

The Development of Gamification-Based Qur'an Learning Media Using Wordwall at SMK Muhammadiyah 3 Singosari, Indonesia

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ABSTRACT

This study aims to develop a gamification-based Al-Qur'an learning medium through the Wordwall platform with the theme of Fastabiqul Khoirot for grade X students at SMK Muhammadiyah 3 Singosari. Al-Qur'an learning faces challenges in student engagement due to monotonous teaching methods. This development research uses the ADDIE model (Analysis, Design, Development, Implementation, Evaluation) with a gamification approach that integrates game elements into learning. The resulting product is named "QurFast: Learn Qur'an Fun and Enjoyable," an interactive digital learning medium developed using Wordwall, featuring games, leaderboards, and a point-based reward system. The research results show that this medium is valid according to material experts and media experts, practical based on teacher and student responses, and effective in increasing learning motivation and material understanding. Validation scores range from 88% to 90%, while practicality and effectiveness scores range from 82% to 92%. This medium enhances student engagement through enjoyable interactive learning while maintaining the essence of Al-Qur'an values. The study recommends a blended learning approach and the development of contextual content to optimize the use of Wordwall-based Al-Qur'an learning medium. Thus, QurFast is feasible and effective as a gamified Al-Qur'an learning medium.

ABSTRAK

Penelitian ini bertujuan untuk mengembangkan media pembelajaran Al-Qur'an berbasis gamifikasi melalui platform Wordwall dengan tema Fastabiqul Khoirot untuk siswa kelas X di SMK Muhammadiyah 3 Singosari. Pembelajaran Al-Qur'an menghadapi tantangan dalam keterlibatan siswa akibat metode pengajaran yang monoton. Penelitian pengembangan ini menggunakan model ADDIE (Analysis, Design, Development, Implementation, Evaluation) dengan pendekatan gamifikasi yang mengintegrasikan elemen permainan ke dalam pembelajaran. Produk yang dihasilkan bernama "QurFast: Belajar Qur'an Menyenangkan dan Mengasyikkan," merupakan media pembelajaran digital interaktif yang dikembangkan menggunakan Wordwall, menampilkan permainan, papan peringkat, dan sistem hadiah berbasis poin. Hasil penelitian menunjukkan bahwa media ini valid menurut ahli materi dan ahli media, praktis berdasarkan respons guru dan siswa, serta efektif dalam meningkatkan motivasi belajar dan pemahaman materi. Skor validasi berkisar antara 88% hingga 90%, sedangkan skor kepraktisan dan keefektifan berkisar antara 82% hingga 92%. Media ini meningkatkan keterlibatan siswa melalui pembelajaran interaktif yang menyenangkan sambil mempertahankan esensi nilai-nilai Al-Qur'an. Penelitian ini merekomendasikan pendekatan blended learning dan pengembangan konten kontekstual untuk mengoptimalkan penggunaan media pembelajaran Al-Qur'an berbasis Wordwall. Dengan demikian, QurFast layak dan efektif sebagai media pembelajaran Al-Qur'an berbasis gamifikasi.

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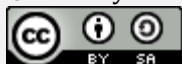
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A. INTRODUCTION

Quranic learning in the digital era has undergone significant transformation, demanding innovation in teaching methods and learning media. The integration of information and communication technology has reshaped the educational landscape, creating both opportunities and challenges in Islamic religious education. Zainuddin revealed that technology integration in learning can increase student engagement by up to 40% compared to conventional methods.¹ Furthermore, Wang demonstrated that gamification effectively improves student learning motivation and academic performance through competition elements, challenges, and immediate feedback.² A meta-analysis by Yıldırım & Şen showed that gamification positively affects students' academic achievement across various educational levels with an effect size of 0.49, indicating substantial potential for application in Quranic learning contexts that require active involvement and high consistency.³

However, the reality of Quranic learning in vocational high schools reveals a critical gap between pedagogical ideals and classroom practice. Students demonstrated low learning motivation, with preliminary observations at SMK Muhammadiyah 3 Singosari indicating that 78% of students felt disengaged due to monotonous teaching methods. Islamic Religious Education teachers reported that only 35% of students actively participated in learning activities. Most significantly, 82% of students expressed a preference for more interactive and enjoyable learning methods, while 89% stated they were more interested in using smartphones for educational purposes. This condition was exacerbated by less conducive learning schedules during the 9th to 11th periods after Dhuhr prayer, causing fatigue and reduced focus. Ihsyan & Abrianto identified that conventional one-way methods contribute to diminished motivation in studying Quranic content, ultimately impacting the internalization of religious values.⁴

The vocational school context presents unique challenges that distinguish it from general high schools. Vocational students are characterized by their practical orientation, preference for hands-on learning experiences, and strong affinity for technology-mediated instruction. Abdul Rabu revealed that students in the digital era, particularly digital natives in vocational settings, prefer learning that is interactive, visual, and technology-based.⁵ Nevertheless, existing Quranic learning approaches have not adequately addressed these distinctive characteristics, creating an urgent need for pedagogically sound yet technologically engaging learning solutions.

To address this gap, gamification through the Wordwall platform offers a promising solution. Aminaty & Jasiah found that Wordwall games can significantly increase student

¹ Z. Zainuddin et al., "The Impact of Gamification on Learning and Instruction: A Systematic Review of Empirical Evidence," *Educational Research Review* 30 (2020), <https://doi.org/10.1016/j.edurev.2020.100326>.

² z. Wang, J. Harun, And Y. Yuan, "Enhancing Reading Instruction Through Gamification: A Systematic Review Of Theoretical Models, Implementation Strategies, And Measurable Outcomes (2020–2024)," *Journal of Information Technology Education: Research* 23 (2024): 1–27, <https://doi.org/10.28945/5394>.

³ İ. Yıldırım and S. Şen, "The Effects of Gamification on Students' Academic Achievement: A Meta-Analysis Study," *Interactive Learning Environments* 29, no. 8 (2021): 1301–18, <https://doi.org/10.1080/10494820.2019.1636089>.

⁴ Hakimah Ihsyan and Danny Abrianto, "Pemanfaatan Media Pembelajaran Wordwall Untuk menanamkan Kecintaan Anak Terhadap Al-Qur'an Di Misal-Ittihad Bogor," *Jurnal Review Pendidikan Dan Pengajaran (JRRP)*, no. 3 (July 8, 2024): 9641–46, <http://journal.universitaspahlawan.ac.id/index.php/jrpp>.

⁵ S.N. Abdul Rabu et al., "Motivation, Engagement, Enjoyment, And Learning Achievement Toward Gamified Classroom Via Learning Management System To Enhance Learning Attitude," *Journal of Theoretical and Applied Information Technology* 100, no. 19 (2022): 5531–44.

activeness in Quran and Hadith learning, with enhanced participation in class discussions and enthusiasm in completing assignments.⁶ In contrast, traditional methods continue to struggle with student engagement. Febriyani & Vebrianto added that Wordwall enables active interaction with content through fun and challenging activities.⁷ However, critical perspectives must be considered: Ratinho & Martins cautioned that gamification may foster reward dependency and could be less effective in enhancing intrinsic motivation if not properly designed with sound pedagogical principles.⁸ This theoretical debate underscores the necessity of developing gamification frameworks that balance extrinsic game elements with intrinsic learning values.

This research aims to develop Wordwall gamification-based Quranic learning media with the Fastabiqul Khoirot theme that is valid, practical, and effective for improving the engagement and understanding of tenth-grade students at SMK Muhammadiyah 3 Singosari. Specifically, this research aims to: (1) produce a Wordwall-based Quranic learning media design that suits student characteristics and Fastabiqul Khoirot material, (2) test the validity of learning media from material and media aspects, (3) test the practicality of learning media based on teacher and student responses, and (4) test the effectiveness of learning media in improving student motivation and understanding of Fastabiqul Khoirot material.

Existing research has established that gamification positively impacts learning outcomes (what is known). International studies by Wang⁹ and Yıldırım & Şen¹⁰ demonstrated gamification's effectiveness across diverse educational contexts globally. However, the specific application of gamification in Quranic learning within vocational school settings remains underexplored (what is unknown). Furthermore, how gamification can be designed to integrate Islamic values such as Fastabiqul Khoirot while addressing vocational students' unique characteristics requires systematic investigation (what needs to be known).

This research fills that gap by developing a comprehensive gamification framework specifically tailored for Quranic learning in vocational contexts (how this study fills the gap). The novelty lies in the integration of the Fastabiqul Khoirot concept as the central theme in gamification design, creating a positive competitive atmosphere rooted in Islamic values. Unlike Aminaty & Jasiah who focused on increasing general student activeness,¹¹ this research develops a gamification framework specifically designed to integrate values of competing in goodness into every learning activity. While Febriyani & Vebrianto developed Wordwall

⁶ Diny Aminaty and Jasiah Jasiah, "Penggunaan Media Game Wordwall Sebagai Upaya Meningkatkan Keaktifan Siswa Dalam Pembelajaran Al Qur'an Dan Hadits," *Jurnal Pendidikan (JPn)* 25, no. 2 (January 24, 2025): 144–54, <https://doi.org/10.52850/jpn.v25i2.18372>.

⁷ Safna Febriyani and Rian Vebrianto, "Evaluasi Media Wordwall.Net Dengan Tema Makna-Nama Surah Dalam Al-Qur'an" *Nusantara: Jurnal Ilmu Pengetahuan Sosial* 12, no. 3 (2025): 1057–68, <https://doi.org/10.31604/jips.v12i3.2025>.

