

Development of Interactive Multimedia-Based Fiqh Learning Media to Improve the Cognitive Abilities of Grade X Students at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah Jombang

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Abstract : *In response to the continuous advancement of technology and based on empirical evidence from the field, the development of learning media remains necessary. This study aims to analyze the results of expert validation of the Development of Interactive Multimedia-Based Fiqh Learning Media to Improve the Cognitive Achievement of Grade X Students at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah, as well as to determine the level of effectiveness of the developed learning media. This research employed a Research and Development (R&D) approach consisting of ten stages, beginning with the identification of problems and potentials, followed by data collection, prototype design, expert evaluation, design revision, limited trials, product optimization, field testing, final refinement, and concluding with large-scale implementation. The validation results from material and media experts indicate that the developed media is feasible for use and categorized as very good. The effectiveness test demonstrates a significant improvement in learning outcomes, with an average score increase of 2.333 between the pretest and posttest. Statistical analysis using SPSS produced a calculated t value of -12.677 with a significance level of $0.000 < 0.05$, leading to the conclusion that the use of this media is effective in improving students' cognitive achievement. This product offers an engaging and interactive learning alternative and can be widely implemented in Fiqh instruction in madrasahs.*

Keywords : *Learning media, interactive multimedia, Fiqh, cognitive.*

INTRODUCTION

Learning is regarded as an effort to prepare the younger generation to become intelligent and skilled individuals, thereby contributing to the advancement of the present era and the future (Ahmad Suryadi, 2022). Education is positioned as a form of long-term generational investment; therefore, learning must be implemented properly, effectively, and systematically in order to create meaningful learning experiences (Miarso, 2004). The rapid advancement of technology in the present era has had a positive impact on education by providing convenience for both educators and students in accessing information. Moreover, teaching and learning activities can be made more engaging, thereby contributing to the improvement of students' cognitive abilities (Isnawan, n.d.; Rohidin, 2017).

The presence of interactive multimedia-based learning media is one of the efforts expected to provide stimulation for students. Consequently, learning media that have traditionally relied solely on teaching modules and whose implementation has been closely associated with the passive lecture method can be replaced. This approach facilitates both teachers and students in understanding learning content and promotes the creation of interactive teaching and learning activities (Hotimah et al., 2021). This is consistent with the learning theory proposed by Jean Piaget. He theorized that students' learning experiences determine the extent of the knowledge they acquire. Therefore, educators are required to place greater emphasis on experience and interaction with the learning environment. In other words, educators must be able to develop systematic and relevant learning media to facilitate the construction of deep understanding, enabling students to solve problems effectively (Soleh Hapudin, 2021).

Considering the problems described above and recognizing the importance of Fiqh as a guiding framework as well as the necessity of understanding Fiqh, the researcher was motivated to examine and develop this issue through a study entitled "Development of Interactive Multimedia-Based Fiqh Learning Media to Improve the Cognitive Abilities of Tenth-Grade Students at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah.

METHOD

This development study adopted the Research and Development (R&D) approach proposed by Borg and Gall, as cited by Sugiyono in his scientific work on quantitative, qualitative, and development research methods (Sugiono, 2019). The subjects of this study were 16 tenth-grade students of Madrasah Aliyah Unggulan Abd. Wahab Hasbullah. The R&D procedure in this study involved ten systematic stages, beginning with the identification of problems and potentials, followed by data collection, prototype design, expert evaluation, design revision, small-scale testing, product optimization, large-scale field testing, final refinement, and large-scale implementation. The research and development procedure was conducted through three phases, namely pre-production, production, and post-production.

The product was evaluated through several aspects, namely: (1) trial design, (2) trial subjects, (3) types of information, (4) information collection instruments, and (5) information analysis techniques. The feasibility testing design was based on the results of validation questionnaire evaluations completed by content experts and media specialists. The data collection techniques employed in this study consisted of quantitative and qualitative data. Data were collected through observation, interview guidelines, documentation, questionnaires, and tests (pre-test and post-test), with responses assessed using a Likert scale. The data analysis techniques utilized included Percentage Quantitative Analysis and the T-test Difference Analysis (Sugiono, 2019). The limitation of this study lies in the development of learning materials, which is focused solely on the Fiqh topic of Muamalah,

in accordance with the learning outcomes for Grade X students of Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah during the even semester.

