



Developing digital gamification for Abbasid history learning in seventh-grade Islamic religious education

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Abstract: Historical learning in Islamic Religious Education (IRE), particularly Abbasid history, remains dominated by teacher-centered instruction and memorization, limiting students' engagement and conceptual understanding. Despite the proven benefits of digital gamification, evidence in IRE remains limited. This study aimed to develop and evaluate a digital gamification medium for Abbasid history and assess its effectiveness in enhancing seventh-grade students' conceptual understanding. The study employed a Research and Development approach using the ADDIE model. The developed media was validated by media and subject-matter experts, while its instructional effectiveness was assessed through a one-group pretest–posttest design using the Wilcoxon Signed-Rank Test and normalized gain (N-Gain) analysis. Expert validation indicated that the developed medium achieved acceptable feasibility, with scores of 72.7% from media experts and 76.3% from subject-matter experts. Statistical analysis revealed a significant improvement between pretest and posttest scores (Asymp. Sig. = 0.000), while the average N-Gain score of 0.6693 indicated a high increase in students' conceptual understanding. The findings suggest that instructional effectiveness resulted primarily from the constructive alignment between historical content, pedagogical design, and gamification mechanics rather than technological novelty alone. The study highlights the potential of pedagogically aligned digital gamification to enhance historical learning within IRE and provides practical guidance for integrating interactive learning environments into humanities- and religion-based education. This research extends the gamification literature into the underexplored domain of Abbasid history in IRE and demonstrates that meaningful cognitive improvement can be achieved through well-designed instructional integration without requiring sophisticated technological infrastructure.

INTRODUCTION

The integration of digital technologies has fundamentally transformed the landscape of contemporary education by fostering learning environments that are more interactive, learner-centered, and capable of significantly enhancing student engagement (Chevalier et al., 2022; Consoli et al., 2025; Ullah & Anwar, 2020). Within this transformation, gamification has emerged as a promising pedagogical approach that incorporates game design elements into educational settings to achieve instructional objectives. Beyond merely introducing entertaining features,



pedagogically grounded gamification creates meaningful learning experiences by aligning learning activities, instructional goals, and assessment mechanisms within a coherent instructional framework.

Despite the rapid advancement of digital transformation across educational sectors, its implementation in IRE remains constrained by several persistent challenges. Teaching practices in many educational institutions continue to rely predominantly on conventional teacher-centered approaches, limiting the effective integration of interactive digital learning media (Rahman et al., 2026). This situation is largely attributed to teachers' insufficient digital pedagogical competence, particularly in designing innovative technology-enhanced learning environments, as well as continuing resistance to pedagogical paradigm shifts (Zuroida et al., 2026). Furthermore, inadequate technological infrastructure, limited internet accessibility, and insufficient institutional support further hinder the development of innovative, adaptive, and transformative IRE instruction (Al-Ulya et al., 2026). Consequently, the potential of digital technologies to enhance student participation, learning motivation, and the overall quality of learning experiences in IRE has yet to be fully realized.

Islamic cultural history, one of the core components of the IRE curriculum, presents distinctive instructional challenges. Students are expected not only to memorize historical events but also to understand chronological developments, analyze causal relationships, and interpret the significance of Islamic civilization within broader social and cultural contexts (Metzger & Harris, 2018). Nevertheless, classroom instruction remains largely dominated by teacher-centered and textbook-oriented practices, leading many students to perceive Islamic history as monotonous, abstract, and difficult to comprehend (Minhaji et al., 2025).

These challenges become particularly evident in teaching the history of the Abbasid civilization, which encompasses extensive historical narratives, complex chronological sequences, and abstract conceptual relationships. Conventional instructional approaches generally emphasize factual memorization rather than historical inquiry, thereby limiting students' active engagement and constraining the development of deep conceptual understanding. Consequently, there is a pressing need for innovative instructional media capable of transforming historical content into interactive learning experiences. Digital gamification offers considerable potential to facilitate active student participation while supporting meaningful knowledge construction.

