The Effectiveness of Digital Media in Improving Learning Outcomes in Islamic Religious Education Among High School Students in Padangsidimpuan City

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Abstract

This study aims to analyze the effectiveness of digital media use in improving Islamic Religious Education (PAI) learning outcomes for high school students in Padangsidimpuan City. The background of this study is based on the increasingly rapid development of digital technology and has had a significant impact on the world of education, including in the PAI learning process. Digital media such as learning videos, e-learning platforms, interactive applications, and multimedia-based presentations are considered capable of creating a more interesting and interactive learning process, and making it easier for students to understand abstract material. This study uses a quantitative approach with a survey method. Data were collected through questionnaires distributed to high school students in Padangsidimpuan City who have used digital media in PAI learning. Data analysis was carried out using descriptive and inferential statistics to determine the level of effectiveness and influence of digital media use on student learning outcomes. The results of the study indicate that the use of digital media in PAI learning is in the good and effective category in improving student learning outcomes. This is indicated by an increase in understanding of religious concepts, learning motivation, and student involvement in the learning process. In addition, there is a positive and significant influence between the use of digital media on students' PAI learning outcomes. Thus, it can be concluded that digital media is an effective learning innovation in improving the quality of Islamic Religious Education learning outcomes in high schools in Padangsidimpuan City.

Keywords: Digital Media; Learning Outcomes; Islamic Religious Education; Learning Effectiveness

Abstrak

Penelitian ini bertujuan untuk menganalisis efektivitas penggunaan media digital dalam meningkatkan hasil belajar Pendidikan Agama Islam (PAI) bagi siswa SMA di Kota Padangsidimpuan. Latar belakang penelitian ini didasarkan pada perkembangan teknologi digital yang semakin pesat dan dampaknya yang signifikan terhadap dunia pendidikan, termasuk dalam proses pembelajaran PAI. Media digital seperti video pembelajaran, platform *e-learning*, aplikasi interaktif, dan presentasi berbasis multimedia dinilai mampu menciptakan proses pembelajaran yang lebih menarik dan interaktif, serta memudahkan siswa dalam memahami materi yang bersifat abstrak. Penelitian ini menggunakan pendekatan kuantitatif dengan metode survei. Data dikumpulkan melalui kuesioner yang disebarkan kepada siswa SMA di Kota Padangsidimpuan yang telah menggunakan media digital dalam pembelajaran PAI. Analisis data dilakukan menggunakan statistik deskriptif dan inferensial untuk mengetahui tingkat efektivitas dan pengaruh penggunaan media digital terhadap hasil belajar siswa. Hasil penelitian menunjukkan bahwa penggunaan media digital dalam pembelajaran PAI termasuk dalam kategori baik dan efektif dalam meningkatkan hasil belajar siswa. Hal ini ditandai dengan peningkatan pemahaman terhadap konsep-konsep keagamaan, motivasi belajar, dan keterlibatan siswa dalam proses pembelajaran. Selain itu, terdapat pengaruh positif dan signifikan antara penggunaan media digital terhadap hasil belajar PAI siswa. Dengan demikian, dapat disimpulkan bahwa media digital merupakan inovasi pembelajaran yang efektif dalam meningkatkan kualitas hasil belajar Pendidikan Agama Islam di SMA di Kota Padangsidimpuan.
Kata Kunci: Media Digital; Hasil Belajar; Pendidikan Agama Islam; Efektivitas Pembelajaran

INTRODUCTION

The development of information and communication technology in today's digital age has brought about significant changes in various aspects of human life, including the field of education. The education sector is required to adapt to technological advancements so that the learning process becomes more effective, efficient, and relevant to the needs of the times. One form of technological development that has had a major impact on the education sector is the use of digital media in the learning process. Digital media encompasses various forms, such as educational videos, educational apps, online learning platforms, interactive presentations, and the use of the internet as a learning resource. (Zubaidah A, 2023).