RESULT AND DISCUSSION

1. Result

Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah Jombang served as the research partner in the development of an interactive multimedia-based learning application. The study involved one class consisting of 16 students who served as the research subjects. The development of interactive multimedia-based Fiqh learning media at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah was carried out by applying the Research and Development (R&D) model proposed by Borg and Gall, which consists of ten systematically structured stages. Each stage of this model was implemented sequentially and adapted to the context of Fiqh learning at the madrasah to produce learning media that are not only visually appealing but also effective in supporting the achievement of learning objectives. This process included the identification of potentials and problems, data collection, as well as product testing and revision stages. All stages were carried out systematically to ensure that the developed learning media could be utilized optimally by educators and students in teaching and learning activities. The explanation of each stage is presented as follows.

Initial Analysis and Information Gathering Stage

The results of observations conducted through interviews and documentation revealed several issues that became the focus of this study, namely: (1) Fiqh learning at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah Jombang requires more interactive learning media. (2) The Fiqh learning process is still predominantly conducted using a classical approach, thereby necessitating multimedia-based learning media. (3) There is currently no Fiqh learning media utilizing mobile applications. (4) The majority of teachers and students possess smartphones or laptops, which supports and facilitates the implementation of this study. (5) The selection of Fiqh materials for the development of learning media.

After identifying various issues in the Fiqh learning process, the proposed solution was the development of interactive multimedia-based Fiqh learning media that can be accessed through mobile devices as well as laptops. This media was designed not only to present learning materials through visual and audio formats but also to incorporate interactive features such as material summaries, quizzes, and instructional videos that align with the content of the Fiqh materials. The learning materials were sourced from the teaching modules provided by Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah Jombang.

Initial Product Development Planning Stage

The researcher proceeded to the initial design phase by formulating concepts and exploring various aspects related to the requirements of the research and development

process through several strategic steps, namely: collecting various learning references relevant to the Fiqh topic of Muamalah, in accordance with the teaching modules and applicable curriculum requirements; preparing summaries of the fundamental concepts of Muamalah in the form of simple notes using a personal notebook; preparing all technical requirements, including materials, software, and coding processes that support the development of the learning media; designing validation instruments in the form of questionnaires to be used by two expert validators, namely an Adjunct Lecturer in Information Technology at Airlangga University, Surabaya, and a lecturer from Universitas KH. A. Wahab Hasbullah (UNWAHA); developing learning evaluation instruments and project assignments, including the preparation of pre-test and post-test questions; and creating a design of the application's structure, workflow, and content in the form of a flowchart to systematically illustrate the operation of the program.

Initial Product Development

This product was developed using Unity as the primary development platform, supported by Adobe Photoshop for processing visual elements such as text and images, while Adobe Premiere Pro was utilized in the production of instructional video content to enhance the audiovisual aspects of the media. The initial interface design (Figure 2) was intended to create a positive first impression and encourage users to interact with the application easily and intuitively.



Figure 1. Initial Game Interface

The main menu page (Figure 3) was designed with an energetic and engaging appearance. In the center section, several main menu icons are displayed, namely Instructions, Objectives, Materials, Videos, Quiz, and Profile, each accompanied by a representative visual icon to facilitate users in identifying the function of each menu. The application title remains displayed at the top as the primary identity of the application.



Figure 2. Menu Interface

Initial Testing (Expert Validation)

The Muamalah Game underwent an evaluation stage by experts as a means of assessing content quality and instructional appropriateness. This process involved assessments from both a material expert and a media expert. The material validation was conducted by Mr. M. Aliyul Wafa, M.Pd., a lecturer in the Undergraduate Islamic Religious Education Program at Universitas KH. A. Wahab Hasbullah Jombang, using a standardized questionnaire as the evaluation instrument. The recommendations for improvement included the addition of a voice-over audio feature in the materials menu and alignment with the latest national curriculum policy by revising the learning objectives from those previously based on Core Competencies and Basic Competencies (KI-KD) to those based on Learning Outcomes (CP).

The results of the questionnaires completed by the two validators are presented in the following table:

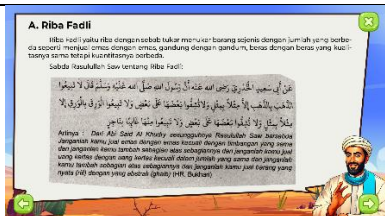
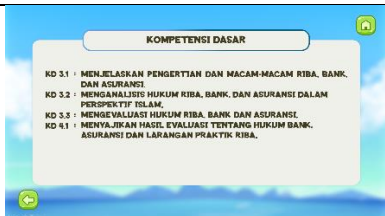
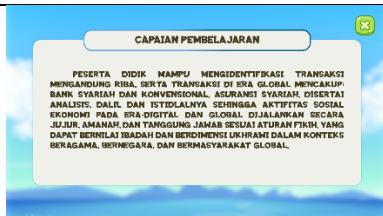
Table 1. Results of the Material and Media Validators' Questionnaires