An increasing body of empirical evidence demonstrates the substantial educational benefits of digital gamification. Li et al., (2023) reported that digital gamification exerts a significant positive effect on learning outcomes by enhancing learner engagement, providing immediate feedback, and encouraging active participation throughout the learning process. Similarly, Zeng et al., (2024)

found that gamification consistently improves students' academic achievement across diverse educational contexts. Supporting these findings, Dehghanzadeh et al., (2024) concluded that successful gamification implementation depends on the constructive alignment among curriculum objectives, pedagogical approaches, assessment strategies, and learner characteristics. Conversely, poorly designed gamification may undermine intrinsic motivation and impede conceptual learning when excessive emphasis is placed on reward systems and competitive elements (Kwon & Özpolat, 2021).

Although previous studies have consistently reported promising outcomes regarding digital gamification, the existing literature remains heavily concentrated in STEM education, language learning, and computer science. Its application within IRE, particularly in the Indonesian educational context, remains relatively underexplored. Previous studies have primarily examined gamification in mathematics education (Ashriyah & Mahmudah, 2025), social science education (Pamungkas et al., 2021), and science education (Khairunnisaa' & Astimar, 2024). This disciplinary imbalance is particularly evident in IRE, where empirical investigations examining the effectiveness of digital gamification remain scarce.

This study addresses this research gap by developing a Wordwall-based digital gamification medium specifically designed for teaching Islamic cultural history within junior secondary school IRE. Unlike previous studies that primarily focused on general education subjects, the proposed instructional medium integrates gamification principles with Islamic historical content to promote both conceptual understanding and the internalization of Islamic values. Accordingly, this study extends the application of digital gamification to the relatively underexplored domain of IRE.

This study develops and empirically evaluates a digital gamification medium for teaching Islamic cultural history to ninth-grade students enrolled in IRE, with particular emphasis on the history of the Abbasid civilization. It makes two principal contributions. Theoretically, it advances the literature on digital gamification in IRE by providing empirical evidence regarding the effectiveness of a Wordwall-based learning medium for teaching Islamic cultural history. Practically, it offers a valid, practical, and effective instructional medium that serves as an innovative alternative for IRE teachers to enhance student engagement and foster deeper conceptual understanding in classroom learning.

METHODS

This study using the ADDIE instructional design model within a research and development (R&D) framework. The overall research procedure followed the five phases of the ADDIE model: Analysis, Design, Development, Implementation, and Evaluation. The following is a summary of the activities to be conducted using the ADDIE approach.