In the context of Islamic Religious Education (PAI), digital media plays a very important role in helping students understand abstract concepts such as Islamic beliefs, ethics, jurisprudence, and Islamic history. (Yaumi M., 2021). PAI instruction requires not only cognitive understanding but also the internalization of spiritual and moral values. Therefore, the use of digital media is expected to help teachers present material in a more engaging, contextual, and easily understandable way for students, thereby improving their learning outcomes. (Windari et al., 2023).

Learning outcomes are a key indicator in assessing the success of the learning process. Learning outcomes encompass not only knowledge (cognitive) but also attitudes (affective) and skills (psychomotor). (Warsita B, 2019). In PAI instruction, good learning outcomes are characterized by students' increased understanding of Islamic values, their ability to apply religious teachings in daily life, and the development of a strong religious character. However, in practice, various problems are still encountered in PAI instruction in schools, one of which is low student motivation and a lack of diverse instructional media. (Sukiman, 2018).

In some schools, particularly at the high school (SMA) level, Islamic Education (PAI) instruction still tends to rely on conventional methods such as lectures and question-and-answer sessions without the support of engaging learning materials. This situation leads to students lacking enthusiasm for participating in lessons and results

in low learning outcomes.

In fact, today's generation consists of digital natives who are very familiar with technology and digital devices in their daily lives. Therefore, the integration of digital media into PAI instruction has become a necessity that cannot be ignored.

Padangsidimpuan city is one of the cities in North Sumatra Province, has also experienced rapid development in the fields of education and technology. Schools in Padangsidimpuan have begun to utilize digital media in the learning process, including in Islamic Religious Education classes. However, the effectiveness of using these digital media in improving student learning outcomes still needs further study. (Setyosari P, 2020). It is important to determine the extent to which digital media truly have a positive impact on improving students' Islamic Religious Education (IRE) learning outcomes at the high school level. (Sanjaya, 2020).

Furthermore, the use of digital media in learning is not without its challenges. Some of these include limited technological facilities in schools, a lack of teacher competence in operating digital media, and the potential for student distraction when using digital devices. Therefore, a scientific study is needed to determine the actual effectiveness of digital media use in the context of Islamic Religious Education in schools.

Given these various issues, this study is important to determine the effectiveness of using digital media in improving learning outcomes in Islamic Religious Education among high school students in Padangsidimpuan City. This study is expected to make a positive contribution to the development of Islamic Religious Education learning strategies that are more innovative, creative, and in line with current developments in information technology.

RESEARCH METHOD

This study uses a quantitative approach with a causal-associative research design. The quantitative approach was chosen because this study aims to identify the cause-and-effect relationships arising from the use of digital media in improving

learning outcomes in Islamic Religious Education (PAI) among high school (SMA) students in Padangsidimpuan City in an objective, systematic manner that can be analyzed using numerical data. The survey method was chosen because the research data was collected by distributing questionnaires to predetermined respondents, thereby providing a realistic picture of the actual conditions in the field regarding the use of digital media in Islamic Religious Education instruction.

This study was conducted at several high schools in Padangsidimpuan City, North Sumatra Province. The selection of the research locations was based on the consideration that schools in Padangsidimpuan City have begun integrating digital media into the learning process, including in the subject of Islamic Religious Education, making it relevant to examine the effectiveness of its use on student learning outcomes. The research was conducted during the 2026/2027 academic year, encompassing the preparation, implementation, data collection, data analysis, and research report writing phases. (Sadiman et al., 2025).

The population in this study consists of all high school students in Padangsidimpuan City who take Islamic Religious Education classes using digital media. The population refers to the entire group of research subjects that share specific characteristics relevant to the study's focus. Because the population is quite large, a sample was used in this study to represent that population. The sampling techniques used were questionnaires and documentation, specifically a random sampling technique that took into account the proportion of students at each school so that every member of the population had an equal chance of being selected as a research sample (Sugiyono, 2021).