⁸ Elias Ratinho and Cátia Martins, "The Role of Gamified Learning Strategies in Student's Motivation in High School and Higher Education: A Systematic Review," *Heliyon* 9, no. 8 (August 2023): e19033, <https://doi.org/10.1016/j.heliyon.2023.e19033>.

⁹ Wang, Harun, and Yuan, "Enhancing Reading Instruction Through Gamification: A Systematic Review Of Theoretical Models, Implementation Strategies, And Measurable Outcomes (2020–2024)."

¹⁰ Yıldırım and Şen, "The Effects of Gamification on Students' Academic Achievement: A Meta-Analysis Study."

¹¹ Aminaty and Jasiah, "Penggunaan Media Game Wordwall Sebagai Upaya Meningkatkan Keaktifan Siswa Dalam Pembelajaran Al Qur'an Dan Hadits."

media for surah names' meanings,¹² this research develops more contextual content by connecting Quranic verses about competing in goodness with real situations of vocational high school students. Ihsyan & Abrianto examined Wordwall use at the elementary level, while this research addresses the vocational high school level with higher material complexity and integration of collaborative and competitive learning elements. Saputri et al. conducted a needs analysis for Quiz Box Wordwall media, whereas this research comprehensively develops, implements, and evaluates learning media using the complete ADDIE model.¹³ Fikria et al. designed Random Cards assisted by Wordwall but had not comprehensively tested effectiveness,¹⁴ a gap this research addresses through rigorous validity, practicality, and effectiveness testing.

The theoretical foundation of this research integrates constructivist learning theory with contemporary gamification principles. Piaget's cognitive constructivism emphasizes that learners actively construct knowledge through interaction with their environment, while Vygotsky's social constructivism highlights the importance of social interaction and cultural context in learning. These theories converge in this research's design, where students collaboratively construct understanding of Quranic concepts through gamified social interactions. Marczewski's gamification framework, which distinguishes between intrinsic and extrinsic motivators, guides the design of game elements that foster internal motivation rather than mere reward dependency¹⁵. Kapp emphasized that effective gamification creates meaningful learning experiences by integrating game elements with learning objectives, not simply adding superficial points and badges.¹⁶ This research operationalizes these interconnected theoretical perspectives by designing each gamification element to align with Quranic learning characteristics involving cognitive, affective, and psychomotor domains, thereby creating pedagogically meaningful experiences that balance engagement with deep learning.

From a theoretical perspective, this research contributes to Islamic education scholarship by providing a comprehensive gamification-based Quranic learning media development model that can be adapted for various themes and educational levels. Najjar & Salhab revealed that integrating gamification into learning processes can increase student engagement and intrinsic motivation, highly relevant to Quranic learning requiring consistency and accuracy.¹⁷ This research extends their findings by providing empirical evidence on optimizing the Wordwall platform for Quranic learning while maintaining spiritual and pedagogical values, addressing concerns about potential over-reliance on extrinsic rewards. At the international

¹² Febriyani and Vebrianto, "Evaluasi Media Wordwall.Net Dengan Tema Makna-Nama Surah Dalam Al-Qur'an."

¹³ Nadia Saputri, Putri Anggalia Puspita Sari, and Hadma Hadma, "Keperluan Media Games Quiz Box Wordwall Pada Materi Meyakini Kitab-Kitab Allah Dikelas VIII SMP NU Palangkaraya," *Ihsan*, December 1, 2024, 177–86, <http://ejournal.yayasanpendidikandzurriyatulquran.id/index.php/ihsan>.

¹⁴ Maya Dina Fikria, Mohamad Fatih, and Cindya Alfi, "Desain Random Card Berbantuan Wordwall Materi Tata Surya Melalui PBL (Problem Based Learning) Untuk Meningkatkan Literasi Sains Siswa Kelas VI SDN Sumberdiren 01 Kabupaten Blitar," *Al-Madrasah Jurnal Pendidikan Madrasah Ibtidaiyah* 8, no. 4 (October 23, 2024): 1588, <https://doi.org/10.35931/am.v8i4.4105>.

¹⁵ Andrzej Marczewski, *The Gamification Design Handbook: Even Ninja Monkeys Like To Play* (United Kingdom: Gamified UK, 2023), www.gamified.uk.

¹⁶ Karl M Kapp, Lucas Blair, and Rich Mesch, *The Gamification of Learning and Instruction Fieldbook* (San Francisco: WILEY, 2014).

¹⁷ E. Najjar and R. Salhab, "Gamification in the Learning Process," *International Journal of Online and Biomedical Engineering* 18, no. 1 (2022): 148–53, <https://doi.org/10.3991/ijoe.v18i01.26609>.

level, this research contributes to the global discourse on culturally responsive pedagogy by demonstrating how gamification can be adapted to preserve religious values while embracing technological innovation. At the national level, this research addresses the specific needs of Indonesian vocational education by developing contextually relevant Islamic education media.

From a practical perspective, this research offers actionable solutions for educators and learning media developers. It identifies factors influencing successful implementation of gamification-based learning media in vocational school contexts, including strategies to overcome technological infrastructure limitations and digital literacy gaps. The research provides a replicable development framework using the ADDIE model, complete with validity, practicality, and effectiveness measures that can guide practitioners in designing Quranic learning innovations matching students' characteristics in the digital era. Thus, the results serve as both a theoretical reference and practical guide for advancing Islamic education in contemporary contexts.

B. METHODS

This study employs Research and Development (R&D) methodology to produce Wordwall gamification-based Quranic learning media with the Fastabiqul Khoirot theme. The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) provides the development framework due to its systematic yet flexible structure, allowing iterative revisions based on evaluation results. A convergent parallel mixed-methods design integrates quantitative data (validity, practicality, and effectiveness measures) with qualitative data (learning needs, implementation challenges, and improvement suggestions) to provide comprehensive insights into media development and impact.

The ADDIE model was applied through a sequential yet iterative process aligned with the research objectives. The analysis phase, conducted in October 2024, focused on a needs assessment through semi-structured interviews with one Islamic Religious Education teacher and ten purposively selected students, supported by non-participatory classroom observations to identify learning challenges, student characteristics, and media requirements related to low engagement in Qur'anic learning. In November 2024, the design phase produced a media blueprint that combined the Fastabiqul Khoirot material with gamification features such as games, leaderboards, and point-based rewards, formulated based on the analysis findings and adjusted to the demands of the Merdeka Curriculum. The development phase took place in December 2024, during which the "QurFast" learning media was created using the Wordwall platform and subsequently evaluated by two material experts—Islamic Religious Education lecturers with master's qualifications and extensive teaching experience—and two media experts specializing in digital learning media. Field implementation began in January 2025 with 30 students of class X AKL at SMK Muhammadiyah 3 Singosari, where pre-tests and post-tests were administered to assess comprehension levels, questionnaires evaluated practicality from the perspectives of teachers and students, and observations recorded engagement and technical constraints during actual classroom use. The evaluation phase in February 2025 integrated all collected data to determine the media's validity, practicality, and effectiveness, ultimately informing the refinement of the final product and the completion of the research report.

This study was conducted at SMK Muhammadiyah 3 Singosari, Malang Regency, East Java, which was selected due to its implementation of the Merdeka Curriculum, its adequate wifi

infrastructure, the application of smartphone-based learning policies, and the documented challenges related to students' engagement in Qur'anic learning. The research participants consisted of one Islamic Religious Education teacher and 30 tenth-grade students from class X AKL, while the validation process involved four experts—two material specialists and two media specialists—who possessed relevant academic qualifications and practical experience. Data were gathered through semi-structured interviews to identify learning problems, media needs, and student preferences; non-participatory observations to analyze classroom dynamics, levels of engagement, and implementation barriers; Likert-scale questionnaires (1–5) to assess the validity and practicality of the media based on teacher and student evaluations; pre-tests and post-tests to measure students' comprehension of the *Fastabiqul Khoirot* content; and documentation consisting of syllabi, lesson plans, prior achievement records, photographs of learning activities, platform screenshots, and media usage logs. All data were analyzed using techniques adjusted to the characteristics of each data type to ensure accurate conclusions aligned with the research objectives, as summarized in the following table.

Table 1. Analysis Techniques Based on Data Types and Research Objectives

Data Type	Analysis Technique	Purpose
Qualitative (interviews, observations)	Descriptive analysis: data reduction, presentation, and conclusion drawing	Identify patterns, themes, and contextual factors influencing media development and implementation
Validity & Practicality (questionnaires)	Feasibility percentage formula with categories: Very Valid/Practical (81-100%), Valid/Practical (61-80%), Quite Valid/Practical (41-60%), Less Valid/Practical (21-40%), Not Valid/Practical (0-20%)	Determine media quality from expert and user perspectives
Effectiveness (pre-test/post- test)	N-gain formula with categories: High ($g \geq 0.7$), Medium ($0.3 \leq g < 0.7$), Low ($g < 0.3$)	Measure improvement in student understanding

Qualitative and quantitative findings were triangulated to provide holistic interpretations addressing research questions. This convergent analysis ensured that numerical effectiveness measures were contextualized within authentic implementation experiences, strengthening the validity and applicability of conclusions. All analytical procedures were grounded in empirical evidence collected from authentic learning contexts, ensuring findings reflect real-world applicability and can inform similar vocational school settings.