Assessment Aspect	Number of items	V1	V2	Total score	Percentage	Criteria
Material	20	✓		90	90%	Very Feasible
Media	20		✓	98	98%	Very Feasible

Initial Product Revision

Based on the evaluation results provided by Mr. M. Aliyul Wafa, M.Pd., as the material validator, the following revisions were made:

Table 2. Revisions Suggested by the Material Expert

No	Revised Component	Before Revision	After Revision
1	The need to add voice-over narration to the materials menu		 Voice-over narration has been incorporated into the materials menu.
2	Revising the formulation of learning objectives from Core Competencies and Basic Competencies (KI-KD) to Learning Outcomes (CP).		

The comments and suggestions provided by the media validator, Mr. Mohammad Iqbal Umar, S.Hum., are presented at Table 3.

Table 3. Revisions Suggested by the Media Expert

No	Komponen Yang Direvisi	Sebelum Revisi	Setelah Revisi
1	The addition of achievement labels, namely "Outstanding," "Almost Perfect," "Needs Improvement," and "Try Again," to the quiz results page.		

Small-Scale Field Trial

At this stage, the media was tested on a small group of research subjects, consisting of five Grade XI students of Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah who were purposively selected. Through this trial, the researcher obtained direct feedback from users in both qualitative and quantitative forms. The evaluation was conducted using a 5-point Likert scale, with a maximum score of 25 for each aspect. The assessment percentage was calculated using the following formula: $(\text{Total Score} \div \text{Maximum Score}) \times 100\%$. The compiled data of students' responses are presented in the figure below.

No	Kriteria yang dinilai	Siswa					Skor Total	Skor Maksimal	Presentase	Kategori
		1	2	3	4	5				
1	Aspek Tampilan	5	4	5	5	4	23	25	92%	Sangat Layak
2	Kemudahan Penggunaan	5	4	5	5	4	23	25	92%	Sangat Layak
3	Kejelasan Materi	5	5	5	5	4	24	25	96%	Sangat Layak
4	Efektifitas Pembelajaran	5	4	5	5	4	23	25	92%	Sangat Layak
5	Keterarikan terhadap konten	5	4	4	4	5	22	25	88%	Sangat Layak
	Jumlah Total	20	17	20	20	16	155	125	92%	Sangat Layak

Figure 3. Small-Scale Trial Results

A summary of users' (students') responses to the learning media that had been tested is presented in the following figure.

No	Responden	Tanggapan dan saran
1	Siswa 1	Aplikasinya mudah digunakan, tampilannya juga enak dilihat.
2	Siswa 2	Belajarnya menjadi lebih seru dan tidak membosankan karena interaktif.
3	Siswa 3	Sebelumnya saya masih kebingungan dalam membedakan jenis-jenis riba. Namun setelah mencoba muamalah <i>game</i> menjadi faham karena ada contoh ribanya dan penjelasan berupa video.
4	Siswa 4	Aplikasinya ringan dan tidak membingungkan saat digunakan.
5	Siswa 5	Semoga kedepannya ditambah materinya

Figure 4. Results of the Small-Scale Questionnaire Data

Revision of the Product Following the Small-Scale Field Trial

Based on the results of the small-scale trial, no feedback or recommendations were identified that required revisions to the product at this stage. This indicates that the developed learning media was well accepted without any significant shortcomings. This condition reflects that the initial design had met the criteria for alignment with students' learning needs, allowing the product to proceed to the next stage without requiring additional modifications.

Large-Scale Field Trial

This activity was conducted over a period of two weeks and involved 16 Grade X students as the research subjects. Data were collected using a questionnaire instrument designed to obtain students' responses regarding the main aspects of the learning media, including the user interface design, ease of navigation, clarity of the learning materials, and effectiveness in supporting the learning process. The results of the questionnaire are presented in the figure below.