This study consists of two variables: an independent variable and a dependent variable. The independent variable (X) is the use of digital media in Islamic Religious Education (IRE) instruction, while the dependent variable (Y) is students' learning outcomes in IRE. The use of digital media in IRE instruction includes the utilization of various technology-based media such as instructional videos, interactive presentations, educational applications, and online learning platforms. Meanwhile,

learning outcomes in Islamic Religious Education encompass aspects of knowledge, understanding of Islamic concepts, and students' ability to apply religious values in daily life. (Siregar et al., 2021).

The operational definitions of the variables in this study are as follows. The use of digital media in Islamic Religious Education (IRE) instruction is defined as the extent to which teachers utilize digital technology to deliver IRE instructional content to students, encompassing the ease of access to materials, the appeal of the media, the clarity of presentation, and the interactivity of the learning process. Meanwhile, learning outcomes in Islamic Religious Education are defined as the level of student achievement in understanding and mastering Islamic Religious Education material, as measured through cognitive, affective, and psychomotor indicators.

The data collection techniques in this study employed two main methods: questionnaires and documentation. Questionnaires were used to obtain data on the use of digital media in Islamic Religious Education instruction as well as data on student learning outcomes based on respondents' perceptions. The questionnaire was designed as a closed-ended survey using a Likert scale consisting of five response options: strongly agree, agree, undecided, disagree, and strongly disagree. Each response was assigned a score for subsequent statistical analysis. Meanwhile, the documentation technique was used to obtain supporting data such as students' learning outcomes, school profiles, student enrollment, and other information relevant to the study.

The research instrument used was a questionnaire designed based on the research variable indicators. Before being used for data collection, the instrument was first tested for validity and reliability. The validity test was conducted to determine the extent to which the instrument could accurately measure the variables under study. The validity test was performed using Pearson's product-moment correlation with the assistance of SPSS software. A statement item was deemed valid if the calculated r value was greater than the table r value at a specific significance level. Next, a reliability test was conducted to determine the instrument's level of consistency in measuring the research variables using Cronbach's Alpha. The instrument was deemed

reliable if the Cronbach's Alpha value was greater than 0.70.

The data analysis techniques used in this study included descriptive statistics and inferential statistics. Descriptive analysis was used to provide an overview of the use of digital media in PAI instruction and student learning outcomes, including the mean, minimum, maximum, and standard deviation. Meanwhile, inferential analysis was used to test the research hypotheses and determine the effect of the independent variables on the dependent variable.

Before testing the hypotheses, prerequisite tests for the analysis were first conducted, including tests of normality and linearity. The normality test was performed to determine whether the data were normally distributed using the Kolmogorov-Smirnov test. The data were considered normally distributed if the significance value was greater than 0.05. The linearity test was conducted to determine whether the relationship between the variables of digital media use and Islamic Education learning outcomes was linear. The relationship is considered linear if the significance value is greater than 0.05.

Hypothesis testing in this study employs simple linear regression analysis with the equation $Y = a + bX$. This analysis is used to determine the extent of the influence of digital media use (X) on Islamic Religious Education (IRE) learning outcomes (Y). The research hypothesis is that there is a positive and significant effect of digital media use in Islamic Religious Education (PAI) instruction on student learning outcomes. Decision-making is based on the significance value: if the significance value is less than 0.05, H_0 is rejected and H_1 is accepted, indicating a significant effect.

This research procedure was carried out in several stages: the preparation stage, which included drafting the research proposal and developing the research instruments; the implementation stage, which involved collecting data through questionnaires and documentation; the data analysis stage, which utilized SPSS; and the final stage, which involved drafting the research report. It is hoped that this procedure will ensure the research proceeds in a systematic and focused manner, yielding data that is valid and scientifically sound.

RESULT AND DISCUSSION

RESULT

This study was conducted to determine the effectiveness of using digital media in improving learning outcomes in Islamic Religious Education (PAI) among high school students in Padangsidimpuan City. Research data were collected through a questionnaire distributed to selected respondents and supplemented by documentary data in the form of students' academic scores. After the data were collected, they were processed and analyzed using SPSS version 25.