C. RESULT AND DISCUSSION

1. Media Development Results through the ADDIE Model

a. Analysis Stage Results

The analysis stage established the foundation for media development through needs analysis, student characteristics assessment, and learning material examination. Interviews with the Islamic Religious Education teacher revealed that conventional lecture-based methods and repetitive memorization dominated Quranic learning practices. Initial classroom observations indicated that only 10-12 students (40%) actively responded to teacher questions, while others remained passive and exhibited signs of fatigue. This finding aligns

with Ihsyan & Abrianto, who identified conventional methods as contributing factors to diminished student motivation in studying Quranic content.¹⁸

Needs questionnaire data from 120 tenth-grade students demonstrated strong preferences for innovation: 82% desired more interactive learning methods, 76% experienced difficulty contextualizing Quranic verses in daily life, and 89% expressed greater interest in smartphone-based learning. These findings support Aminaty & Jasiah, who emphasized that insufficient student engagement constitutes a critical obstacle in Quranic learning requiring media innovation.¹⁹

The development of QurFast media is grounded in the epistemological foundations of Islamic education, specifically the concepts of *tazkiyah* (purification of the soul), *ta'dib* (moral refinement), and *adab* (proper conduct). Ibn Khaldun's educational philosophy emphasizes that learning the Qur'an must integrate cognitive understanding (*ma'rifah*), spiritual internalization (*hayāh al-qalb*), and behavioral manifestation (*'amal*). This research operationalizes these principles by designing learning activities that not only facilitate memorization and comprehension but also cultivate ethical dispositions aligned with Fastabiqul Khoirot values. The gamification framework serves as a contemporary pedagogical tool (*wasīlah*) while preserving the ultimate objective (*ghāyah*) of Islamic education: developing righteous character (*akhlāq karimah*). Al-Ghazali's concept of *tarbiyah* emphasizes gradual character formation through consistent practice, which this media facilitates through repeated engagement with values-based activities.

Student characteristics analysis revealed that tenth-grade students (ages 15-18) exhibited typical Generation Z traits with extensive digital technology familiarity. Interviews indicated students spent 6-8 hours daily on smartphones for social media, gaming, and video consumption. Students demonstrated heightened enthusiasm when teachers employed audio-visual media but showed marked disengagement during traditional lectures. These characteristics corroborate Abdul Rabu, who found that digital-era students prefer interactive, visual, and technology-mediated learning.²⁰ Ermakan et al. noted that secondary school students possess cognitive development allowing abstract and critical thinking, necessitating media that accommodate these capacities through problem-solving activities.²¹

Learning material analysis focused on Fastabiqul Khoirot theme encompassing QS. Al-Maidah 5:48, QS. Al-Baqarah 2:195, and QS. Al-A'raf 7:56. Competency analysis revealed students must not only comprehend textual meanings but also identify various forms of goodness, analyze virtuous behavior, and demonstrate competitive attitudes in goodness. Teacher interviews indicated challenges in contextual delivery, with students understanding verse meanings but struggling to connect them with daily life. Lesson plan analysis showed existing methods inadequately accommodated interactive and collaborative learning needs. Saputri emphasized that Quranic learning requires comprehensive approaches encompassing

¹⁸ Ihsyan and Abrianto, "Pemanfaatan Media Pembelajaran Wordwall Untuk menanamkan Kecintaan Anak Terhadap Al-Qur'an Di Misal-Ittihad Bogor."

¹⁹ Aminaty and Jasiah, "Penggunaan Media Game Wordwall Sebagai Upaya Meningkatkan Keaktifan Siswa Dalam Pembelajaran Al Qur'an Dan Hadits."

²⁰ Abdul Rabu Et Al., "Motivation, Engagement, Enjoyment, And Learning Achievement Toward Gamified Classroom Via Learning Management System To Enhance Learning Attitude."

²¹ N.A. Ermakan et al., "Effectiveness of the Gamification Method in the Process of Phenomenon-Based Learning in Secondary School (in the Example of Kazakhstan)," *Journal of Ecohumanism* 3, no. 8 (2024): 1330–44, <https://doi.org/10.62754/joe.v3i8.4814>.

memorization, understanding, and value application.²² Consequently, Wordwall media content integrated three dimensions: cognitive (verse comprehension), affective (value internalization), and psychomotor (behavioral demonstration). Febriyani & Vebrianto demonstrated Wordwall's adaptability for various material types through varied templates, enabling optimal accommodation of each learning dimension.²³

b. Design Stage Results

The design stage produced comprehensive learning media blueprints including instructional design, interface design, and gamification activity design. Instructional design derived from specific learning objectives for each verse. QS. Al-Maidah 5:48 objectives included understanding diversity in achieving goodness, identifying various goodness forms, and internalizing competitive spirits in goodness. QS. Al-Baqarah 2:195 objectives focused on analyzing charity forms, identifying harmful behaviors, and demonstrating virtuous conduct in collaborative learning. QS. Al-A'raf 7:56 objectives encompassed identifying environmental damage forms, developing optimistic yet cautious attitudes, and connecting virtuous conduct with environmental protection. Marczewski emphasized gamification must integrate game elements with clear learning objectives to preserve pedagogical essence. Each media activity was designed to achieve specific learning objectives using appropriate game mechanisms.²⁴

The interface design, named "QurFast: Learn Quran Fun and Enjoyable," employed attractive yet professional visuals aligned with Islamic values. Color selection combined turquoise green and white symbolizing freshness and purity, with gold accents highlighting important elements. Typography utilized Poppins for general text due to digital screen readability and Amiri for Arabic text for calligraphic aesthetics. User-friendly design principles ensured students could navigate features without complex instructions. Hutahean noted gamification implementation in e-learning proves more effective with attractive and intuitive platform interfaces.²⁵ Each activity page included brief instructions, timers creating urgency, and progress indicators providing visual achievement feedback. Responsive design ensured accessibility across computers, tablets, and smartphones, accommodating device diversity.

Gamification activity design integrated various game elements adapted to verse-specific learning objectives. QS. Al-Maidah 5:48 activities employed "Quiz Race" format where students competed answering questions about goodness forms with point systems and leaderboards. QS. Al-Baqarah 2:195 activities utilized "Match Up" templates requiring students to pair virtuous behaviors with positive daily life impacts. QS. Al-A'raf 7:56 activities featured "Group Sort" where students categorized actions into environment-preserving or environment-damaging groups. Kapp emphasized gamification transcends mere point and badge additions, creating meaningful learning experiences through integrated game elements²⁶. Each activity incorporated differentiated point systems: base points for correct

²² Saputri, Sari, and Hadma, "Keperluan Media Games Quiz Box Wordwall Pada Materi Meyakini Kitab-Kitab Allah Dikelas VIII SMP NU Palangkaraya."

²³ Febriyani and Vebrianto, "Evaluasi Media Wordwall.Net Dengan Tema Makna-Nama Surah Dalam Al-Qur'an."

²⁴ Marczewski, *The Gamification Design Handbook: Even Ninja Monkeys Like To Play*.

²⁵ Parel Wellman Hutahean, *Penerapan Konsep Gamification Pada E-Learning*, ed. Masyrifatul Khoiriyah, 1st ed. (Malang: AHLIMEDIA PRESS, 2021).

²⁶ Kapp, Blair, and Mesch, *The Gamification of Learning and Instruction Fieldbook*.

answers, speed bonuses, and streak extras for consecutive correct responses. Badge systems featured tiers: Bronze for 10 completed activities, Silver for 20 activities, and Gold for completing all activities with minimum 80% scores. Real-time updated leaderboards displayed top 10 highest-scoring students, creating positive competition aligned with Fastabiquil Khoirot themes.

Collaborative and competitive learning design integrated varied game modes. Individual mode allowed self-paced independent learning, suitable for students requiring additional comprehension time. Group mode implemented cooperative learning where 4-5 students collaboratively completed challenges, encouraging discussion and peer teaching. Tournament mode created inter-group competition in completing activity series, with highest-total-point groups winning. Uz Bilgin & Gul found gamification effective in improving group cohesion and academic achievement in collaborative environments.²⁷

This design accommodated Vygotsky's Zone of Proximal Development (ZPD) principle, enabling higher-ability students to assist struggling peers, creating natural scaffolding within groups. Ariffin stated gamification aligns with constructivism principles by allowing students to actively construct understanding through content and peer interaction.²⁸

Feedback and reward systems provided sustained motivation. Immediate feedback followed each question response, displaying correct answers with brief explanations when students erred. Formative feedback concluded each activity with performance summaries (correct/incorrect answers, completion time) and improvement recommendations. Summative feedback at module conclusion displayed learning progress graphs and badge achievements. Arlt & Arlt identified gamification success factors including challenge-ability alignment, immediate feedback, engaging narratives, and meaningful rewards.²⁹ Tiered reward systems included: intrinsic rewards (mastery satisfaction, personal goal achievement), extrinsic rewards (points, digital badges), and social rewards (leaderboard recognition, teacher and peer appreciation). Bernik revealed effective e-learning gamification must consider clear learning objectives, appropriate gamification element integration, immediate informative feedback, and gradual difficulty increases—all accommodated in QurFast media design.³⁰

c. Development Stage Results

The development stage produced QurFast learning media ready for implementation following production and validation processes. Production began with paid Wordwall account creation accessing all premium features. Learning content comprised 15 interactive activities across various templates: 5 Quiz activities testing concept understanding, 3 Match Up activities pairing verses with meanings or application examples, 3 Group Sort activities classifying virtuous actions, 2 Anagram activities arranging material keywords, and 2 Random

²⁷ C. Uz Bilgin and A. Gul, "Investigating the Effectiveness of Gamification on Group Cohesion, Attitude, and Academic Achievement in Collaborative Learning Environments," *TechTrends* 64, no. 1 (2020): 124–36, <https://doi.org/10.1007/s11528-019-00442-x>.

