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Development of Muslim Adventure Educational Game for Islamic Religious Education in Primary Schools

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Abstract

The development of digital technology demands innovation in interactive learning media that are in line with the characteristics of the digital native generation. In Islamic Religious Education (PAI) learning in elementary schools, the use of conventional methods such as lectures and textbooks is still dominant, thus reducing student motivation and engagement. This study aims to develop a Muslim Adventure Educational Game as an innovative and engaging PAI learning medium. The research method uses research and development (R&D) with the ADDIE model. The research subjects involved 30 fifth-grade elementary school students in Majalengka Regency, who were tested through one-to-one, small group, and large-scale trials. Data were collected through needs questionnaires, validation by material experts, media, language, and student responses. The results showed that the game was categorized as very feasible with an average expert validation score of 4.55 and student responses of 4.15. These findings confirm that the integration of Islamic values in educational games can increase student interest and engagement in PAI learning.

Keywords: *Educational Games; Islamic Religious Education; Elementary School*

Abstrak

Perkembangan teknologi digital menuntut inovasi media pembelajaran yang interaktif dan sesuai dengan karakteristik generasi digital native. Dalam pembelajaran Pendidikan Agama Islam (PAI) di sekolah dasar, penggunaan metode konvensional berupa ceramah dan buku teks masih dominan sehingga menurunkan motivasi dan keterlibatan siswa. Penelitian ini bertujuan mengembangkan Muslim Adventure Educational Game sebagai media pembelajaran PAI yang inovatif dan menarik. Metode penelitian menggunakan research and development (R&D) dengan model ADDIE. Subjek penelitian melibatkan 30 siswa kelas V SD di Kabupaten Majalengka, yang diuji melalui tahap one-to-one, kelompok kecil, dan uji coba skala luas. Data dikumpulkan melalui angket kebutuhan, validasi ahli materi, media, bahasa, serta respon siswa. Hasil penelitian menunjukkan bahwa game memperoleh kategori sangat layak dengan skor rata-rata validasi ahli 4,55 dan respon siswa 4,15. Temuan ini menegaskan bahwa integrasi nilai Islami dalam game edukasi mampu meningkatkan minat dan keterlibatan siswa dalam pembelajaran PAI.

Kata kunci : Game Edukasi' Pendidikan Agama Islam; Sekolah Dasar.

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I. Introduction

The development of digital technology in the era of the industrial revolution 4.0 has had a great influence on the transformation of the world of education. The paradigm shift from teacher-centered learning to student-centered learning demands the presence of learning media that is more interactive, flexible, and in accordance with the characteristics of the native digital generation. The UNESCO report emphasizes that the use of digital technology in primary education can increase students' motivation, understanding of concepts, and active participation (George-Reyes et al., 2024; Tomczyk, 2024). In line with that, various international studies in the last ten years have shown that game-based learning has great potential to improve the quality of learning, especially through interactivity mechanisms, challenges, and instant feedback (Giannakas et al., 2018; Jamaludin et al., 2025; Lampropoulos & Kinshuk, 2024; Sari & Jamaludin, 2025; Triantafyllou et al., 2025).

In Islamic Religious Education, the learning problems faced tend to be more complex. PAI has a fundamental role in shaping children's morals, spirituality, and character from an early age, but its learning practice in elementary school still often uses lecture and memorization methods (Abdullah & Amalia, 2025; Kamila, 2023; Tumangger, 2025). This conventional learning pattern has an impact on low student involvement and lack of interest in learning PAI subjects (Qutub, 2025). In fact, in order for Islamic values to be deeply embedded, a learning approach is needed that not only conveys cognitive material, but is also fun, interactive, and relevant to students' lives.

The results of a preliminary study in grade V SD/MI in Majalengka Regency reinforce the existence of this problem. The majority of students show a passive attitude when participating in PAI learning. Questionnaire data given to 30 students showed that 72% felt bored with conventional learning methods, while 68% stated that they were more interested in learning through game-based digital media. In addition, interviews with teachers revealed the limitations of innovative media in PAI learning, so that students have less variety in learning. These initial findings are the basis that the development of technology-based learning media, especially educational games, is an urgent need.