No	Kriteria yang dinilai	Jumlah Siswa	$\sum x_i$	$\sum x_{maks}$	Prosentase (%)
		16			
1	Tampilan media pembelajaran Fiqih berbasis Multimedia Interaktif	16	76	80	95.00%
2	Kemenarikan animasi media pembelajaran Fiqih berbasis Multimedia Interaktif	16	73	80	91.25%
3	Kesesuaian audio dengan isi materi	16	77	80	96.25%
4	Kesesuaian video dengan isi materi	16	76	80	95.00%
5	Kesesuaian antara gambar dengan isi materi	16	75	80	93.75%
6	Materi disajikan dengan jelas	16	75	80	93.75%
7	Media mempermudah pembelajaran	16	77	80	96.25%
8	Materi jelas dan mudah dipahami	16	79	80	98.75%
9	Belajar jauh lebih menyenangkan	16	77	80	96.25%
10	Kesesuaian kuis dengan materi	16	76	80	95.00%
	Jumlah Total	16	761	800	95.13%

Figure 5. Large-Scale Field Trial Results

After administering the questionnaire, a T-test analysis was conducted. This test employed a paired-sample design, in which measurements were taken from the same subjects under two different conditions. In this study, the subjects were Grade X students of Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah Jombang, each of whom underwent two stages of assessment. The first stage involved measuring learning outcomes before the use of the interactive multimedia-based Fiqh learning media, while the second stage involved measuring learning outcomes after the media had been implemented. This evaluation focused on students' learning achievement in the Fiqh subject, particularly on the *Muamalah* topic.

Table 4. Results of the Paired Differences Analysis

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
Pair 1	pre test - post test	-37.50000	11.83216	2.95804	-43.80491	-31.19509	-12.677	15	.000

Final Refinement

Based on the results of the large-scale trial, it can be observed that the developed learning media received highly positive responses, as its use was perceived to facilitate students' learning processes. In general, the developed media no longer required further revision.

Product Dissemination

The interactive multimedia-based Fiqh learning media that had been developed was disseminated to teachers and students through a Google Drive link containing the application file, which could be directly downloaded and installed on smartphone devices. This dissemination strategy was selected as a practical alternative to ensure that the product could be accessed quickly and easily by the intended users.

2. Discussion

Expert Validation Analysis of the Development of Interactive Multimedia-Based Fiqh Learning Media to Improve the Cognitive Abilities of Grade X Students at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah

In the process of developing the interactive multimedia-based Fiqh learning media, validation was conducted by two experts, namely a subject matter expert and a media expert, to ensure the appropriateness of the content and the technical quality of the developed media (Simarmata et al., 2020). The validation was conducted using a questionnaire instrument based on a Likert scale. The first analysis focused on the results of

the feasibility assessment carried out by the subject matter expert. The purpose of validating the product with the material expert was to ensure that the content of the developed product was aligned with the intended learning objectives (Sodik et al., 2019). Following the validation process, the assessment results obtained from the subject matter expert regarding the developed multimedia-based Fiqh learning media were analyzed to determine its feasibility level using a percentage calculation formula (Fitri et al., 2023). This formula was used to quantify the validation results obtained from the questionnaire instrument, thereby enabling the level of product validity to be determined objectively. The calculation formula applied is presented as follows:

$$\text{Percentage} = (\text{Total Score of Respondents' Answers} / \text{Total Ideal Score}) \times 100\%$$

The questionnaire instrument used in the material expert validation test consisted of 20 assessment aspects, each of which was assessed using a Likert scale with scores ranging from 1 to 5. Thus, if all aspects obtained the highest score, the total ideal score that could be achieved was 100 (Sugiono, 2019).

It is known that the product developed by the researcher obtained high scores from both the subject matter expert and the media expert. The results of the expert validation reached 90%, indicating that the presented material is highly feasible to be used. Similarly, the results of the media validation reached 98%, indicating that the product is feasible for use (Marlena et al., 2018). Overall, the assessment of the aspects of content, presentation, appearance, and interactivity indicates that this media is highly feasible to be used in the learning process (Putri & Hamimah, 2023). Referring to the study by Mekar (Ismayani et al., 2025), the success of the learning process is strongly influenced by the quality of the learning media used. The more attractive and relevant the learning media presented, the greater the students' opportunities to understand the material in a deeper and more meaningful way. This is in line with the findings of (Shoffa, 2023), which state that learning media not only functions as an instructional aid but also acts as a catalyst that enhances students' engagement, interest, and knowledge retention. Thus, this study successfully developed a learning media product that is theoretically and practically feasible to be used (Amalia, 2022). The implementation of the product is expected to address the challenges of modern learning, particularly in improving students' engagement and understanding (Puspitasari et al., 2018). The adjustments made in the product revision addressed several weaknesses of the product. With these improvements, the product became more aligned with the characteristics of the learners and the needs of interactive multimedia-based learning.