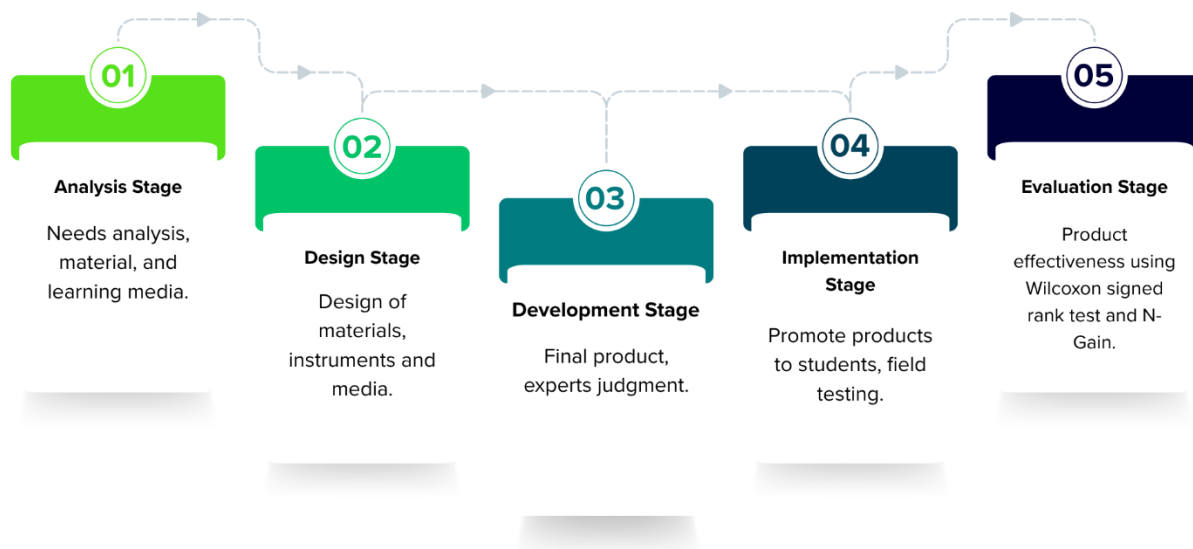


Figure 1. The Digital Gamification Media Development Process Using ADDIE Model

During the analysis stage, a comprehensive needs assessment was conducted to identify instructional needs, student characteristics, task requirements, conceptual content, and intended learning outcomes. Data were collected through open-ended interviews, classroom observations, and document analysis, including lesson plans and instructional materials. The participants comprised IRE teachers and ninth-grade students from SMPI Sunan Bonang. The collected data were analyzed descriptively to establish the instructional requirements that informed the subsequent development process. The design stage focused on developing criterion-referenced assessment instruments, selecting appropriate instructional media and learning formats, and designing the initial prototype of the gamification medium. This stage resulted in the development of expert validation instruments for both content and media specialists, practicality questionnaires for users, and pretest and posttest instruments to measure the effectiveness of the developed learning medium.

The development stage involved expert validation and product refinement. The prototype was evaluated by two experts, one specializing in instructional content and the other in educational media. The experts determined its validity and feasibility using structured validation instruments. All validation items were measured using a five-point Likert scale, where five represented the highest level of agreement and one represented the lowest (Sugiyono, 2014). The validity and practicality of the learning medium were determined by calculating the percentage score for each evaluation aspect using the formula proposed by Purwanto, (2010) and Widyastuti et al., (2017).

$$x_i = \frac{\sum x}{\sum xi} \times 100\%$$

During the implementation stage, the validated digital gamification medium was integrated into IRE instruction. The learning intervention was conducted over a three-week period, during

which students participated in learning activities using the developed Wordwall-based gamification medium. A posttest was administered following the completion of the final instructional session to assess students' learning outcomes after the intervention.

The evaluation stage examined the effectiveness of the developed learning medium through a one-group pretest-posttest design. The study involved 17 ninth-grade students as research participants. Students' learning achievement was measured before and after the intervention using the pretest and posttest instruments. Because the assumption of normality was not satisfied, differences between pretest and posttest scores were analyzed using the Wilcoxon signed-rank test. All statistical analyses were performed using IBM SPSS Statistics version 25

RESULT AND DISCUSSION

Digital Gamification Media Development Process Using the ADDIE Approach

This study developed a digital gamification-based medium for IRE learning using the ADDIE development model. The product focuses on the history of the Abbasid Caliphate for eighth-grade students and demonstrates a high level of quality based on expert validation, user-oriented design, and empirical evidence of its effectiveness in enhancing students' conceptual understanding. The developed medium is accessible through the Wordwall platform, enabling students to engage with historical content through interactive and game-based activities. The development process is described through the following stages.

1. Analysis Stage

The analysis stage aimed to identify the product requirements and determine its essential specifications. This stage consisted of three main components: needs analysis, content analysis, and media analysis. These analyses were conducted to ensure that the developed product fulfilled quality standards while remaining relevant to students' characteristics and learning needs.

1.1 Needs Analysis

The observation and interview results revealed several challenges in IRE instruction, including low student motivation, the dominance of conventional teaching approaches such as lectures, and limited access to interactive learning resources. The IRE teacher confirmed that technology-based interactive media had not yet been implemented in classroom activities:

"Islamic cultural history is generally taught using textbooks, explanations through the whiteboard, or conventional presentation slides. Some students become bored quickly and show limited participation during lessons. The availability of learning media that attracts their interest would likely improve their learning outcomes." (MHF Interview – Teacher, 17-03-2026)

The interview findings indicate that students' relatively low achievement was associated with learning activities that were perceived as less engaging. In addition, classroom observations

showed that many students actively used mobile phones during break times, with some frequently engaging in digital games.

These findings highlight the need for innovative and interactive learning solutions that correspond with students' digital habits. Therefore, this study developed a digital gamification medium for IRE, particularly focusing on Abbasid history. The selection of gamification was based on students' strong interest in game-based activities, with the expectation that digital games could be transformed into meaningful and educational experiences through the Wordwall platform.