²⁸ N.A.N. Ariffin et al., "Effectiveness of Gamification in Teaching and Learning Mathematics," *Journal on Mathematics Education* 13, no. 1 (2022): 173–90, <https://doi.org/10.22342/jme.v13i1.pp173-190>.

²⁹ Fabian Arlt and Hans-Jürgen Arlt, *Gamification of Life and the Gaming Society: The Lucid Century* (Springer, 2023), <https://doi.org/10.1007/978-3-031-45907-8>.

³⁰ A. Bernik, "Gamification Framework for E-Learning Systems in Higher Education," *Tehnicki Glasnik* 15, no. 2 (2021): 184–90, <https://doi.org/10.31803/tg-20201008090615>.

Wheel activities for enjoyable material review. Each activity included murattal audio of relevant verses, Indonesian translations, and contextualization with vocational student life. Febriyani & Vebrianto demonstrated Wordwall platform adaptability for various Quranic themes with template variations enabling educators to design activities according to learning aspects.³¹ Content development considered gradual difficulty levels (scaffolding), beginning with confidence-building easy activities, then progressing to complex activities requiring analysis and concept application.

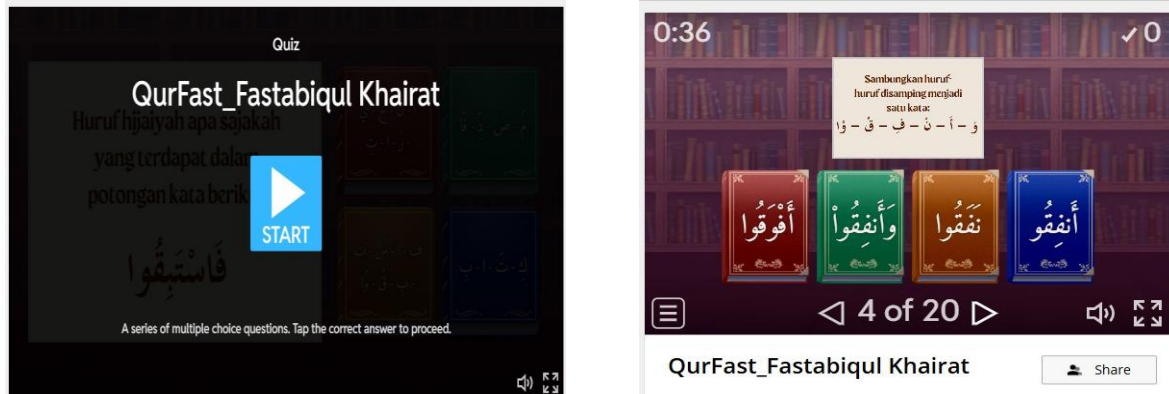


Figure 1. QurFast Media Main Page Display & Quiz Race Activity QS. Al-Maidah Verse 48

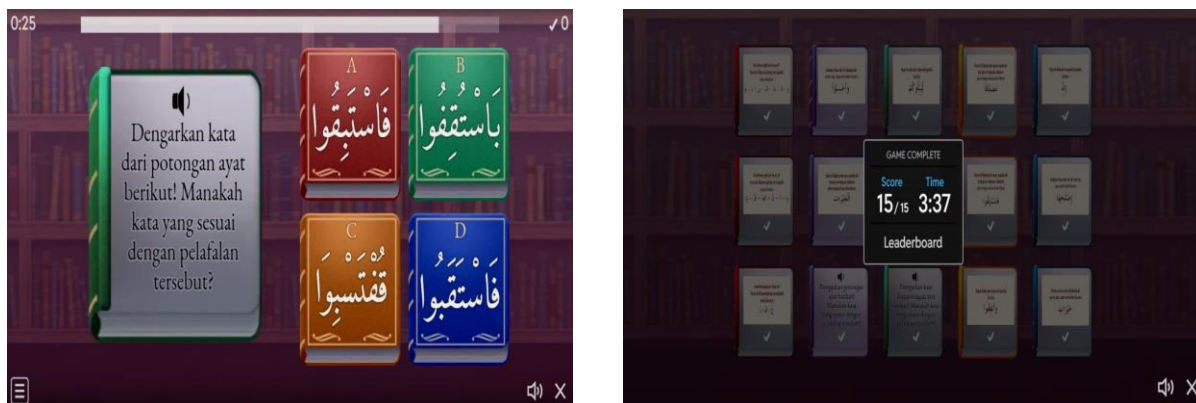


Figure 2. Match Up Activity QS. Al-Baqarah Verse 195 & QurFast Media Leaderboard and Points System

2. Validation and Reliability of the QurFast Learning Media

a. Material Expert Validation

Two Islamic Religious Education lecturers with doctoral qualifications and over 15 years' teaching experience conducted material validation, focusing on competency alignment, Quranic verse content accuracy, material depth, student life contextualization, and Quranic learning principle alignment. Results showed 88% average score (very valid category). Validator 1 assigned 90%, noting excellent competency and student characteristics alignment with strong verse contextualization, recommending additional concrete examples for QS. Al-A'raf 7:56 regarding environmental conservation. Validator 2 assigned 86%, acknowledging

³¹ Febriyani and Vebrianto, "Evaluasi Media Wordwall.Net Dengan Tema Makna-Nama Surah Dalam Al-Qur'an."

accurate deep content and innovative Fastabiqul Khoirot concept integration in gamification, suggesting detailed tajweed explanations for some verses.

Revisions incorporated validator recommendations by adding five concrete environmentally friendly behaviors relevant to vocational student contexts: waste sorting, plastic use reduction, school tree planting, electrical energy conservation, and environmental awareness campaigns. Tajweed explanations improved through recitation rule descriptions for verses containing *idgham*, *ikhfa*, and *qalqalah*, accompanied by color highlighting facilitating identification.

b. Media Expert Validation

Two Educational Technology lecturers with digital learning media development expertise and gamification research experience conducted media validation, assessing visual interface design, navigation ease, game template appropriateness, gamification system effectiveness, and platform use technical aspects. Results showed 90% average score (very valid category). Validator 1 assigned 92%, praising attractive user-friendly interface design, appropriate color and font selection, and well-integrated gamification system, suggesting font size consistency improvements in some slides. Validator 2 assigned 88%, acknowledging excellent game template variety aligned with learning objectives and motivating point and leaderboard systems, recommending detailed usage guides for first-time student access.

Improvements standardized font sizes: 16pt for instruction text, 14pt for main content, and 20pt for Arabic verse text. Interactive usage guides added to front pages included 2-minute tutorial videos explaining media access, activity participation, progress monitoring, and leaderboard competition. Palaniappan & Noor emphasized gamification strategies support independent learning in online environments, making clear guidance crucial for implementation success.³²

c. Overall Validation Summary

Overall validation confirmed QurFast learning media suitability in the very valid category. Table 1 presents validation results summary from content and media experts.

Table 2. Summary of Expert Validation Results

Validation Aspect	Validator	Score (%)	Average (%)	Category
Content	Material Expert 1	90	88	Very Valid
Content	Material Expert 2	86		
Media	Media Expert 1	92	90	Very Valid
Media	Media Expert 2	88		
Overall Average			89	Very Valid

Table 2 demonstrates QurFast learning media received excellent validation from both content and media aspects with 89% overall average. This indicates media met Quranic content appropriateness and digital learning media design standards. Febriyani & Vebrianto obtained similarly high validation results in their Wordwall media research for Quranic

³² K. Palaniappan and N.M. Noor, "Gamification Strategy to Support Self-Directed Learning in an Online Learning Environment," *International Journal of Emerging Technologies in Learning* 17, no. 3 (2022): 104–16, <https://doi.org/10.3991/ijet.v17i03.27489>.

learning, confirming Wordwall platform suitability for religious material when developed with proper instructional design.³³ Validator feedback-based revisions produced final products ready for actual learning implementation.

d. Instrument Validity and Reliability

All research instruments underwent validity and reliability testing before implementation. The material comprehension test instrument (20 multiple-choice items) was validated through expert judgment by two assessment experts and empirically tested through pilot testing with 35 students from different classes. Item analysis using point-biserial correlation showed 18 items with validity coefficients ranging from 0.32 to 0.68 (valid), while 2 items were revised. Reliability testing using KR-20 produced coefficient 0.82 (high reliability). Practicality questionnaires (teacher and student versions) underwent content validity testing through expert judgment with Content Validity Index (CVI) scores of 0.89 and 0.91 respectively. Reliability testing using Cronbach's Alpha produced coefficients of 0.88 (teacher questionnaire) and 0.86 (student questionnaire), both indicating high internal consistency. The ARCS motivation questionnaire was adapted from validated instruments with construct validity testing through Confirmatory Factor Analysis (CFA) showing adequate model fit (CFI = 0.94, RMSEA = 0.06) and Cronbach's Alpha reliability of 0.90. These rigorous instrument validation processes strengthen the credibility of media effectiveness claims presented in this research.

