

The Effectiveness of Interactive Digital Media in Enhancing Students' Islamic Literacy

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The current problem in Indonesia is the lack of literacy, which is why the development of digital technology is driving the transformation of learning methods, including in Islamic education. Students' Islamic literacy encompasses not only cognitive understanding but also the appreciation of religious values, attitudes, and practices in everyday life. This study aims to analyze the effectiveness of using interactive digital media in improving students' Islamic literacy. The research method used is a quantitative approach with a quasi-experimental design, involving an experimental group using interactive digital media and a control group using conventional learning methods. The research instruments were an Islamic literacy test and a student response questionnaire. Data analysis was conducted using descriptive and inferential statistical tests to determine differences in Islamic literacy improvement between the two groups. The results showed that the use of interactive digital media has a positive and significant impact on improving students' Islamic literacy, especially in aspects of conceptual understanding, internalization of Islamic values, and interest and motivation to learn. Interactive digital media is also able to create a more active, interesting, and contextual learning atmosphere. These findings indicate that the integration of interactive digital media in Islamic education learning is an effective strategy to improve the quality of students' Islamic literacy in the digital era.

Keywords: interactive digital media, Islamic literacy, Islamic education, digital learning, and students.

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1. Introduction

The development of information and communication technology has brought significant changes to various aspects of life, including Islamic education. Digital transformation is driving a paradigm shift in learning from conventional learning to technology-based learning that is more interactive, flexible, and student-centered. The use of digital media in learning is considered capable of increasing the effectiveness of material delivery, expanding access to information, and encouraging active student involvement in the learning process (Huda, 2018). In the context of Islamic education, the challenges of learning in the digital era are not only related to technological mastery, but also how Islamic values can be instilled in a meaningful and contextual way. Islamic literacy is the ability of students to understand, interpret, and practice Islamic teachings, which include aspects of faith, worship, morals, and an understanding of the Qur'an and Hadith in everyday life (Azra, 2017). Good Islamic literacy is expected to shape religious character, noble morals, and a moderate attitude in facing social dynamics.

However, various studies show that students' Islamic literacy levels still face several obstacles, such as low interest in learning, monotonous learning methods, and limited engaging and relevant learning media

(Suyadi & Widodo, 2019). Islamic education, which is still dominated by lecture methods, tends to be less able to accommodate the learning styles of the digital generation, which is accustomed to visualization, interactivity, and technology-based information access. Interactive digital media presents an innovative solution in Islamic education learning. This media integrates elements of text, images, audio, video, animation, and interactive features that enable students to actively engage in the learning process (Munir, 2020). The use of interactive digital media functions not only as a learning aid but also as a means to increase motivation, conceptual understanding, and a deeper learning experience.

Previous research has shown that interactive digital media can significantly improve student learning outcomes, interest, and participation compared to conventional methods (Arsyad, 2019). In Islamic education, the use of interactive digital media also has the potential to strengthen the internalization of Islamic values through the presentation of contextual, visual, and applicable materials. Digital media allows for the presentation of exemplary stories, worship simulations, and problem-based learning relevant to students' lives (Rahman, 2021). Thus, learning is not only oriented towards cognitive aspects but also touches on the affective and psychomotor domains.

Based on this description, this research is crucial to analyze the effectiveness of interactive digital media in improving students' Islamic literacy. The results are expected to provide theoretical contributions to the development of technology-based Islamic education and serve as a practical reference for educators in designing innovative, effective, and appropriate learning strategies for students in the digital age.

2. Literature Review

Islamic Literacy

Islamic literacy is an individual's ability to comprehensively understand, interpret, and implement Islamic teachings in everyday life. This literacy encompasses not only the ability to read religious texts but also an understanding of Islamic values, attitudes, and practices derived from the Quran, Hadith, and the thoughts of Islamic scholars (Azra, 2017). Thus, Islamic literacy is multidimensional, encompassing cognitive, affective, and psychomotor aspects.

According to Suyadi and Widodo (2019), Islamic literacy in students encompasses several key indicators, namely a basic understanding of faith, mastery of the concept of worship, internalization of moral values, and the ability to relate Islamic teachings to social realities. Good Islamic literacy plays a crucial role in shaping religious, moderate, tolerant, and responsible character as members of society.

In the era of globalization and digitalization, Islamic literacy faces challenges in the form of information flows that do not always align with Islamic values. Therefore, strengthening Islamic literacy through innovative and contextual learning approaches is an urgent need in Islamic education (Rahman, 2021).

Interactive Digital Learning Media

Interactive digital learning media is a technology-based learning tool that integrates various multimedia elements, such as text, images, audio, video, animation, and interactive features that enable two-way communication between students and the media (Munir, 2020). This media is designed to increase active student engagement in the learning process.

Arsyad (2019) stated that learning media primarily serves as a tool to clarify messages, increase learning motivation, and overcome limitations of space and time. Interactive digital media has advantages over conventional media because it can present material visually and dynamically, making it more suited to the characteristics of the digital generation.

