



Enhancing Islamic Religious Education Outcomes Through Digital Learning Media: A Case Study at SMP IT Bina Insan Palu

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ABSTRACT

The development of digital technology has brought significant changes to the learning process, including in Islamic Religious Education (PAI). Digital learning media are considered capable of enhancing learning effectiveness through more engaging visual and audio presentations as well as broader access to information. However, their implementation in schools does not always have an equal impact on improving student learning outcomes. This study aims to determine the influence of digital learning media on students' learning outcomes in PAI at SMP IT Bina Insan Palu.

This research employed a quantitative approach with a cross-sectional design. The sample consisted of 60 eighth-grade students selected using a saturated sampling technique. Data were collected through a Likert-scale questionnaire that had been tested for validity and reliability. Data analysis included normality testing, t-test, and coefficient of determination using SPSS version 24.

The findings show that the use of digital learning media has a significant effect on PAI learning outcomes, as indicated by $t_{\text{calculated}} = 2.423 > t_{\text{table}} = 1.672$ and a significance value of $0.019 < 0.05$. The coefficient of determination (R^2) of 0.092 suggests that digital media contribute 9.2% to learning outcomes, while the remaining 90.8% is influenced by other factors. Thus, it can be concluded that digital learning media play an important role in improving PAI learning outcomes, although their effectiveness is still influenced by supporting factors such as teacher strategies, student motivation, and the learning environment.

1. Introduction

The development of science and technology (IPTEK) in today's digital era has brought major changes to almost every aspect of human life, including education. Technological transformation, particularly in digital media, has made the learning process more dynamic and flexible. Digital media not only function as visual aids but also serve as tools that connect learners to various interactive learning resources through text, audio, video, and even digital simulations (Aqmarinal & Susilo, 2025). These forms of digital media have penetrated all levels of society, regardless of age, region, or educational background.

Compared to traditional teaching methods, the use of digital media is considered superior in terms of efficiency, creativity, and more engaging content delivery. Learners can now access a wide range of educational information through devices such as laptops, tablets, and computers, as well as educational television screens. According to the Cognitive Theory of Multimedia Learning, developed by Mayer (2009), the use of digital media that combines text, images, audio, and animation has been shown to enhance conceptual understanding and improve overall learning quality. In other words, digital media-based learning can reduce boredom, strengthen learning focus, and enrich students' learning experiences.

On the other hand, the quality of students' learning is determined not only by the material delivered by teachers but also by how the material is packaged. Digital media has become an important factor influencing learning outcomes.

Learning outcomes reflect the extent to which students' knowledge, attitudes, and skills change after the learning process (Fathiyaturrahmani, 2020). When the learning media used are more engaging, interactive, and easy to understand, students tend to show improvement in cognitive, affective, and psychomotor domains.

In the context of Islamic education, the use of digital media has also become increasingly relevant. Students can study Islamic Religious Education (PAI) materials through visual displays such as videos demonstrating worship practices, illustrations of Islamic history, audio-based Qur'an reading lessons, and animations explaining fiqh rules. This aligns with Firmansyah et al. (2022), who emphasize that PAI learning can be more effective when delivered through technologies that offer contextual, engaging learning experiences.

SMP IT Bina Insan Palu is one of the schools that have implemented technology integration into their teaching and learning activities. By using devices such as projectors, educational TVs, computers, and tablets, the school strives to address contemporary challenges by creating a more modern, adaptive learning environment. In fact, the school profile highlights that one of its graduate competencies is technological literacy and the ability to utilize digital media as a learning support tool. However, based on field observations, the use of digital media has not consistently had a significant impact on students' learning outcomes, particularly in Islamic Religious Education. Some students appear more motivated when materials are presented visually, while others still struggle to understand concepts even when digital media are used.

This phenomenon is consistent with previous literature, which states that digital media can exert both positive and negative influences depending on the instructional design and teachers' ability to manage it. Some students show improved learning outcomes because digital media makes lessons more appealing, whereas others become distracted and less focused. Thus, the influence of digital media on learning outcomes cannot be generalized; instead, it needs to be examined through empirical research.