3. Implementation Results of QurFast in Classroom Settings

a. Implementation Stage Results

Implementation occurred in class X AKL at SMK Muhammadiyah 3 Singosari with 30 students across 4 meetings (8 class hours). A blended learning approach combined face-to-face with online learning through QurFast media. The first meeting introduced media usage and administered pre-tests measuring students' initial Fastabiqul Khoirot material understanding. Pre-test results showed 58.3 average score (scale 100), indicating moderate understanding: 3 students (10%) scored above 75, 12 students (40%) scored 60-75, and 15 students (50%) scored below 60. Teachers then explained QurFast media access procedures, account creation, and activity participation. Observations revealed high initial enthusiasm from students encountering media displays.

b. Implementation Strategies and Student Engagement

Second and third meetings focused on implementing learning activities using QurFast media with varied strategies. The second meeting employed individual learning strategies where students independently accessed and completed QS. Al-Maidah 5:48 and QS. Al-Baqarah 2:195 activities. Observations showed 28 of 30 students (93%) enthusiastically completed all activities, while 2 students experienced technical issues with internet disconnections. Teachers provided solutions by enabling smartphone hotspot access. Wordwall platform data indicated 25-minute average activity completion time with 78.5

³³ Febriyani and Vebrianto, "Evaluasi Media Wordwall.Net Dengan Tema Makna-Nama Surah Dalam Al-Qur'an."

average score (scale 100). The highest-scoring student (95) reported enhanced enjoyment and motivation from point-based systems.

The third meeting utilized collaborative learning strategies by dividing students into 6 groups of 5 members each. Groups collaboratively completed QS. Al-A'raf 7:56 activities and tournament mode combining all three verses. Observations documented intense inter-member interactions, with discussions about appropriate answers and highest-point acquisition strategies. Uz Bilgin & Gul found gamification effective in improving group cohesion and academic achievement, confirmed by 5 of 6 groups successfully completing tournament mode with scores exceeding 80%.³⁴

Student experiences using QurFast media were documented through participatory observation and informal interviews during implementation. Observations noted interesting behavioral patterns: typically passive students became active due to leaderboard motivation, students spontaneously assisted struggling peers even in individual mode, and students requested additional activity completion time beyond class hours. These patterns indicate QurFast media successfully created enjoyable yet meaningful learning experiences. Aminaty & Jasiah similarly found Wordwall games increased participation in class discussions,³⁵ questioning courage, and assignment completion enthusiasm. Students began connecting Fastabiqul Khoirot concepts with their lives, including competing to complete school projects with optimal quality, competing to assist peers struggling with lessons, and competing in surrounding community social activities.

c. Implementation Challenges and Solutions

Implementation obstacles and solutions were documented for future improvement. Technical obstacles included unstable internet connections experienced by 5 students (17%), browser compatibility issues where 3 students using suboptimal default phone browsers were directed to install Chrome, and 2 students forgetting account passwords requiring resets. Pedagogical obstacles included 4 students excessively focusing on points and badges while neglecting material understanding, and 2 students feeling pressured by leaderboard competition due to consistently low rankings. Alshammari (2020) noted technical problems can reduce gamification-based learning effectiveness, emphasizing infrastructure preparation importance.³⁶

Technical obstacle solutions included teachers providing backup hotspots, providing pre-learning Chrome installation guides, and activating user-friendly "forgot password" features. Pedagogical obstacle solutions included teachers facilitating end-of-activity reflections emphasizing content understanding importance over point acquisition, and creating alternative leaderboards based on individual progress rather than absolute scores, motivating lower-ability students. Astashova et al. warned game use in learning must be closely

³⁴ Uz Bilgin and Gul, "Investigating the Effectiveness of Gamification on Group Cohesion, Attitude, and Academic Achievement in Collaborative Learning Environments."

³⁵ Aminaty and Jasiah, "Penggunaan Media Game Wordwall Sebagai Upaya Meningkatkan Keaktifan Siswa Dalam Pembelajaran Al Qur'an Dan Hadits."

³⁶ M.T. Alshammari, "Evaluation of Gamification in E-Learning Systems for Elementary School Students," *TEM Journal* 9, no. 2 (2020): 806–13, <https://doi.org/10.18421/TEM92-51>.

supervised by educators to reduce distraction risks and ensure focus remains on learning objectives, proving effective in overcoming emerging obstacles.³⁷

d. Critical Analysis: Potential Bias Factors

Several potential bias factors must be acknowledged in interpreting implementation results. First, novelty effect may have artificially inflated student engagement and motivation. The introduction of new technology-based media naturally generates initial enthusiasm that may diminish over extended use. Longitudinal studies are necessary to determine whether sustained engagement persists beyond the novelty period. Second, teacher observation bias may have influenced data interpretation, as the implementing teacher was also the primary observer. Although structured observation protocols were employed, the dual role potentially introduced subjective interpretations favoring positive outcomes. Third, digital skill level differences among students created unequal starting points. Students with higher digital literacy navigated the platform more efficiently, potentially demonstrating better engagement not solely attributable to media design but to pre-existing technological competence. Future research should control for baseline digital literacy levels and employ independent observers to minimize these biases.

The fourth meeting conducted post-tests, learning reflections, and student response questionnaires to QurFast media. Post-test results showed significant improvement with 81.7 average score (scale 100): 18 students (60%) scored above 80, 10 students (33%) scored 70-80, and only 2 students (7%) scored below 70. This improvement indicates media effectiveness in enhancing student understanding of Fastabiqul Khoirot material. Reflection sessions revealed insights about student attitude changes toward Quranic learning. Students reported transformed perceptions from considering Quranic learning difficult and boring to finding it interesting and enjoyable. The Islamic education teacher provided positive testimony regarding media effectiveness in enlivening typically quiet drowsy classroom atmospheres, with students becoming more active and questioning, some requesting additional home activities. Ihsyan & Abrianto reported similar success using Wordwall to instill Quranic love through enjoyable approaches, strengthening findings about gamification's positive impact on student attitudes.³⁸

4. Evaluation Stage Results

a. Practicality Assessment

The evaluation stage measured QurFast learning media practicality and effectiveness through response questionnaires and learning outcome analysis. Media practicality was assessed from teacher and student responses regarding ease of use, instruction clarity, time efficiency, and media usefulness. Teacher response questionnaires comprised 20 Likert-scale (1-5) statement items covering ease of use (5 items), curriculum alignment (5 items), learning efficiency (5 items), and student impact (5 items). Results showed 4.6 average score (scale 5) or 92% (very practical category). Teachers rated student impact aspect highest (94%) and ease of use (93%), with lowest but still high rating on learning efficiency (89%). Teachers

³⁷ N.A. Astashova, S.K. Bondyрева, and O.S. Popova, "Gamification Resources In Education: A Theoretical Approach" *Obrazovanie i Nauka* 25, no. 1 (2023): 15-49, <https://doi.org/10.17853/1994-5639-2023-1-15-49>.

³⁸ Ihsyan and Abrianto, "Pemanfaatan Media Pembelajaran Wordwall Untukmenanamkan Kecintaan Anak Terhadap Al-Qur'an Di Misal-Ittihad Bogor."

noted that initial setup time requirements (internet connection verification, student logins) constituted minor issues outweighed by substantial positive impacts.

Student response questionnaires comprised 25 statement items covering media appearance (5 items), ease of use (5 items), material clarity (5 items), activity interest (5 items), and learning benefits (5 items). Results showed 4.45 average score (scale 5) or 89% (very practical category). Per-aspect analysis showed highest ratings on activity interest (93%) and media appearance (91%), with lowest rating on material clarity (85%). Table 2 presents student response questionnaire results summary per aspect.

Table 3. Student Response Questionnaire Results on QurFast Media

Aspect	Average Score	Percentage (%)	Category
Media Appearance	4.55	91	Very Practical
Ease of Use	4.40	88	Very Practical
Material Clarity	4.25	85	Very Practical
Interest in Activities	4.65	93	Very Practical
Learning Benefits	4.40	88	Very Practical
Overall Average	4.45	89	Very Practical

Table 3 demonstrates students provided highly positive responses to QurFast media with all aspects in very practical category. Activity interest aspect received highest score (93%), indicating gamification design successfully created high engagement. Abdul Rabu et al. revealed gamification contributes to increased motivation and student involvement, confirmed by high interest aspect scores³⁹. Material clarity aspect received relatively lower score (85%). Statement item analysis revealed some students considered tajweed explanations insufficiently detailed, requiring more audio examples. This feedback informed further development by adding repeatable murattal audio features and more comprehensive tajweed explanations. Saputri et al. in their needs analysis similarly found students greatly need visual and interactive learning media to increase activeness and motivation, aligning with this study's findings.⁴⁰

b. Effectiveness Assessment: Learning Outcomes

QurFast learning media effectiveness was measured through learning outcome improvement analysis using pre-test and post-test data. Pre-tests administered before media implementation measured students' initial Fastabiqul Khoirot material understanding, while post-tests administered after four learning sessions measured final understanding. Test instruments comprised 20 multiple-choice questions covering cognitive aspects C1 (remembering), C2 (understanding), C3 (applying), and C4 (analyzing) aligned with learning objectives. Pre-test results showed 58.3 average score with 12.4 standard deviation, while post-test results showed 81.7 average score with 8.6 standard deviation. The 23.4-point average score increase indicates significant student understanding improvement. N-gain calculation using formula $g = (S_{\text{post}} - S_{\text{pre}}) / (S_{\text{max}} - S_{\text{pre}})$ yielded 0.56, categorized as moderate ($0.3 \leq g < 0.7$). Table 3 presents pre-test and post-test results comparison.

³⁹ Abdul Rabu et al., "Motivation, Engagement, Enjoyment, And Learning Achievement Toward Gamified Classroom Via Learning Management System To Enhance Learning Attitude."

⁴⁰ Saputri, Sari, and Hadma, "Keperluan Media Games Quiz Box Wordwall Pada Materi Meyakini Kitab-Kitab Allah Dikelas VIII SMP NU Palangkaraya."