Literature reviews in the last ten years have also shown consistent patterns regarding research trends in this field. In the period 2015–2018, most research on educational games focused on exact subjects such as math and science (Abdullah & Amalia, 2025; Qutub, 2025). In the 2019–2022 period, research on Android-based applications began to develop with positive results on increasing student learning motivation (Hediansah & Surjono, 2019; Siregar et al., 2021). In 2023–2025, research related to gamification and game-based learning will increasingly expand to various disciplines, but specifically for PAI learning in elementary schools is still rare. These results show that there is a fairly clear research gap, namely the limited innovation of educational games, which specifically integrate Islamic values in PAI learning at the elementary school level.

Seeing this gap, this study seeks to make a scientific contribution by developing the Muslim Adventure Educational Game as a PAI learning medium in elementary schools. This game is designed to provide a more enjoyable learning experience by combining elements of entertainment, interactivity, and Islamic values. The contribution of this research is not only practical, namely helping teachers provide innovative learning media, but also theoretical by enriching the literature on the development of game-based learning in religious education.

The main purpose of this study is to develop an educational game Muslim Adventure that is suitable for use in PAI learning in elementary schools, determine the feasibility level of the product based on expert validation, and assess student responses to the products produced. This research is expected to provide theoretical benefits in the form of strengthening literature studies on gamification in religious education, and practical benefits in the form of providing alternative learning media that are interesting, easy to use, and relevant to the needs of elementary school students.

The novelty of this research lies in the development of Islamic educational games that are specifically aimed at PAI learning in elementary schools. The resulting product not only presents material in text or visual form, but also integrates Islamic values through characters, challenges, and in-game reward systems. As such, this study differs from previous research that generally focused on the development of educational games for general subjects.

II. Research Method

This research uses a research & development approach with the aim of producing a product in the form of a Muslim Adventure game application as a learning medium for Islamic Religious Education in elementary schools. The procedure used refers to the stages of ADDIE (Analysis, Design, Development, Implementation, and Evaluation) in the development process (Branch, 2010). The research subjects were 30 fifth-grade elementary school students in Majalengka Regency, Indonesia. All participants were involved gradually in the product testing process, which consisted of one-to-one testing, small group testing, and field testing.

The product research and testing stages included (1) the analysis stage, which involved conducting a needs analysis through observation and distributing questionnaires to students to identify media problems and needs; (2) the design and development stage, which began with designing the game flow, compiling Islamic Religious Education materials, designing the visual display, and developing the Muslim Adventure application; (3) the validation stage, which examined the feasibility of the Muslim Adventure game through a validation process by experts; and (4) the implementation stage, which involved three testing stages with a total of 30 students:

a. One-to-one testing involving 3 students to identify clarity of instructions, ease of navigation, and initial media display.

b. Small group testing involving 7 students to assess material understandability, interactivity, and initial responses to the media.

c. Field testing, involving 20 students, aimed to obtain comprehensive user response data on aspects of ease of use, attractiveness of the display, appropriateness of the material, and learning motivation.

The validation procedure was conducted by material experts, media experts, and language experts. The material expert validation assessed the suitability and accuracy of the Islamic Religious Education content for the learning objectives. Media expert validation assessed the application's visual appearance, navigation, and interactivity, while linguist validation assessed language clarity and suitability for the developmental level of elementary school students. Input from the experts was used as the basis for product revisions and refinements prior to the final feasibility assessment.

The data collection instruments used include: (1) observation sheets, (2) student needs questionnaires, (3) expert validation questionnaires, and (4) student response questionnaires. The interpretation of the results of the learning media feasibility test is based on the average score obtained from the assessment using the Likert scale of 1–5. The range of mean scores is then categorized into five levels of eligibility. If the mean value is in the range of 4.21–5.00, then the product is declared in the "Very Feasible" category. If the mean value is in the range of 3.41–4.20, then it is in the "Feasible" category. Furthermore, if the mean is in the range of 2.61–3.40, it is categorized as "Quite Feasible". For the range of 1.81–2.60, the product is in the "Less Feasible" category, while the mean value in the range of 1.00–1.80 indicates the "Not Feasible" category.

III. Result and Discussion

A. Research Result

The results of the research and development carried out show the achievements at each stage in accordance with the established procedures, which can be described as follows.

1. Student Needs Analysis

The results of the needs analysis carried out through a questionnaire on elementary school students in Majalengka Regency showed that the interest in learning PAI was quite good, but learning still tended to be monotonous because it was dominated by the use of textbooks and lecture methods. Students want learning media that is more interactive, engaging, and in line with their daily digital habits. More than half of the students stated that educational games will make the PAI learning process more fun and easy to understand.