Based on these social phenomena and the existing theoretical framework, it can be preliminarily assumed that digital learning media may influence students' learning outcomes in PAI. However, the novelty of this study lies in its focus on the local context of SMP IT Bina Insan Palu, which is actively optimizing technology as part of its instructional system. Therefore, it is important to conduct a scientific investigation to determine the extent to which digital learning media affect Islamic Religious Education learning outcomes at the school.

2. Theoretical Framework

The theoretical framework of this research centers on two primary concepts: digital learning media and students' learning outcomes. These concepts are closely interconnected, as the choice and design of instructional media can significantly influence how students receive, process, and retain information. In the context of modern education, digital learning media serves not only as a tool for delivering content but also as a medium that shapes the overall learning experience. Therefore, understanding the relationship between these two variables is essential for examining how effective learning can be achieved through technological integration.

Digital learning media refers to various technology-based tools and platforms used to facilitate the teaching and learning process. These include multimedia presentations, interactive applications, online learning platforms, and virtual simulations that provide diverse ways of presenting information. The theoretical foundation of digital learning media is often linked to the cognitive theory of multimedia learning, which emphasizes that learners understand information more effectively when it is presented through a combination of words and visuals. This approach allows students to build mental connections between different forms of information, leading to deeper comprehension and better retention.

On the other hand, students' learning outcomes refer to the measurable knowledge, skills, attitudes, and competencies that learners acquire after participating in a learning process. Learning outcomes are commonly categorized into cognitive, affective, and psychomotor domains, reflecting a comprehensive view of student development. The achievement of these outcomes depends on various factors, including instructional strategies, learning environments, and the media used to deliver content. Effective learning outcomes indicate that students have successfully understood and applied the material being taught.

The relationship between digital learning media and learning outcomes can be explained by the role of media as mediators in the learning process. Well-designed digital media can enhance students' engagement, motivation, and interaction, all of which contribute to improved learning outcomes. Conversely, poorly designed or inappropriate use of digital tools may hinder understanding and reduce learning effectiveness. Therefore, it is important for educators to carefully select and design digital learning media that align with instructional objectives and students' needs.

In conclusion, this theoretical framework highlights the dynamic link between digital learning media and students' learning outcomes. A clear understanding of both concepts and their theoretical underpinnings provides a strong basis for analyzing how digital tools can be utilized to optimize educational practices. By integrating appropriate media with sound pedagogical principles, educators can create meaningful learning experiences that lead to improved student achievement.

2.1 Digital Learning Media

The term *media* originates from the Latin word *medius*, which means "middle." In general, media refers to any medium used to distribute, carry, or convey messages and ideas to recipients (Azhari, 2015). Meanwhile, learning is a systematic process between educators and learners designed to create educational interactions that lead to meaningful learning experiences. Combining these two terms, learning media can be understood as any tool, material, or technology used to deliver instructional messages to learners to make the learning process more effective.

In recent developments, learning media have transformed from conventional formats to digital ones. Digital learning media refer to devices, applications, or information technology-based platforms used to present learning materials in digital formats such as text, audio, video, animations, infographics, and interactive simulations. According to Ahdar and Nusriani (2023), the use of learning media not only facilitates the delivery of material but also encourages students to become more responsible, capable of managing their own learning processes, and oriented toward long-term learning goals.

Mayer's Multimedia Learning Theory reinforces the idea that learning is more effective when information is presented through a combination of visual and auditory elements, as this helps learners process and retain information more effectively (Rahayu et al., 2024). Therefore, digital media such as interactive slides, instructional videos, educational applications, and e-learning platforms hold great potential for enhancing students' interest, motivation, and understanding of learning materials.

Digital learning media refers to a wide range of technology-based tools and platforms used to support the teaching and learning process. These media include educational applications, interactive videos, e-books, Learning Management Systems (LMS), and computer-based simulations that enable more flexible and engaging delivery of instructional content. The rapid development of information and communication technology has significantly expanded the use of digital media in education, allowing learning to take place beyond the constraints of time and space (Mayer, 2014).

