y., & Rosmansyah, Y. (2023). The Influence of Gamification on Quran Reading Learning. *2023 10th International Conference on ICT for Smart Society (ICISS)*, 1–6. https://doi.org/10.1109/ICISS59129.2023.10291695

Sulistiyani, E., Dwisapta, M. R., Rahmadhani, I. P., & Herlambang, Z. S. (2023). *Optimizing the use of smartphones to success study from home during pandemic Covid-19 era*. 090015. https://doi.org/10.1063/5.0129739

Surahman, C., Firmansyah, M. I., & bin Hamzah, M. S. (2024). Religious thinking patterns and radicalism issues in students in Indonesian Public Universities. *Indonesian Journal of Islamic Religious Education*, *2*(2), 127–140. https://doi.org/10.63243/e7j0fq04

Suresman, E., Faqihuddin, A., Jenuri, & Abdullah, M. (2025). From sorogan to digital learning: a systematic literature network analysis of pesantren learning models. *Cogent Education*, *12*(1). https://doi.org/10.1080/2331186X.2025.2580776

Tian, L., & Zhou, X. (2022). An Empirical Study on the Causes of Mobile Phone Dependence of College Students. *International Journal of Wireless Information Networks*. https://doi.org/10.1007/s10776-021-00532-9

Tumphasuwan, K. (2023). Using the Business Digital Simulation Game of MonsoonSIM in the Business Process Management Course for Creating Knowledge and Understanding of University Students. *Proceedings of the 2023 7th International Conference on Education and E-Learning*, 155–159. https://doi.org/10.1145/3637989.3638024

Wiltshier, F. (2011). Researching With NVivo 8. *Forum: Qualitative Social Research*, *12*, 23–36. http://www.qualitative-research.net/index.php/fqs/article/viewArticle/1628/3146

Wu Suen, L. J., Huang, H. M., & Lee, H. H. (2014). A comparison of convenience sampling and purposive sampling. *Journal of Nursing*, *61*(3), 105–111. https://doi.org/10.6224/JN.61.3.105

Yang, H., Liu, Y., Ma, M., Bai, X., Liu, R., & Dai, H. (2023). Gamification Teaching Design and Application in the Context of Blended Learning: *Proceedings of the 2023 14th International Conference on E-Education, E-Business, E-Management and E-Learning*, 150–156. https://doi.org/10.1145/3588243.3588260

Yusoff, M. H., Alomari, M. A., & Syafiqah, A. (2020). The development of "Sirah Prophet Muhammad (SAW)" game-based learning to improve student motivation. *International Journal of Engineering Trends and Technology*, *1*, 130–134. https://doi.org/10.14445/22315381/CATI1P224

Zhou, Y., & Deng, L. (2025). Examining the attention resumption from smartphone to class: a sequential mixed methods study. *Interactive Learning Environments*, *33*(5), 3563–3579. https://doi.org/10.1080/10494820.2024.2446533