In addition, interviews with teachers revealed that there are obstacles in developing technology-based learning media, due to the limitations of mastery of software and the time that teachers have. This condition emphasizes the gap between the needs of students who want innovative media and the availability of media used in schools. Therefore, a solution is needed in the form of the development of an educational game Muslim Adventure that presents PAI material in the form of interactive adventures with simple language and attractive visuals. This media is expected to be able to increase students' motivation, involvement, and understanding of PAI materials in elementary schools.

2. Product Description of Muslim Adventure Game

The product of this research and development is in the form of an interactive educational game Muslim Adventure which is packaged in the form of a digital application. The educational game produced contains visual displays, text, illustrations, and interactive instructions that are integrated with Islamic Religious Education (PAI) materials for elementary school students.

The product specifications consist of several main displays. The main menu displays the title of the Muslim Adventure application and three menu options, namely "Play", "About", and "Exit". The Play menu directs students to play the game directly, the About menu contains brief information about the app, while the Exit menu is used to close the app.

Next, students are directed to the game level selection page, which consists of Level 1, Level 2, and Level 3. Each level has different challenges, and to unlock the next level, students must accumulate a certain number of points or coins as a requirement for graduation from the previous level. The scoring system is made in the form of gold coins that will increase each time students successfully answer questions or complete missions correctly.

In each level, students will encounter missions in the form of interactive questions associated with PAI materials according to the basic competencies of class V, such as the introduction of noble morals, worship procedures, and Islamic values in daily life. The navigation in the game is made simple to make it easy for elementary school students to understand, with responsive interactive buttons and attractive visual displays. This game was developed with an emphasis on interactive, fun, easy-to-use, and relevant aspects to students' needs. The simple yet attractive display is expected to increase students' interest in learning, while providing a contextual and meaningful Islamic adventure-based learning experience. Here is an example of how it looks.

Figure 1. Initial Menu View

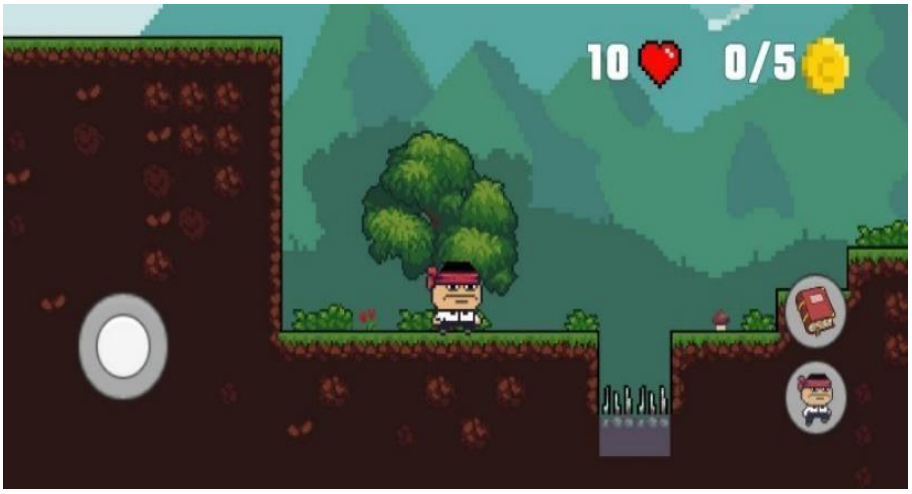

Figure 2 Adventure Challenge View

3. Expert Validation Result

The products developed are validated by material, media, and language experts to assess the feasibility of various aspects. The data from media validation results were analyzed through data analysis techniques, and the final results can be seen in the following table.

Table 1. Recapitulation of the results of the validation of the subject matter expert

Aspect	Indicator	Preferred Item	Value	Average
Content Eligibility	Conformity with learning objectives	3	14	4,67
	Accuracy of material content	3	13	4,33
Income	Clarity of material presentation	3	15	5.00
Amount		9	42	4,67

The table above presents the results of the validation carried out by the subject matter experts. The average score obtained was 4.67, which was categorized as Excellent. These results show that the content of the material, the accuracy of the content, and the clarity of the presentation in the Muslim Adventure Game are in accordance with the learning objectives of PAI in elementary school. The results of the validation of media experts are presented in the following table.