Table 4. Comparison of Pre-test and Post-test Results

Category	Pre-test	Post-test	Improvement
Number of Students	30	30	-
Highest Score	80	95	+15
Lowest Score	35	60	+25
Average Score	58.3	81.7	+23.4
Standard Deviation	12.4	8.6	-3.8
Students Passing (≥ 75)	3 (10%)	28 (93%)	+25 (83%)
N-gain	-	0.56	Moderate Category

Table 4 demonstrates significant improvement across all learning outcome indicators. Learning completion increased dramatically from 10% to 93%, indicating QurFast media effectively helped the majority of students achieve minimum competency. Standard deviation decrease from 12.4 to 8.6 shows media effectiveness in reducing understanding gaps between students, as lower-ability students experienced greater improvement. Wang et al. stated gamification proves effective in improving students' academic performance through competition elements, challenges, and immediate feedback, confirmed by this study's results⁴¹. Yildirim & Şen in their meta-analysis study found 0.49 gamification effect size on academic achievement, while this study produced 0.56 N-gain, slightly higher, indicating QurFast media possesses good effectiveness even compared to average results of other gamification studies.⁴²

These findings both confirm and extend previous research. The N-gain of 0.56 confirms Yildirim & Şen's meta-analytic findings about gamification's positive effects, while refining understanding by demonstrating that culturally contextualized gamification (integrating Fastabiqul Khoirot values) may produce slightly stronger effects than generic gamification approaches.⁴³ However, these results challenge the assumption that gamification universally benefits all learners equally. The finding that 7% of students felt pressured by leaderboard competition suggests individual differences in competitive orientation must be considered, partially contradicting overly optimistic claims about gamification's universal applicability. This nuanced finding extends Almeida warning about potential negative motivational effects of poorly designed gamification systems.⁴⁴

Effectiveness analysis per cognitive aspect provided insights about media strengths and weaknesses in facilitating learning. Aspect C1 (remembering) showed improvement from 65% average to 88%, aspect C2 (understanding) increased from 60% to 85%, aspect C3 (applying) increased from 52% to 78%, and aspect C4 (analyzing) increased from 48% to 72%. Most significant improvement occurred in aspects C1 and C2, indicating media highly effectiveness for basic cognitive level learning. Improvement in aspects C3 and C4, although smaller than basic aspects but still significant, shows gamification activities such as Group Sort and tournament mode successfully facilitated higher-order thinking skills. Fikria in research on Random Card assisted by Wordwall similarly found effectiveness in improving

⁴¹ Wang, Harun, and Yuan, "Enhancing Reading Instruction Through Gamification: A Systematic Review Of Theoretical Models, Implementation Strategies, And Measurable Outcomes (2020–2024)."

⁴² Yildirim and Şen, "The Effects of Gamification on Students' Academic Achievement: A Meta-Analysis Study."

⁴³ Yildirim and Şen.

⁴⁴ Cláuvín Almeida et al., "Negative Effects of Gamification in Education Software: Systematic Mapping and Practitioner Perceptions," *Information and Software Technology* 156 (April 2023): 107142, <https://doi.org/10.1016/j.infsof.2022.107142>.

students' analysis, synthesis, and evaluation abilities.⁴⁵ This strengthens arguments that Wordwall platform suits not only rote learning or simple understanding but can also facilitate higher-order thinking skills development when designed with appropriate instructional strategies.

c. Effectiveness Assessment: Learning Motivation

Media effectiveness was also measured from learning motivation aspect using motivation questionnaires adapted from ARCS Model (Attention, Relevance, Confidence, Satisfaction). Questionnaires administered before and after media implementation comprised 20 statement items. Results showed learning motivation increase from 62% average to 85%, with 0.61 N-gain (moderate category). Attention aspect increased most significantly from 60% to 90%, indicating media successfully attracted and maintained students' attention during learning. Relevance aspect increased from 65% to 83%, showing students began recognizing connections between material and their lives. Confidence aspect increased from 58% to 82%, indicating scaffolding and feedback systems in media helped students build Quranic learning confidence. Satisfaction aspect increased from 65% to 86%, showing students felt satisfied with learning experiences using QurFast media.

Table 5. Learning Motivation Improvement Based on ARCS Model

Aspect	Before (%)	After (%)	Improvement (%)	N-gain	Category
Attention	60	90	+30	0.75	High
Relevance	65	83	+18	0.51	Moderate
Confidence	58	82	+24	0.57	Moderate
Satisfaction	65	86	+21	0.60	Moderate
Average	62	85	+23	0.61	Moderate

Covrig et al. revealed gamification-based media use increases students' interest and involvement in learning,⁴⁶ aligning with motivation improvement findings in this study. Najjar & Salhab added gamification integration can increase students' intrinsic motivation,⁴⁷ reflected in Relevance and Satisfaction aspect improvements indicating motivation extends beyond extrinsic (reward) to intrinsic (understanding value).

5. Social Dynamics, Value Internalization, and Behavioral Change

a. Social Dynamics: Collaboration and Competition

Evaluation of collaboration and competition aspects in learning revealed interesting social dynamics. Group activity observations showed 80% of groups demonstrated good cooperation with active discussion and clear task distribution, while 20% of groups experienced certain member domination. Students reported enjoying collaborative aspects, noting opportunities to learn from more capable peers and increased questioning confidence in small groups. Competitive aspects through leaderboards received varied responses: 70% of

⁴⁵ Fikria, Fatih, and Alfi, "Desain Random Card Berbantuan Wordwall Materi Tata Surya Melalui PBL (Problem Based Learning) Untuk Meningkatkan Literasi Sains Siswa Kelas VI SDN Sumberdiren 01 Kabupaten Blitar."

⁴⁶ M. Covrig et al., "Students' Engagement and Motivation in Gamified Learning" *Amfiteatru Economic* 25, no. Special Is (2023): 709–30, <https://doi.org/10.24818/EA/2023/S17/1003>.

⁴⁷ Najjar and Salhab, "Gamification in the Learning Process."

students stated competition motivated them and felt challenged to improve performance, 25% stated competition provided pressure but remained positive as it encouraged harder study, and 5% (2 students) felt pressured and lost motivation due to consistently low rankings.

Table 6. Student Responses to Collaboration and Competition Aspects

Aspect	Number of Students	Percentage (%)	Notes
Group Collaboration			
Good Cooperation	24	80	Active discussion, clear task distribution
Certain Member Dominance	6	20	Need teacher guidance
Leaderboard Competition			
Positively Motivated	21	70	Feel challenged to improve performance
Motivated with Pressure	7	23	Positive pressure encourages studying harder
Feel Pressured	2	7	Need alternative approach

Uz Bilgin & Gul found gamification effectively increases group cohesion and academic achievement in collaborative environments, confirmed by 80% of groups showing good cooperation.⁴⁸ To address competition's negative impact on lower-ability students, teachers implemented alternative leaderboards based on individual progress and gave special appreciation to students showing greatest improvement, regardless of absolute scores. This strategy effectively increased motivation of two initially pressured students, who reported reduced embarrassment as continuous daily improvement mattered most.

b. Value Internalization and Behavioral Change

Evaluation of Fastabiqul Khoirot value internalization was conducted through student behavior observation and in-depth interviews. Observations during implementation and two weeks after showed positive behavioral changes in majority of students. Teachers reported students began showing initiative in helping struggling peers without prompting, becoming more active in school social activities such as food sharing programs for cleaning staff. Some students were observed competing to complete group assignments with optimal quality, competing to arrive punctually to class, and competing to submit assignments before deadlines.

Interviews with 15 students revealed 12 students (80%) stated their Fastabiqul Khoirot understanding transformed from "theoretical concept" to "values practicable in daily life." Students reported recognizing that competing in goodness extended beyond pious individuals to include small actions like helping peers understand lessons or disposing trash properly. Students expressed motivation to consistently perform good deeds alongside friends, making virtuous acts more enjoyable. Ihsyan & Abrianto reported Wordwall succeeded in instilling Quranic love through enjoyable learning experiences, while this study demonstrates media

⁴⁸ Uz Bilgin and Gul, "Investigating the Effectiveness of Gamification on Group Cohesion, Attitude, and Academic Achievement in Collaborative Learning Environments."

effectiveness for internalizing deeper Quranic values, encompassing not only love but also life value application.⁴⁹

c. Pedagogical Mechanisms of Value Internalization

The internalization of Fastabiqul Khoirot values through gamification operates through several pedagogical mechanisms grounded in social learning theory and communities of practice. First, modeling and observational learning occurred as students observed peers demonstrating virtuous behaviors in competitive and collaborative contexts, providing concrete exemplars of abstract Qur'anic principles.⁵⁰ Second, legitimate peripheral participation enabled students to gradually move from peripheral observation of competitive goodness to full participation through scaffolded activities.⁵¹ Third, social habituation through repeated engagement in values-based activities created behavioral patterns that extended beyond the immediate learning context⁵². The point system and leaderboards served as cultural tools mediating the internalization process, making abstract values tangible and measurable.⁵³

However, critical analysis reveals that observed behavioral changes during the four-week implementation period may represent surface-level compliance rather than deep dispositional transformation. Kohlberg's moral development theory suggests that genuine internalization of ethical values requires progression from external reward orientation (Stage 1-2) to internalized ethical principles (Stage 5-6). The short implementation period primarily engaged extrinsic motivation mechanisms, and longitudinal evaluation is essential to determine whether Fastabiqul Khoirot values become intrinsic character traits or remain contingent on external reward structures. Future research should employ delayed post-tests (3-6 months after implementation) and naturalistic observations in non-gamified contexts to assess the sustainability of behavioral change and genuine value internalization.