1.2 Content Analysis

The interview results indicated that historical topics represent one of the most challenging components of IRE instruction. According to the teacher, historical materials are often extensive, narrative-based, and information-dense, which may reduce students' attention during learning activities. Furthermore, the dominance of verbal explanations makes it difficult for learners to visualise historical events, influential figures, and the development of Islamic civilisation. The teacher explained:

"My greatest challenge occurs when teaching Islamic cultural history because the material generally contains lengthy and highly textual discussions. I need to provide historical illustrations and deliver the content through engaging storytelling. However, some students still lose focus easily. They also experience difficulties in imagining historical events, figures, and the development of Islamic civilisation because the explanations are mainly verbal." (MHF Interview – Teacher, 17-03-2026)

These findings reveal a mismatch between the characteristics of historical content and students' learning preferences in the digital era. Although teachers have attempted to enrich instruction through visual illustrations and storytelling strategies, some learners continue to demonstrate limited engagement. This suggests that conventional approaches remain insufficient in addressing students' needs for understanding abstract and complex historical concepts (Musyaffa & Atno, 2025).

Previous studies have similarly reported that history-related learning tends to generate boredom when delivered through text-heavy and teacher-centred approaches (Almaidah et al., 2026; Fahrudin & Saefudin, 2025). Historical materials involving chronological events, biographies, and civilisation development require more interactive approaches to facilitate meaningful knowledge construction (Maftuchin et al., 2025). Therefore, innovative digital solutions are necessary to enhance engagement and support students' understanding of historical concepts.

Based on these considerations, this study selected Abbasid history as the focus of the gamification-based medium developed through Wordwall. The selected topic, "Learning from the

Inspiration and Contributions of Muslim Scholars during the Abbasid Era to Humanity and Civilisation,” was chosen due to its comprehensive content, including Muslim scholars, scientific contributions, and the advancement of Islamic civilisation. These aspects require an engaging and interactive presentation approach to support students’ learning experiences.

1.3 Learning Media Analysis

The observation and interview findings showed that IRE instruction at Sunan Bonang Islamic Junior High School was still largely dependent on conventional resources, particularly PowerPoint presentations and whiteboards. Consequently, classroom activities tended to be less varied and had not fully encouraged active student participation.

The teacher reported that limited access to interactive resources affected students’ concentration and motivation. Meanwhile, observations indicated that students demonstrated greater enthusiasm toward activities involving game elements, attractive visuals, challenges, and digital technology. This condition confirms the necessity of developing learning resources that are more interactive and aligned with students’ characteristics in the digital era.

Based on the needs assessment, Wordwall was selected as the development platform because it provides various educational game templates that are accessible, flexible, and capable of creating engaging learning experiences. Its interactive features were considered suitable for supporting history learning by promoting active participation and increasing students’ involvement in the learning process.

2. Design Stage

The design phase focused on developing the structure and specifications of the digital gamification medium based on the results of the analysis phase. Several activities were conducted during this stage, as follows.

2.1 Content Design

At this stage, the researchers organised and mapped the learning content as the basis for developing the Wordwall-based gamification activities. The material was adapted to the learning objectives, competency standards, and cognitive characteristics of eighth-grade students. The selected topic was “Learning from the Inspiration and Contributions of Muslim Scholars during the Abbasid Era to Humanity and Civilisation.” The content was structured according to learning outcomes, indicators, and objectives to ensure consistency between the instructional materials and the developed game activities.

The main topics integrated into the digital gamification medium included: (1) an introduction to the Abbasid Dynasty; (2) the development of Baghdad and *Bayt al-Hikmah*; and (3)

the values of productivity, literacy, and intellectual harmony among different religious communities during the Abbasid period. The content structure is presented in the following figure.