Table 2. Recapitulation of Media Expert Validation Result

Aspect	Indicator	Preferred Item	Value	Average
Interactive Multimedia view	Display Design	3	14	4,67
	Color & Typography	2	9	4,50
	Image/ Visual Illustration	3	14	4.67
	Animation & Feedback	2	9	4.59
Programming of interactive multimedia	Navigation & Interactivity	2	10	5.00
Apllications	Responsiveness	2	9	4.50
	Multimedia Packaging	3	14	4.67
Amount		17	79	4.65

The table above shows the results of the validation of learning media by media experts with an average score of 4.65, which is included in the Very Good category. This means that the aspects of display, navigation, interactivity, and multimedia packaging in the Muslim Adventure Game are considered to be in accordance with the eligibility criteria for interactive media.

Table 3. Recapitulation of linguist validation results

Aspect	Indicator	Preferred Item	Value	Average
Language assessment	Clarity of langueage	3	9	4,50
	Accuracy of terminology	2	8	4.00
	Suitability with student level	2	9	4.50
Amount		6	26	4.33

Based on the table above, the validation results by linguists obtained an average score of 4.33, which is included in the Excellent category. This assessment indicates that the language used in the game is clear, according to the student's level of understanding, and uses the right terms, although there is still room for improvement to be more consistent.

Table 4. Recapitulation of user response results (n=30)

Aspect	*Indicator*	Preferred Item	Value	Average
Ease of Use	Application is easy to run	3	122	4.07
	Instructions are easy to follow	2	81	4.05
Display Atractiveness	Colors and layout are interesting	2	85	4.25
	Characters and visuals are engaging	2	86	4.29
Content Suitability	Material fits learning goals	3	126	4.20
	Questions/tasks are clear	2	83	4.15
Motivation	Game increases learning enthusiasm	2	110	3.67
	Students feel more active in class	2	112	3.73
Amount		18	705	4.05

The table above shows that the students' response to the Muslim Adventure Educational Game obtained an average of 4.05 (Very Decent). The display aspects (visuals and characters) scored the highest, confirming that the game design caught students' attention. The material aspect is also considered good because it is in accordance with the learning objectives. While the motivation aspect is still slightly lower, it still shows a positive influence on student involvement.

B. Discussion

This research produced a computer-based learning application product in the form of an interactive educational game Muslim Adventure. The results of validation by material, media, and language experts show that this application obtained a very suitable predicate for use in learning Islamic Religious Education in elementary schools. These results were strengthened by the results of student responses who also gave a very positive assessment with an average score of 4.05. This is in line with the findings of previous research which confirms that the use of interactive digital media can increase student motivation, engagement, and understanding in the learning process (Jamaludin et al., 2026; Ordu & Çalışkan, 2023; Razaghpoor et al., 2024; Unal et al., 2024; Yu et al., 2021).

The differences in scores awarded by the material, media, and language validators reflect the different assessment focuses according to their respective expertise. The material validators emphasized the suitability and accuracy of Islamic Education content to the learning objectives, while the media and language validators emphasized technical aspects such as visual presentation, interactivity, and clarity and appropriateness of language to the developmental level of elementary school students. This variation in

scores demonstrates that the validation process was comprehensive and involved multiple perspectives in assessing the quality of the learning media.

Although there were variations in scores between validators, these differences were within a relatively stable range and did not indicate extreme differences. All assessment results showed a consistent trend in the "Feasible" to "Very Feasible" categories, indicating consistency in assessments across validators regarding the quality of the developed learning media. This finding suggests that the differences in scores are more complementary than contradictory in assessing product feasibility (Plomp, 2013).

The practical implications of the differences in scores between the validators were used as a basis for product improvements. Input from the media and language validators was used to refine the visual design, game navigation, and simplify the language to make it more communicative and appropriate to student characteristics. Thus, the differences in scores were not viewed as weaknesses, but rather as part of a development process aimed at continuously improving the quality of the learning media.

This educational game integrates various multimedia elements such as text, images, animations, audio, and interactivity that complement each other so as to form a learning system that is more effective than the use of conventional media. With an Islamic adventure package, this app is able to create a fun and meaningful learning experience for students. Therefore, the Muslim Adventure Educational Game can be an innovative alternative in supporting interactive PAI learning and in accordance with the characteristics of today's digital generation.

IV. Conclusion

This important finding shows that PAI learning that was originally considered boring becomes more interesting when packaged in the form of educational games. This study confirms the effectiveness of game-based learning in increasing interest in learning, as well as contributing new perspectives by integrating Islamic values in digital media. Thus, this research enriches the study of learning innovation, especially in PAI subjects in elementary schools. The limitation of this study lies in the number of samples that are limited to one school and have not measured the long-term impact. Further research needs to involve more schools, different levels, and wider experimental designs to make the results more comprehensive.

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