Analysis of the Effectiveness Level of the Development of Interactive Multimedia-Based Fiqh Learning Media to Improve the Cognitive Abilities of Grade X Students at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah

Theoretically, the development of this product is based on the principles of cognitive and constructivist learning theories, in which students are encouraged to actively construct their understanding through enjoyable and meaningful learning experiences (Larasati et al.,

2021). This product is also aligned with the educational technology approach that utilizes interactive multimedia, which includes elements of text, images, audio, animation, and video to support the improvement of students' cognitive abilities. This is consistent with the study conducted by Begjo Tohari and Ainur Hahman, whose journal highlighted the importance of interaction and collaboration, indicating that development is considered a key factor in the success of learning (Tohari & Rahman, 2024).

The product also utilizes the principles of Mayer's multimedia learning theory as an important foundation, which states that dual processing (verbal and visual) is more effective in transferring knowledge to students (Mayer, 2014). This was relevant when implemented at Madrasah Aliyah Unggulan KH. Abd. Wahab Hasbullah because, prior to the introduction of the developed product, many students felt confused and found it difficult to understand the material. After the researcher implemented the developed product for two weeks, the results were highly satisfactory and contributed to an improvement in students' cognitive abilities (Khoirun Aziz, 2015).

The development of learning media, particularly multimedia-based learning media, has a significant impact on improving students' cognitive abilities, as evidenced by the large-scale field trial conducted in this study (Ismayani et al., 2025). The effectiveness of the interactive multimedia-based Fiqh learning media, based on the results of the large-scale trial, showed that there was a significant improvement in students' learning outcomes. The average pretest score of 59.4 increased to 95.6 on the posttest after the implementation of the learning media. Statistical analysis using the paired sample t-test yielded a significance value of 0.000 (< 0.05), indicating that the difference was statistically significant. Therefore, it can be concluded that this learning media product is effective in improving students' cognitive abilities in Fiqh. Consequently, this media has considerable potential to be widely utilized in Fiqh learning as a supporting tool for a more innovative and effective teaching and learning process (Yunus et al., 2021).

The effectiveness of learning media development has also been demonstrated in a study entitled *"Development of Android-Based iSpring Suite 9 Learning Media for the Basic Electrical and Electronics Subject at SMK Negeri 3 Surabaya."* The study demonstrated that the implementation of multimedia-based learning media increased students' curiosity toward learning content and made them more active and focused during the independent learning process (Larasati et al., 2021). With the enhancement of learning media through development, it was proven to provide positive stimulation for students, and as an outcome, there was an improvement in learning achievement, indicating an increase in cognitive abilities (Amalia, 2022). This is reinforced by the thesis research of Muhammad Khoirun Aziz, which emphasizes that the development of learning media has proven effective in improving students' learning outcomes. Thus, the development of high-quality interactive Fiqh learning media is able to serve as a catalyst for enhancing engagement, knowledge retention, and deep understanding (Khoirun Aziz, 2015).

As a closing statement to this series of studies, the researcher presents the strengths and weaknesses of the interactive multimedia-based Fiqh learning media. This interactive Fiqh learning media features an attractive interface and is equipped with animation, audio, video, and quiz features that are capable of enhancing students' learning motivation and understanding. The materials are organized systematically in accordance with the curriculum, particularly on the topic of *Muamalah*, and are presented contextually through examples of transactions in everyday life. The media is easily accessible through digital devices, supports independent learning, and provides evaluation and multi-user features that enable the measurement and tracking of individual students' learning outcomes (Ramanda, 2025). The limitation of our product is that the developed media is still restricted to specific *Muamalah* topics, namely usury (*riba*), banking, and insurance, and therefore does not yet provide comprehensive coverage of the subject matter. The use of this media also depends heavily on the availability of digital devices, electrical power, and internet access, particularly for the video feature, which may pose challenges in environments with limited facilities. In addition, this media is not yet available in a web-based version, although such a format could serve as a more practical solution by allowing access without requiring installation (Fahrudin et al., 2024).

CONCLUSION

The development of the interactive multimedia-based learning application was successfully carried out. The application consists of three types of content, namely learning materials, instructional videos, and interactive games. The design and development of the media followed the ten stages of the Borg and Gall research model. Following the validation process conducted by the subject matter expert and the media expert, it was concluded that the product is highly feasible for use. Regarding its effectiveness in improving students' cognitive abilities, the average pretest score of 59.4 increased to 95.6 on the posttest. Furthermore, based on the statistical analysis using the paired sample t-test, a significance value of 0.000 (less than 0.05) was obtained. This indicates that there is a statistically significant difference, meaning that the developed media had an effect on the cognitive aspect.

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