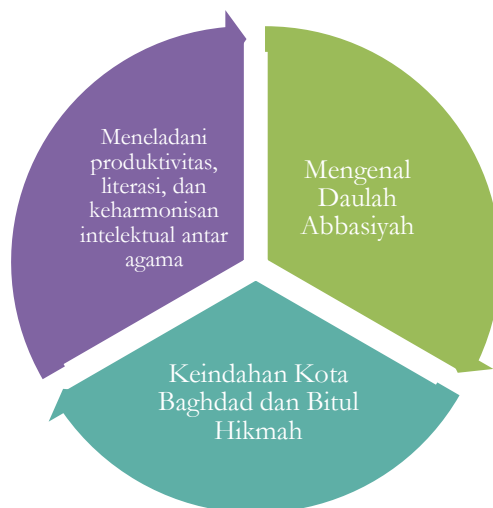


Figure 2. Material Components of Digital Gamification Media

2.2 Instrument Design

At this stage, validation instruments were developed as evaluation guidelines for assessing the quality of the developed product by expert reviewers. The media expert validation instrument consisted of three main aspects: visual presentation, software quality, and usability. This instrument was designed to obtain evaluations and recommendations regarding the feasibility and refinement of the developed learning resource. Meanwhile, the content expert validation instrument covered four aspects: visual presentation, content quality, language appropriateness, and the educational benefits of the Wordwall-based gamified activities. According to Prastowo (2013), the validation of instructional media is an essential process for determining the feasibility, validity, and suitability of a product before it is implemented with learners.

In addition to expert validation instruments, achievement tests were also developed in the form of pretest and posttest assessments. These tests were designed to measure students' understanding before and after using the developed learning resource. The test items were adjusted to students' cognitive levels, ranging from Lower-Order Thinking Skills (LOTS) to Higher-Order Thinking Skills (HOTS). Both assessments consisted of 10 multiple-choice items developed based on the predetermined learning indicators.

2.3 Media Design

During the visual design stage, relevant illustrations related to the Abbasid Dynasty were selected, including representations of Abbasid civilisation and the activities of Muslim scholars.

These visual elements were incorporated to clarify historical concepts, increase learning attractiveness, and assist students in constructing a more concrete understanding of abstract historical content.

The interface was designed using a light blue background to create a bright, comfortable, and engaging learning atmosphere. Additional visual elements, such as ocean and fish illustrations, were incorporated to reflect the geographical characteristics of Situbondo Regency, which is closely associated with coastal environments. This contextualised design approach was expected to enhance students' attention, comfort, and motivation throughout the learning process.

3. Development Stage

During the development stage, the designed Wordwall-based digital gamification media was transformed into a functional product ready for implementation. Following completion of the development process, the product underwent expert evaluation involving content and media specialists to assess its quality, feasibility, and alignment with the intended learning objectives before being tested with students. The final design of the developed digital gamification media is presented in the following figure.

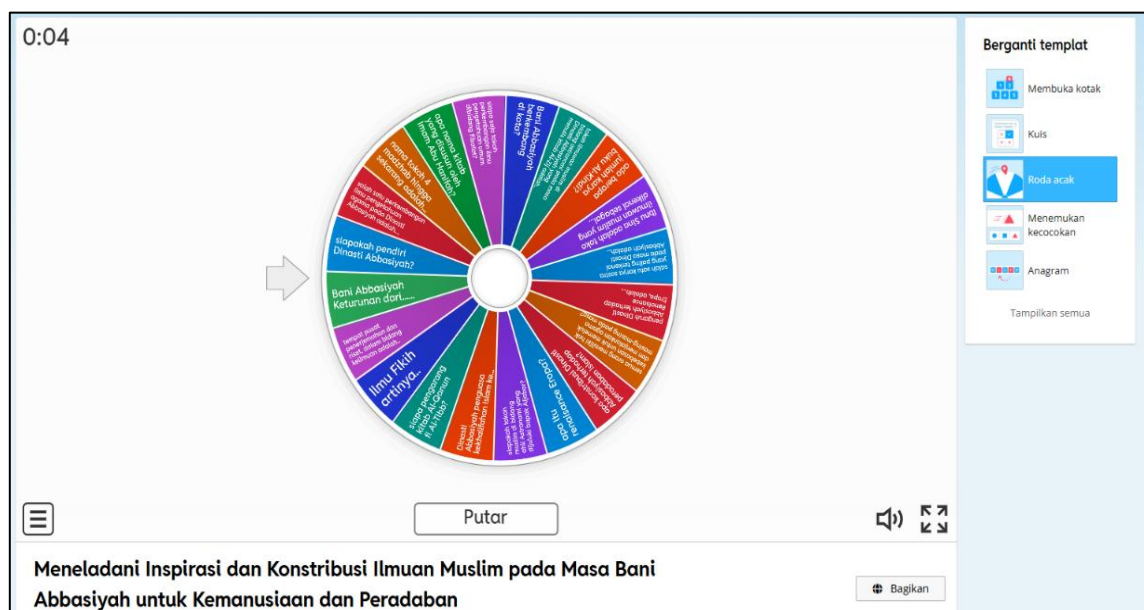


Figure 3. Design Output of the Product Using the Random Wheel Template

Furthermore, the digital gamification media developed through the Wordwall platform provides flexible template options, allowing different game formats to be applied to maintain students' interest and engagement. One example of the implemented design is the Open the Box template, as presented in the following figure.