6. Media Strengths, Weaknesses, and Development Recommendations

a. Media Strengths and Weaknesses

Evaluation of media strengths and weaknesses based on implementation provides comprehensive reflection for further development. Identified strengths include: first, highly significant student involvement increase from 40% to 93%, supported by attractive interactive gamification design. Second, learning format flexibility allowing adaptation for various strategies (individual, collaborative, competitive) according to needs. Third, evaluation ease and immediate feedback helping teachers monitor student progress real-time and students receive immediate improvement feedback. Fourth, high accessibility through

⁴⁹ Ihsyan and Abrianto, "Pemanfaatan Media Pembelajaran Wordwall Untuk menanamkan Kecintaan Anak Terhadap Al-Qur'an Di Misal-Ittihad Bogor."

⁵⁰ Emerald Henderson, "The Educational Salience of Emulation as a Moral Virtue," *Journal of Moral Education* 53, no. 1 (January 2, 2024): 73–88, <https://doi.org/10.1080/03057240.2022.2130882>.

⁵¹ Chunxian ZHENG, "Situated Learning as Legitimate Peripheral Participation," *Philosophy Study* 10, no. 10 (October 28, 2020), <https://doi.org/10.17265/2159-5313/2020.10.006>.

⁵² Nur Alfin Hidayati et al., "Exploring the Implementation of Local Wisdom-Based Character Education among Indonesian Higher Education Students," *International Journal of Instruction* 13, no. 2 (April 1, 2020): 179–98, <https://doi.org/10.29333/iji.2020.13213a>.

⁵³ Sungjin Park and Sangkyun Kim, "Leaderboard Design Principles to Enhance Learning and Motivation in a Gamified Educational Environment: Development Study," *JMIR Serious Games* 9, no. 2 (April 20, 2021): e14746, <https://doi.org/10.2196/14746>.

various devices supporting independent learning outside classrooms. Fifth, effective integration between gamification approaches and constructivism learning facilitating active and social learning. Alanzi & Taloba affirmed gamification-based adaptive feedback mechanisms increase learning assessment effectiveness, proven by teacher ease identifying students needing additional help through Wordwall dashboard.⁵⁴ Abu-Hammad & Hamtini (2023) revealed gamification approaches can make online learning possess face-to-face learning effectiveness levels, confirmed by QurFast media success in blended learning.⁵⁵

Identified weaknesses include: first, technology and internet connection dependence becoming barriers when infrastructure is inadequate, experienced by 17% of students during implementation. Yaşar et al. identified technological infrastructure limitations as primary barriers to gamification adoption,⁵⁶ constituting major concerns for implementation in schools with limited facilities. Second, potential distraction from main learning material when students excessively focus on competing for points and badges, experienced by 13% of students. Astashova et al. warned game use must be closely accompanied by educators to reduce distraction risks, demonstrating teacher role importance in guiding students to focus on material understanding rather than merely chasing rewards.⁵⁷ Third, limitations in assessing affective and psychomotor aspects; media proves highly effective for cognitive aspects but less optimal for directly assessing tajweed recitation or spiritual attitudes.

Zolkina et al. explained gamification-based media limitations for affective and psychomotor assessment, necessitating combination with other assessment methods such as reading practice and behavioral observation.⁵⁸ Fourth, content design challenges balancing game elements and material depth, requiring special instructional design expertise. Fiş Erümit & Karakuş Yılmaz revealed gamification design complexity providing play sensations while maintaining learning essence, becoming valuable lessons in this study⁵⁹. Fifth, participation inequality risks when students possess limited tech-savviness or restricted access, although only experienced by 7% of students but still requiring attention. Gejandran & Abdullah revealed technology usage ability gaps as main obstacles to implementing gamification-based media, necessitating special mentoring strategies for students experiencing difficulties.⁶⁰

⁵⁴ A.A. Alanzi and A.I. Taloba, "Gamification and Deep Learning-Driven Transformer Feedback Mechanism for Adaptive Language Learning Assessment," *Journal of Machine and Computing* 5, no. 2 (2025): 789–803, <https://doi.org/10.53759/7669/jmc202505062>.

⁵⁵ R.M. Abu-Hammad and T.M. Hamtini, "A Gamification Approach for Making Online Education as Effective as In-Person Education in Learning Programming Concepts," *International Journal of Emerging Technologies in Learning* 18, no. 7 (2023): 28–49, <https://doi.org/10.3991/ijet.v18i07.37175>.

⁵⁶ H. Yaşar, M. Kıyıcı, and A. Karataş, "The Views and Adoption Levels of Primary School Teachers on Gamification, Problems and Possible Solutions," *Participatory Educational Research* 7, no. 3 (2020): 265–79, <https://doi.org/10.17275/per.20.46.7.3>.

⁵⁷ Astashova, Bondyrev, and Popova, "Gamification Resources In Education: A Theoretical Approach"

⁵⁸ A.V. Zolkina, N.V. Lomonosova, and D.A. Petrusevich, "Gamification as a Tool of Enhancing Teaching and Learning Effectiveness in Higher Education: Needs Analysis," *Science for Education Today* 10, no. 3 (2020): 127–43, <https://doi.org/10.15293/2658-6762.2003.07>.

⁵⁹ S. Fiş Erümit and T. Karakuş Yılmaz, "Gamification Design in Education: What Might Give a Sense of Play and Learning?," *Technology, Knowledge and Learning* 27, no. 4 (2022): 1039–61, <https://doi.org/10.1007/s10758-022-09604-y>.

⁶⁰ P. Gejandran and N. Abdullah, "Gamification in E-Learning: A Systematic Review of Benefits, Challenges, and Future Possibilities," *Journal of Logistics, Informatics and Service Science* 11, no. 2 (2024): 84–104, <https://doi.org/10.33168/JLISS.2024.0206>.

b. Development Recommendations

Development recommendations for media based on evaluation results encompass several aspects. First, developing offline or hybrid versions accessible without internet connections to address infrastructure limitations. Second, adding more complete murattal audio features with repetition and more detailed tajweed explanations to address psychomotor aspect deficiencies. Third, developing comprehensive teacher training modules enabling optimal media implementation with strategies to reduce distraction and maximize concept understanding. Fourth, integration with school Learning Management Systems (LMS) to facilitate learning management and student progress tracking. Fifth, developing content for other Quranic themes using identical frameworks to provide consistent learning experiences. Sixth, adding adaptive features adjusting difficulty levels based on student performance to accommodate ability diversity. Palaniappan & Noor emphasized gamification strategy importance supporting independent learning, facilitated through adaptive features and richer content.⁶¹ Bernik conveyed gamification implementation success also depends on educator competence, making teacher training modules key to this learning innovation sustainability.⁶²

7. Theoretical and Practical Implications of QurFast Gamification Model

a. Theoretical Implications

This study's theoretical implications contribute to gamification theory development in Islamic religious education. This research proves Marczewski's gamification principles and Piaget-Vygotsky's constructivism theory can be effectively integrated in Quranic learning possessing unique characteristics.⁶³ Toda developed educational gamification framework emphasizing learner-centered design aligned with learning objectives, applied and proven effective in this study.⁶⁴ This study's contribution provides concrete models of how gamification frameworks can be adapted for Quranic learning by considering cognitive, affective, and psychomotor aspects holistically. Zhao provided multilayer gamification framework overview integrating constructivism theory, adapted in this research for Quranic learning with special focus on Fastaibil Khoiroth theme as central value.⁶⁵ This study also confirms Ariffin findings that gamification aligns with constructivism principles by allowing learners to actively construct understanding through interaction, manifested in QurFast media collaborative and competitive activities.⁶⁶

Furthermore, this research extends gamification theory by demonstrating how Islamic epistemological foundations can be integrated with contemporary pedagogical frameworks. The synthesis of *tazkiyah*, *ta'dib*, and *adab* concepts with Marczewski's intrinsic-extrinsic motivation framework creates a culturally grounded gamification model that transcends

⁶¹ Palaniappan and Noor, "Gamification Strategy to Support Self-Directed Learning in an Online Learning Environment."

⁶² Bernik, "Gamification Framework for E-Learning Systems in Higher Education."

⁶³ Muttaqin Kholis Ali, Al Muhtadibillah Ali, and Arrahmil Hasanah, "Pengembangan Game Edukasi Interaktif Perhitungan Waris Dalam Pendidikan Agama Islam Menggunakan Scratch," *Indo-MathEdu Intellectuals Journal* 5, no. 4 (July 30, 2024): 4373–86, <https://doi.org/10.54373/imeij.v5i4.1635>.

⁶⁴ Armando Toda, Alexandra I. Cristea, and Seiji Isotani, *Gamification Design for Educational Contexts: Theoretical and Practical Contributions*, *Gamification Design for Educational Contexts: Theoretical and Practical Contributions* (Springer International Publishing, 2023), <https://doi.org/10.1007/978-3-031-31949-5>.

⁶⁵ D. Zhao et al., "An Innovative Multi-Layer Gamification Framework for Improved STEM Learning Experience," *IEEE Access* 10 (2022): 3879–89, <https://doi.org/10.1109/ACCESS.2021.3139729>.

⁶⁶ Ariffin et al., "Effectiveness of Gamification in Teaching and Learning Mathematics."

Western secular education paradigms.⁶⁷ This theoretical contribution addresses the gap identified by several scholars regarding the need for culturally responsive gamification frameworks in non-Western educational contexts. The research demonstrates that when gamification elements are designed to reinforce rather than replace traditional Islamic educational values, they can serve as effective *wasīlah* (means) toward the *ghāyah* (ultimate objectives) of Islamic education⁶⁸.