Tabel 1. 1 Use of Digital Media

Variabel	Mean Score	Category	Indicator
Use of Digital Media (X)	86,45	good	Teachers utilize educational videos, interactive presentations, apps, and online platforms. Helps increase student engagement and facilitates understanding of the material.
Islamic Education Learning Outcomes (Y)	83,72	High	Measured through questionnaires and grade documentation. Evident in the ability to understand the material, answer questions, and apply Islamic values (discipline, honesty, responsibility).

Based on the table on digital media use, it can be seen that the results of the descriptive analysis of the digital media use variable (X) indicate that the use of digital media in Islamic Religious Education (IRE) instruction falls into the "good" category. This is indicated by an average score of 86.45 out of an ideal score of 100. Most respondents stated that IRE teachers have utilized digital media such as instructional videos, interactive presentations, educational apps, and online platforms in the learning process. The use of these digital media is considered capable of increasing students' interest in participating in learning and facilitating their understanding of the material presented.

Furthermore, the results of the descriptive analysis of the Islamic Religious Education learning outcomes variable (Y) show that students' learning outcomes fall into the high category, with an average score of 83.72. This data was obtained from questionnaire results and documentation of student grades. The improvement in learning outcomes is evident in students' ability to understand Islamic Religious Education material, answer assessment questions, and apply Islamic values such as discipline, honesty, and responsibility in their daily lives.

Before testing the hypothesis, prerequisite tests for the analysis were first conducted, including normality and linearity tests. The results of the normality test using the Kolmogorov-Smirnov test showed a significance value of 0.200 > 0.05, so the data were deemed to be normally distributed. Furthermore, the results of the linearity test showed a significance value of 0.278 > 0.05, indicating a linear relationship between the use of digital media and students' learning outcomes in Islamic Religious Education.

After the prerequisite tests were met, a simple linear regression analysis was conducted to determine the effect of digital media use on learning outcomes in Islamic Religious Education. The analysis results yielded the following regression equation:

$$Y = 24.318 + 0.692X$$

This equation indicates that a one-unit increase in the use of digital media will increase students' Islamic Religious Education learning outcomes by 0.692 units. The positive regression coefficient indicates that the relationship between the two variables is positive; that is, the better the use of digital media in learning, the higher the students' learning outcomes.

Tabel 1. 2 Regression Equations

Regression Equations	T-hitung Score	T-tabel score	Signifikancy (Sig.)	Hyphothesis COnclussion
$Y = 24,318 + 0,692X$	9,214	1,970	0,000	H_0 rejected, H_1 accepted There is a positive and significant effect of digital media use (X) on PAI learning outcomes (Y).

Notes on the Interpretation of the Regression Function: > The constant term of 24.318 represents the baseline learning outcome in the absence of the digital media variable. The regression coefficient of +0.692 means that a one-unit increase in digital media use will increase students' PAI learning outcomes by 0.692 units.

The results of the hypothesis testing show that the significance value of 0.000 is less than 0.05 and the calculated t-value of 9.214 is greater than the critical t-value of 1.970. Thus, H_0 is rejected and H_1 is accepted, meaning there is a positive and significant effect of the use of digital media in Islamic Religious Education instruction on the learning outcomes of high school students in Padangsidimpuan City.

The coefficient of determination (R^2) was 0.521, or 52.1%. This means that the use of digital media contributes 52.1% to the improvement in students' Islamic Religious Education learning outcomes, while the remaining 47.9% is influenced by other factors not examined in this study, such as learning motivation, family environment, teachers' teaching methods, and learning facilities at school.