Figure 4. Design Output of the Product Using Open the Box Template

In addition, students can monitor their achievement through the “Leaderboard” feature and activate audio functions during gameplay. The availability of these features demonstrates that the developed resource incorporates various interactive learning activities, which may reduce learning monotony and create a more engaging classroom experience.

The subsequent stage involved expert validation conducted by content and media specialists. Based on the evaluation results, the media expert assessment obtained a total score of 40. According to the feasibility criteria calculation, this score resulted in a percentage of 72,7%, which was categorised as feasible. Meanwhile, the content expert evaluation obtained a score of 42, corresponding to 76,3%, which was also classified as feasible. The interpretation criteria adopted in this study followed (Santoso, 2014) in which a feasibility level of 61–80% is categorised as feasible, while scores above 80% are classified as highly feasible. Both experts provided constructive feedback and recommendations for product refinement. A summary of the experts’ suggestions and the corresponding revisions is presented in Table 1.

Table 1. Compilation of Validator Feedback and Product Revisions

Validator Comment	Revision Result
Media Expert	
The background isn’t engaging enough for students. Choose a more appealing background color.	Replace it with a more interactive and dynamic seawater-colored background.
	

Content Expert

The practice questions need to be increased to 20 questions relevant to the subject matter so that students become more familiar with the material and understand it better.

The practice questions should be supplemented with the subject matter, bringing the total to 20 questions, up from the original 10.



4. Implementation Stage

The implementation of the digital gamification media began with an introductory activity involving an aperception and the explanation of learning objectives related to the Abbasid Dynasty. Subsequently, students completed a pretest to assess their initial understanding before the intervention. The teacher then introduced the digital gamification media, explained its features, and provided instructions regarding the rules and procedures of the game-based activities.

The learning activities using the developed digital gamification media were conducted over three weeks. During the main learning activities, students engaged with various interactive game formats embedded within the Wordwall platform, including Open the Box, Random Wheel, interactive quizzes, and matching activities. Each activity contained questions related to the Abbasid Dynasty, covering topics such as the establishment of the Abbasid Caliphate, prominent Muslim scholars, scientific developments, Islamic scholarly works, and the contributions of Islamic civilization to global knowledge and human development.

The implementation process demonstrated high levels of student engagement and enthusiasm. This was reflected in students' active participation in answering questions, discussing responses with group members, and competing to achieve the highest scores. The scoring system, time limits, and leaderboard features provided by Wordwall created a competitive yet enjoyable learning environment. Furthermore, the attractive visual interface and interactive elements encouraged students to maintain greater attention and involvement compared with conventional instructional approaches. After completing the learning activities, students were administered a posttest to evaluate their learning achievement following the implementation of the digital gamification media.

5. Evaluation Stage

The effectiveness of the digital gamification media was evaluated based on students' learning outcomes. The researchers analysed the pretest and posttest scores obtained during the

product trial. Preliminary analysis indicated that the datasets showed different distribution characteristics, as presented in the following table.

Table 2. Normality Test Results of Pretest and Posttest Data

Data	Statistic	df	Sig.
Pretest	0,147	17	0,200
Posttest	0,258	17	0,004

Based on the normality test results, the pretest data obtained a statistical value of 0,147 with a significance value (Sig.) of 0,200 (>0.05). This indicates that the pretest scores followed a normal distribution and met the normality assumption. In contrast, the posttest data produced a statistical value of 0.258 with a significance value of 0,004 ($<0,05$), indicating that the posttest scores were not normally distributed. Therefore, the assumption of normality was not fulfilled for the entire dataset because one of the groups did not meet the normal distribution criteria. Consequently, a non-parametric statistical analysis was employed to examine differences in students' performance before and after the implementation of the digital gamification media. The results of the Wilcoxon signed-rank test are presented in the following table.