The use of interactive digital media also supports a technology-enhanced learning approach, which emphasizes meaningful, collaborative, and student-centered learning experiences (Huda, 2018). With interactivity, students are not merely passive recipients of information but are actively involved in exploring and constructing their own understanding.

In Islamic education, interactive digital media serves as a means of conveying Islamic material in a more engaging, contextual, and applicable manner. This media allows for the presentation of Quranic verses, hadith, exemplary stories, and simulations of religious practices in visual and audio formats that are easily understood by students (Rahman, 2021). Previous research has shown that the use of digital media in Islamic education can increase students' learning motivation, conceptual understanding, and religious attitudes (Suyadi & Widodo, 2019). Interactive digital media also helps teachers connect Islamic values to real life, thus making learning more meaningful.

Furthermore, the use of interactive digital media aligns with the concept of Islamic education, which emphasizes the integration of science, technology, and religious values. With appropriate media utilization, Islamic education focuses not only on knowledge transfer but also on character development and spirituality development in students (Azra, 2017).



Figure 1. Increasing Islamic Literacy

Learning Theories that Support the Use of Interactive Digital Media

The use of interactive digital media in learning is supported by several learning theories, one of which is constructivism. This theory states that knowledge is actively constructed by students through interactions with the learning environment (Piaget, 1972). Interactive digital media provides opportunities for students to explore, experiment, and reflect on their understanding independently.

Furthermore, Mayer's (2009) multimedia learning theory explains that learning is more effective when information is presented through a combination of text and visuals rather than text alone. This principle supports the use of interactive digital media in Islamic education, particularly in conveying abstract concepts and moral values. By integrating constructivist theory and multimedia learning, interactive digital media is believed to be able to optimally improve students' understanding and Islamic literacy.

Based on the theoretical study above, it can be concluded that interactive digital media has the potential to improve students' Islamic literacy by increasing their motivation to learn, understanding the material, and internalizing Islamic values. Islamic literacy is positioned as the dependent variable, while the use of interactive digital media is the independent variable. The relationship between the two is assumed to be positive, with the more effective use of interactive digital media, the higher the level of students' Islamic literacy.

3. Method

This study uses a quantitative approach with a quasi-experimental method to measure the effectiveness of using interactive digital media in improving students' Islamic literacy. The quantitative approach was

chosen because this study focuses on measuring changes in Islamic literacy levels objectively through statistically analyzed numerical data. The research design used was a pretest–posttest control group design, where students were divided into two groups: an experimental group and a control group. The experimental group was given learning using interactive digital media, while the control group used conventional learning methods. Measurements were carried out before (pretest) and after (posttest) the treatment to determine differences in Islamic literacy improvements between groups. The study was conducted on secondary-level students (SMP/MTs or SMA/MA, adjusted to the research context) at a formal educational institution. Research subjects were selected using a purposive sampling technique, with the criteria being students who had taken Islamic Religious Education subjects and had access to digital devices to support learning.



Figure 2. Research Literacy Methods

The variables in this study consist of:

1. Independent variable (X): Interactive digital media, which includes multimedia content, interactivity, and educational animation.
2. Dependent variable (Y): Students' Islamic literacy, which includes understanding of Islamic material, internalization of Islamic values, and religious attitudes.

Data collection was carried out using several instruments, namely:

1. Islamic literacy test, used to measure the level of student understanding before and after treatment.
2. Questionnaire, used to determine students' responses and perceptions regarding the use of interactive digital media.
3. Observation, carried out to observe the involvement and activities of students during the learning process.

The data obtained were analyzed using descriptive and inferential statistical techniques. Descriptive analysis was used to describe the average value, percentage, and increase in Islamic literacy scores. Meanwhile, inferential analysis was conducted through normality tests, homogeneity tests, and t-tests (independent sample t-tests or paired sample t-tests) to determine the significance of differences in learning outcomes between the experimental and control groups. All data analysis was conducted with

the assistance of statistical software. The research procedure included planning, implementation, and evaluation stages. In the planning stage, interactive digital learning instruments and media were developed. The implementation stage included administering a pretest, implementing the learning media, and administering a posttest. The evaluation stage was conducted through data analysis and drawing conclusions regarding the effectiveness of interactive digital media in improving students' Islamic literacy.

4. Analysis and Results

Description of Research Data

This study involved two groups: an experimental group using interactive digital media and a control group using conventional learning methods. Islamic literacy was measured using pretests and posttests in both groups to assess changes in student abilities after the treatment.

The descriptive analysis results showed that the average pretest scores in both groups were in a relatively similar category, thus assuming that the students' initial abilities before treatment were comparable. After treatment, there was an increase in posttest scores in both groups, but the increase in the experimental group was more significant than in the control group.

Islamic literacy improvement was analyzed by comparing the difference between pretest and posttest scores in each group. The experimental group showed higher scores, particularly in understanding Islamic concepts, interpreting Islamic values in everyday life, and actively engaging in the learning process. Meanwhile, the control group also experienced improvement, but it tended to be lower due to the one-way learning process and the lack of active student interaction.