However, critical theoretical tensions remain unresolved. The tension between extrinsic motivators (points, badges, leaderboards) and intrinsic spiritual development (*ikhlas*, sincerity in worship and learning) requires ongoing theoretical refinement. While this study demonstrates short-term effectiveness, the long-term implications of conditioning students to associate Qur'anic learning with game-like rewards warrant careful theological and pedagogical consideration. Future theoretical work should explore how gamification transitions from external scaffolding to internalized disposition, ensuring that students eventually engage with the Qur'an for its inherent spiritual value rather than gamified rewards.

b. Practical Implications

This study's practical implications provide guidance for educators and Islamic religious learning media developers. First, this research shows user-friendly Wordwall platform can be practical solution for teachers with limited technical expertise desiring learning innovation implementation. Febriyani & Vebrianto explained Wordwall can be adapted for various Quranic learning themes,⁶⁹ and this study reinforces this by providing empirical evidence of its effectiveness. Second, the utilized development framework (ADDIE) can be adopted by other teachers or developers to create similar learning media with different themes. Panis (2020) stated ADDIE model provides systematic framework for learning media development, proven to produce valid, practical, and effective products.⁷⁰ Third, strategies for overcoming technical and pedagogical obstacles documented in this study can reference implementation in other schools with similar contexts. Fourth, integration of Quranic value concepts (Fastabiqul Khoirot) as gamification central theme provides model of how Islamic religious education can be packaged attractively without losing spiritual essence and religious values. Kapp emphasized gamification must create meaningful learning experiences, manifested in this study through Fastabiqul Khoirot value internalization not only understood conceptually but also applied in students' daily behavior.⁷¹

⁶⁷ Wilk Oliveira et al., "Tailored Gamification in Education: A Literature Review and Future Agenda," *Education and Information Technologies* 28, no. 1 (January 29, 2023): 373–406, <https://doi.org/10.1007/s10639-022-11122-4>.

⁶⁸ A.M. Ahmad et al., "Diversifying Quranic Revision Methods Using Gamification-Based Teaching Material for Tahfiz Education," *International Journal of Evaluation and Research in Education* 13, no. 2 (2024): 987–96, <https://doi.org/10.11591/ijere.v13i2.26218>.

⁶⁹ Febriyani and Vebrianto, "Evaluasi Media Wordwall.Net Dengan Tema Makna-Nama Surah Dalam Al-Qur'an."

⁷⁰ I.C. Panis et al., "Design Gamification Models in Higher Education: A Study in Indonesia," *International Journal of Emerging Technologies in Learning* 15, no. 12 (2020): 244–55, <https://doi.org/10.3991/ijet.v15i12.13965>.

⁷¹ Kapp, Blair, and Mesch, *The Gamification of Learning and Instruction Fieldbook*.

c. **Practical Implementation Framework**

For practitioners seeking to replicate this approach, the following implementation framework is recommended:

1. **Pre-Implementation Phase:** Conduct thorough needs analysis including digital infrastructure assessment, student digital literacy baseline measurement, and teacher technological readiness evaluation. Allocate 2-3 weeks for teacher training and pilot testing with small student groups.
2. **Implementation Phase:** Begin with individual learning modes to build student confidence, gradually introduce collaborative activities, and implement competitive elements only after establishing supportive classroom norms. Schedule regular reflection sessions to emphasize learning objectives over point accumulation.
3. **Post-Implementation Phase:** Conduct delayed assessments (3-6 months) to evaluate value internalization sustainability, gather longitudinal feedback on behavioral changes in non-gamified contexts, and adjust content based on cumulative learner analytics.
4. **Infrastructure Considerations:** Prepare offline alternatives for students with limited connectivity, establish device-sharing protocols for equitable access, and create technical support systems (peer mentors, quick-reference guides) to minimize disruption.
5. **Ethical Safeguards:** Monitor for signs of unhealthy competition or reward dependency, implement alternative assessment for students uncomfortable with leaderboards, and consistently emphasize intrinsic value of Qur'anic knowledge beyond gamification mechanics.

This practical framework addresses the limitations identified in the current study and provides actionable guidance for educators in diverse contexts, particularly those facing similar technological and pedagogical constraints as SMK Muhammadiyah 3 Singosari.

8. Study Limitations

Several limitations must be acknowledged. First, the short implementation duration (4 weeks, 8 class hours) limits conclusions about long-term effectiveness and value internalization sustainability. Second, single-site implementation at SMK Muhammadiyah 3 Singosari constrains generalizability to other vocational school contexts with different student characteristics or technological infrastructure. Third, absence of control group prevents definitive causal claims about media effectiveness; observed improvements may partially result from teacher attention, novelty effect, or maturation. Fourth, self-reported data in questionnaires and interviews may be influenced by social desirability bias, with students reporting positive experiences to please researchers or teachers. Fifth, limited affective and psychomotor assessment means media impact on tajweed recitation quality and spiritual attitudes remains insufficiently measured. Sixth, researcher bias as the implementing teacher also served as primary observer, potentially influencing data collection and interpretation despite structured protocols.

These limitations suggest directions for future research: longitudinal studies tracking value internalization over academic years, multi-site implementations across diverse vocational school contexts with varied technological infrastructure, experimental designs with control groups receiving conventional instruction, triangulation of self-reported data

with independent observations and objective performance measures, integration of tajweed recitation assessments and spiritual development instruments, and involvement of external observers to minimize researcher bias. Addressing these limitations will strengthen evidence base for gamification-based Qur'anic learning media effectiveness and provide more nuanced understanding of conditions under which such interventions succeed or encounter challenges.

The development of QurFast gamification-based Qur'anic learning media through the ADDIE model successfully produced a valid (89% average), practical (teacher: 92%, student: 89%), and effective (N-gain learning outcomes: 0.56, N-gain motivation: 0.61) learning medium. Implementation at SMK Muhammadiyah 3 Singosari demonstrated significant improvements in student engagement (40% to 93%), learning completion (10% to 93%), and Fastabiqul Khoirot value understanding and internalization. The research contributes theoretically by integrating Islamic epistemological foundations with contemporary gamification principles and practically by providing replicable development frameworks and implementation strategies for educators. Critical analysis reveals potential biases (novelty effect, observer bias, digital skill differences) and limitations (short duration, single site, no control group) requiring future longitudinal and multi-site research to establish long-term effectiveness and value internalization sustainability⁷². Despite limitations, findings demonstrate that well-designed gamification can serve as effective pedagogical tools for engaging Generation Z students in meaningful Qur'anic learning while preserving spiritual essence and Islamic educational values.⁷³

D. CONCLUSION

This development research successfully produced a Wordwall gamification-based Qur'anic learning medium named "QurFast" with the Fastabiqul Khoirot theme that meets valid, practical, and effective criteria. The medium, developed through the ADDIE model, demonstrated very valid category with expert validation score of 89%, high practicality based on teacher and student responses (92% and 89% respectively), and significant effectiveness in improving student understanding (N-gain: 0.56) and motivation (N-gain: 0.61), with learning completion increasing from 10% to 93%. Beyond cognitive enhancement, the medium facilitated Fastabiqul Khoirot value internalization manifested in behavioral changes where students began competing in performing good deeds. This study offers a novel model for integrating Islamic value-based gamification with constructivist learning for Qur'anic education. The research provides empirical evidence that gamification principles and constructivism theory can be effectively integrated in Qur'anic learning while maintaining spiritual dimensions and religious values, creating positive competitive atmospheres aligned with Islamic teachings where students not only compete for points but are also inspired to apply values in real life. Practically, this research addresses low engagement problems of Generation Z students in Qur'anic learning by offering replicable media development models and implementation strategies for diverse educational contexts. At the classroom level, Islamic Religious Education teachers should implement the medium with blended learning

⁷² Almeida et al., "Negative Effects of Gamification in Education Software: Systematic Mapping and Practitioner Perceptions."

⁷³ Siti Hasrinafasya Che Hassan, Syadiah Nor Wan Shamsuddin, and Nor Hafizi Yusof, "Towards Designing a Framework for Adaptive Gamification Learning Analytics in Quranic Memorisation," *Pertanika Journal of Science and Technology* 31, no. 1 (October 20, 2022): 257–78, <https://doi.org/10.47836/pjst.31.1.16>.

approaches, provide guidance ensuring students focus on material understanding rather than merely pursuing points, conduct regular reflections on value application, and implement alternative assessment strategies to accommodate diverse student abilities. Institutional support requires schools to provide adequate technological infrastructure, establish teacher training programs on gamification-based media development, and allocate resources for learning platform licenses. Education Departments should develop policies encouraging Islamic Religious Education innovation through infrastructure provision and systematic professional development. Future research should develop similar media for other Qur'anic themes, conduct experimental studies with control groups for rigorous effectiveness testing, create offline versions for schools with infrastructure limitations, and implement longitudinal studies measuring long-term impacts on value internalization and character formation. Higher education institutions need to integrate digital learning media development competencies into Islamic Religious Education teacher preparation curricula. This research demonstrates that technological innovation and Islamic educational values can be synergistically integrated to create meaningful learning experiences for contemporary Muslim students. By grounding gamification design in authentic Islamic epistemological foundations while leveraging contemporary pedagogical frameworks, educators can bridge the gap between traditional religious education and digital-native learners' expectations. The findings underscore that when thoughtfully designed with cultural responsiveness and pedagogical rigor, gamification-based learning media can serve as effective instruments for achieving the ultimate objectives of Islamic education: cultivating knowledgeable, morally upright, and spiritually committed individuals who embody Qur'anic values in their daily lives. This research thus contributes to the broader discourse on digital Islamic education, providing both theoretical foundations and practical frameworks for future innovations that honor religious traditions while embracing technological progress.

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