Table 3. Differences in Students' Knowledge Achievement Based on the Wilcoxon Signed-Rank Test

		N	Mean Rank	Sum of Ranks
Post Test - Pre Test	Negative Ranks	2 ^a	9,00	18,00
	Positive Ranks	12 ^b	7,25	87,00
	Ties	3 ^c		
	Total	17		

a. Post Test < Pre Test

b. Post Test > Pre Test

c. Post Test = Pre Test

Test Statistics ^a	
	Post Test - Pre Test
Z	-2,177 ^b
Asymp. Sig. (2-tailed)	0,029

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The Wilcoxon signed-rank test revealed a statistically significant difference between students' learning outcomes before and after using the digital gamification media ($Z = -2,177$; $p = 0,029$). These findings demonstrate that the implementation of the developed product significantly improved students' cognitive achievement compared with conventional learning practices. Furthermore, no students experienced a decline in scores, and all participants demonstrated either improvement or maintained performance after the intervention. This finding confirms that the developed resource provided a positive contribution to students' understanding

of Abbasid history. The average cognitive learning achievement obtained from the product trial is presented in Table 4.

Table 4. N-Gain Score Analysis of Pretest and Posttest Results

Data	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_Score	17	0,00	1,00	0,7553	0,37856
Ngain_Percent	17	0,00	100,00	75,5322	37,85616
Valid N (listwise)	17				

The N-Gain analysis involving 17 students produced an average score of 0,7553, equivalent to 75,53%, with minimum and maximum values of 0,00 and 1,00, respectively. Based on the established N-Gain interpretation criteria, the average score was categorised as high, indicating that the implemented learning intervention substantially improved students' learning achievement. Although several students showed no improvement (N-Gain = 0,00), most participants demonstrated considerable progress, with some achieving the maximum gain score (N-Gain = 1,00). The standard deviation value of 0,37856 indicates variations in individual learning improvement; however, the overall effectiveness of the intervention remained within the high category. Therefore, these findings provide empirical evidence that the implementation of the Wordwall-based digital gamification media effectively enhanced students' learning outcomes and supported deeper understanding of Abbasid historical content.

Transforming IRE Learning: Investigate the impact of Digital Gamification Media to Historical Understanding

The findings of this study demonstrate that the developed digital gamification media significantly improved seventh-grade students' understanding of Abbasid history in IRE. The Wilcoxon Signed-Rank Test revealed a statistically significant difference between students' pre-test and post-test scores (Asymp. Sig. = 0.000), while the average N-Gain score of 0,75 indicates a high improvement in conceptual understanding. Furthermore, expert validation confirmed that the media met acceptable quality standards, with feasibility scores of 72,7% from media experts and 76,3% from subject-matter experts. These findings suggest that the developed gamification media is not only pedagogically feasible but also capable of facilitating meaningful cognitive improvement in learning Islamic history.

The improvement in students' understanding supports the growing body of evidence indicating that gamification contributes positively to learning achievement when game mechanics are meaningfully integrated with instructional objectives rather than merely functioning as entertaining classroom activities. A recent meta-analysis conducted by Li et al., (2023), involving 41 empirical studies, reported a large overall effect ($g = 0,822$) of gamification on learning

outcomes across educational settings. The authors concluded that well-designed gamification significantly enhances learning achievement through increased engagement, immediate feedback, and active learner participation.

The present findings reinforce these conclusions while extending them into a relatively underexplored domain, namely IRE, particularly Abbasid history. Previous gamification studies have predominantly focused on mathematics, science, language learning, and computer education, whereas historical learning within religious education has received considerably less scholarly attention. Consequently, this study contributes empirical evidence that the pedagogical benefits of gamification are transferable to historical and religious learning contexts, where abstract chronology, historical narratives, and extensive factual information often reduce students' motivation and comprehension.

A similar conclusion was reached by Zeng et al., (2024) found that gamification produces a moderate positive effect on students' academic achievement (Hedges' $g = 0,782$). Nevertheless, they emphasized that the magnitude of improvement largely depends on instructional design quality rather than the mere presence of game elements. This perspective provides an important explanation for the effectiveness observed in the present study. Rather than simply incorporating points or rewards, the developed media embedded historical content into interactive quizzes, progressive challenges, immediate feedback, and structured learning sequences. Such instructional alignment likely explains the significant learning gains obtained by the students.