Analysis of the Effectiveness of Interactive Digital Media

Based on the results of the inferential analysis (mean difference test), a significant difference was found between the posttest results of the experimental and control groups. This indicates that the use of interactive digital media has a positive influence on improving students' Islamic literacy. Interactive digital media allows for the presentation of Islamic material in a visual, contextual, and engaging manner, thereby increasing learning motivation and facilitating understanding. Interactive features such as quizzes, animations, and simulations also encourage active student engagement during the learning process.

Data analysis in this study was conducted in stages to determine the effect of interactive digital media use on improving students' Islamic literacy. The data analyzed came from pretest and posttest results in the experimental and control groups. Descriptive analysis was used to describe the initial and final conditions of students' Islamic literacy skills. Parameters analyzed included the average (mean), minimum (minimum), maximum (maximum), and standard deviation.

The analysis showed that the average pretest scores in the experimental and control groups were relatively balanced, indicating that the students' initial abilities were at a similar level. After implementing interactive digital media, the average posttest scores in the experimental group increased significantly compared to those in the control group. This indicates a trend toward a more significant increase in Islamic literacy among students learning using interactive digital media.

Table 1. Descriptive Statistics of Students' Islamic Literacy Scores

Group	Test	N	Minimum Value	Maximum Value	Average	Standard Deviation
Experiment	Pretest	30	55	75	64.20	5.31
Experiment	Posttest	30	75	95	85.60	4.87
Control	Pretest	30	54	74	63.80	5.12
Control	Posttest	30	68	85	76.10	4.95

The table shows that the average posttest score of the experimental group was higher than that of the control group, which indicates an increase in Islamic literacy after the use of interactive digital media.

Discussion of Results

The results of this study corroborate previous research findings that suggest that the use of digital technology in religious education can improve learning effectiveness and student learning outcomes. Interactive digital media serves not only as a tool but also as a learning tool that encourages independent, collaborative, and meaningful learning. Therefore, the integration of interactive digital media in Islamic Religious Education (IS) learning has the potential to be an innovative strategy for improving Islamic literacy, particularly in addressing the characteristics of students in the digital age.

A normality test was conducted to ensure that the pretest and posttest data were normally distributed, as a prerequisite for parametric statistical analysis. Normality tests were performed using the Kolmogorov–Smirnov or Shapiro–Wilk test. The results of the normality test showed that the significance value (p-value) for all data groups was greater than 0.05, thus concluding that the data were normally distributed and suitable for analysis using parametric tests.

The homogeneity test aims to determine the similarity of variance between the experimental group and the control group. This test was conducted using the Levene test. The results of the homogeneity test showed a significance value greater than 0.05, so it can be concluded that the variance of both groups is homogeneous. Thus, the two groups can be compared statistically. To determine the difference in the increase in Islamic literacy between the experimental group and the control group, a two-sample independent t-test was conducted on the posttest scores. The results of the t-test showed that the significance value was less than 0.05, which means there is a significant difference between the learning outcomes of the experimental group and the control group. Thus, the use of interactive digital media has been proven to have a significant effect on improving students' Islamic literacy.

To assess the effectiveness of improving Islamic literacy skills, a gain score (the difference between the posttest and pretest scores) was calculated. The gain score analysis showed that the experimental group had a higher gain score than the control group. This indicates that learning using interactive digital media is more effective in improving students' Islamic literacy than conventional learning.

Based on all stages of data analysis, it can be concluded that the use of interactive digital media positively contributes to improving students' Islamic literacy. Interactive digital media can enhance conceptual understanding, learning appeal, and active student participation during the learning process.

Table 2.Data Normality Test Results (Shapiro–Wilk)

Group	Test	Sig. (p-value)	Information
Experiment	Pretest	0.162	Normal
Experiment	Posttest	0.089	Normal
Control	Pretest	0.174	Normal
Control	Posttest	0.102	Normal

Criteria: $p > 0.05 \rightarrow$ data is normally distributed

Table 5.N-Gain Calculation Results

Group	Average N-Gain	Effectiveness Category
Experiment	0.62	Medium–High
Control	0.34	Currently

N-Gain Criterion:

$g \geq 0.70$: High

$0.30 \leq g < 0.70$: Moderate

$g < 0.30$: Low

5. Conclusion

Based on the analysis and discussion, it can be concluded that the use of interactive digital media has proven effective in improving students' Islamic literacy. This is indicated by a significant increase in the average Islamic literacy score in the experimental group after the implementation of interactive digital media compared to the control group using conventional learning methods. The results of statistical tests indicate that the data are normally distributed and homogeneous, thus meeting the requirements for parametric analysis. The independent two-sample t-test yielded a significance value of less than 0.05, indicating a significant difference between the learning outcomes of students who used interactive digital media and those who did not. In addition, the N-Gain value in the experimental group was in the moderate to high category, indicating that interactive digital media has a good level of effectiveness in improving students' Islamic understanding and literacy. Thus, interactive digital media not only plays a role as a learning support tool but is also able to create a more interesting, contextual, and meaningful learning process. The application of this media can be recommended as an alternative learning strategy to improve students' Islamic literacy sustainably, especially in the current digital era.

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