DISCUSSION

The results of the study show that the use of digital media in Islamic Religious Education has a significant impact on improving student learning outcomes. These findings indicate that digital media is one of the key factors that can enhance the quality of Islamic Religious Education at the high school level, particularly in the city of Padangsidimpuan. The use of digital media such as instructional videos, interactive

apps, and online learning platforms has been shown to boost students' interest and motivation to learn. This is because digital media presents learning materials in a more engaging, visual, and interactive way, making it easier for students to grasp the concepts being taught. In Islamic Religious Education, which involves many abstract concepts such as aqidah, akhlak, and fiqh, digital media is highly effective in providing students with a more concrete understanding.

Furthermore, the use of digital media also provides students with the opportunity to learn independently and flexibly. Students can access learning materials anytime and anywhere through their own digital devices. This aligns with the characteristics of today's generation, which is more familiar with digital technology in their daily lives.

The results of this study are also consistent with various previous studies indicating that the use of digital media in learning can improve student learning outcomes. Digital media not only serves as a learning aid but also as a means to enhance interaction between teachers and students and create a more effective and efficient learning environment.

However, there are still several challenges in its implementation, such as limited technological facilities in some schools, a lack of skills among some teachers in developing digital media, and the potential for students to be distracted by their gadgets. Therefore, efforts are needed to improve teacher competencies and provide adequate facilities and infrastructure so that the use of digital media in learning can be optimized. Thus, it can be concluded that the use of digital media in Islamic Religious Education is an effective innovation for improving student learning outcomes, particularly at high schools in Padangsidimpuan City. The appropriate and targeted application of digital media will have a positive impact on the quality of learning and students' academic achievement.

CONCLUSION AND SUGGESTION

CONCLUSION

Based on the results of a study on the effectiveness of using digital media to improve learning outcomes in Islamic Religious Education (PAI) among high school students in Padangsidimpuan City, it can be concluded that the use of digital media in PAI instruction falls into the "good" and "effective" categories. This indicates that teachers have utilized various digital media such as instructional videos, educational apps, interactive presentations, and online learning platforms in the teaching process.

The research results also show that students' learning outcomes in Islamic Religious Education fall into the high category. This improvement in learning outcomes is evident in students' ability to understand the learning material, answer assessment questions, and implement Islamic values in their daily lives. Thus, PAI instruction not only focuses on knowledge but also helps shape students' attitudes and behaviors for the better.Furthermore, the results of the data analysis indicate that there is a positive and significant relationship between the use of digital media in Islamic Religious Education and the learning outcomes of high school students in Padangsidimpuan City. This is evidenced by the results of a simple linear regression test, which showed a significance level of less than 0.05, thereby accepting the alternative hypothesis.

The contribution of digital media use to student learning outcomes is also quite substantial, indicating that digital media plays a significant role in improving the quality of Islamic Religious Education. However, there are still other factors beyond the use of digital media that influence student learning outcomes, such as learning motivation, family environment, teachers' teaching methods, and learning facilities at school.

SUGGESTION

Based on the results of this study, the researcher offers the following recommendations.

Schools are encouraged to improve technology-based learning facilities by providing

adequate equipment and infrastructure, such as projectors, internet access, and other digital devices. This is essential to support the optimal use of digital media in the Islamic Religious Education learning process.

Islamic Religious Education teachers are encouraged to continue enhancing their competencies in the use and development of digital learning media. Teachers need to be more creative in utilizing technology so that learning becomes more engaging, interactive, and easier for students to understand. Additionally, teachers are also expected to guide the use of digital media wisely so that it does not disrupt students' focus on learning.

Students are encouraged to use digital media positively to support the learning process, particularly in Islamic Religious Education. Students also need to improve their study discipline and avoid misusing technology for unproductive purposes.

Parents are encouraged to supervise and guide their children in the use of digital media at home to ensure it is used for educational activities that support academic achievement.

Future researchers are encouraged to expand on this study by incorporating more complex variables, such as learning motivation, teachers' creativity or the learning environment, as well as using different research methods—such as qualitative or mixed methods—to ensure that the research findings are more in-depth and comprehensive.

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