The expert validation results further support this interpretation. Although the feasibility percentages (72,7% and 76,3%) indicate that certain aspects of media design can still be improved. This finding is consistent with the research result conducted by Dehghanzadeh et al., (2024), they concluded that successful gamification depends less on technological sophistication and more on constructive alignment among learning objectives, instructional activities, assessment, and learner characteristics. Therefore, the effectiveness observed in this study appears to stem from the instructional coherence embedded within the gamification design rather than from the novelty of digital technology itself.

Nevertheless, the present findings should not be interpreted as evidence that gamification is universally effective under all instructional conditions. Recent literature increasingly highlights that poorly designed gamification may produce minimal or even negative educational outcomes (Kwon & Özpolat, 2021). Reviews examining adverse effects of gamification indicate that excessive reliance on points, badges, leaderboards, and competition can reduce intrinsic motivation, create performance anxiety, and shift learners' attention from conceptual understanding toward reward acquisition. The current findings differ from these observations

because the developed media prioritizes learning objectives over competitive mechanics. Game elements function as pedagogical scaffolds that guide students in reconstructing historical knowledge instead of serving as external motivational devices alone. Consequently, the observed learning improvement appears to originate from deeper cognitive engagement rather than superficial game participation.

An important contribution of this study lies in addressing a pedagogical challenge frequently encountered in IRE. Historical topics within IRE are often perceived by students as monotonous because instructional practices remain dominated by lectures, memorization of historical facts, and textbook-centered learning (Hikmah et al., 2026; Metzger & Harris, 2018). The originality of the developed gamification media lies not merely in digitizing learning materials but in transforming historical narratives into interactive learning experiences. Students actively reconstruct chronological events, identify causal relationships among historical phenomena, solve contextual question.

Compared with previous international studies, this research therefore offers two important contributions. First, it extends empirical evidence regarding gamification into the relatively neglected field of IRE, particularly Abbasid historical learning. Second, it demonstrates that meaningful improvements in conceptual understanding can be achieved without requiring highly sophisticated technological infrastructure. Instead, instructional effectiveness emerges from careful integration between curriculum content, pedagogical design, and game mechanics. This finding broadens current perspectives in gamification research, which have largely concentrated on STEM education, by demonstrating that humanities- and religion-based subjects can benefit equally from appropriately designed digital learning environments.

Despite these promising findings, several limitations should be acknowledged. The effectiveness evaluation focused primarily on short-term cognitive achievement and did not examine long-term knowledge retention, historical thinking skills, and collaborative competencies. In addition, the study involved a limited educational context, thereby restricting the generalizability of the findings to broader educational settings. Future research should therefore employ randomized controlled trials involving larger samples across different schools, integrate affective and motivational variables, and investigate how gamification influences higher-order historical reasoning and religious literacy over extended instructional periods. Such investigations would provide a more comprehensive understanding of the pedagogical potential of gamification within IRE.

CONCLUSION

This study demonstrates that the developed digital gamification media effectively improves seventh-grade students' conceptual understanding of Abbasid history in IRE learning. The significant difference between pre-test and post-test scores, supported by a high N-Gain score (0,75) and positive expert validation, confirms that the media is both pedagogically feasible and effective in enhancing learning outcomes. The findings suggest that the observed improvement is primarily driven by the constructive alignment between content, instructional design, and gamification mechanics rather than by technological novelty alone.

This study contributes to the growing body of gamification research by providing empirical evidence from the relatively underexplored context of IRE. It demonstrates that digital gamification can transform history learning from a memorization-oriented activity into an interactive learning experience that promotes deeper conceptual understanding. These findings also indicate that meaningful learning improvement can be achieved without sophisticated technological infrastructure when pedagogical design is carefully integrated with game-based learning principles. This study is limited by its focus on short-term cognitive outcomes within a single educational setting. Future research should investigate the long-term effects of gamification on historical thinking, knowledge retention, religious literacy, and learner motivation using larger and more diverse samples across different educational contexts.

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