One of the main advantages of digital learning media is its ability to enhance student engagement. Through multimedia elements such as animations, audio, and interactive features, learners can better understand complex or abstract concepts. In addition, digital media supports self-paced learning, where students can access materials at any time to suit their individual needs and learning speeds. This flexibility has been shown to improve learning outcomes compared to traditional teaching methods (Clark & Mayer, 2016).

However, implementing digital learning media also presents several challenges. Limited access to technological infrastructure, such as reliable internet connections and digital devices, remains a major barrier in some regions. Furthermore, teachers' ability to effectively integrate technology into their teaching practices plays a crucial role in the success of digital learning. Therefore, continuous professional development and training for educators are essential to maximize the benefits of these technologies (Koehler & Mishra, 2009).

In conclusion, digital learning media have great potential to improve the quality of education when supported by adequate infrastructure and competent human resources. The integration of technology in education is no longer just a trend but a necessity in preparing students for the demands of the digital era. Collaboration among governments, educational institutions, and communities is needed to ensure the effective and equitable use of digital learning media (Selwyn, 2016).

Based on these perspectives, digital learning media can be concluded as a set of digital-based technologies or platforms used to deliver instructional content in a more engaging, interactive, efficient, and accessible manner, thereby improving the quality of both learning processes and learning outcomes.

2.2 Learning Outcomes

Learning outcomes are one of the main indicators used to assess the success of the learning process. Simply put, learning outcomes are the abilities students acquire through learning activities, including knowledge, attitudes, and skills (Telaumbanua & Laoli, 2023). They reflect the extent to which students experience behavioral changes as a result of their learning.

According to Sudjana (2016), learning outcomes are the abilities students acquire through learning experiences, encompassing the cognitive, affective, and psychomotor domains (Muslimah et al., 2017). This definition emphasizes that learning outcomes are not merely about grades or test scores but include the overall development of students' potential. Bloom also suggested that learning outcomes can be observed through three key aspects: knowledge (cognitive), attitudes and values (affective), and skills (psychomotor).

More specifically, learning outcomes can be understood as behavioral changes resulting from interactions between students and their learning environment. Dimiyati and Mudjiono (2018) explained that learning outcomes are internal changes that emerge as a result of a planned learning process. These changes can include increased conceptual understanding, the development of religious attitudes, and the ability to perform tasks skillfully.

In the context of Islamic Religious Education (PAI), learning outcomes not only indicate students' mastery of subjects such as *aqidah* (creed), worship, and ethics but also reflect their ability to demonstrate spiritual attitudes, good behavior, and understanding of Islamic values in daily life. In other words, PAI learning outcomes encompass religious knowledge, religious attitudes, and skills in practicing Islamic teachings.

Learning outcomes are influenced by various factors, both internal and external. Internal factors include students' motivation, interest, learning readiness, and basic abilities. External factors include teachers' instructional strategies, the learning environment, school facilities, and the use of appropriate learning media. Digital learning media, for instance, can serve as an external factor that helps students understand the material more quickly through engaging visual and audio presentations.

Based on these concepts, learning outcomes can be defined as a representation of students' mastery of the learning materials, encompassing knowledge, attitudes, and skills, achieved through a planned and systematic learning process. Factors affecting learning outcomes may originate from within the student, such as motivation, interest, readiness, and basic abilities, or from external factors, such as the learning environment, teachers' instructional strategies, school facilities, and learning media. Digital learning media play an important role as an external factor, facilitating students' understanding of the material through interactive, engaging, and easily accessible audiovisual presentations.

Several previous studies, including those by Saputra et al. (2021), Akbar & Arsyad (2025), Kusuma (2021), and Bakri (2018), have confirmed that digital media significantly affects learning outcomes, both directly by presenting material more effectively and indirectly by enhancing motivation and participation in learning. However, these positive effects occur only when the use of digital media is designed with clear pedagogical objectives and optimally managed by the teacher.

The implementation of digital learning media is expected to produce measurable and meaningful learning outcomes for students. One primary outcome is the improvement of students' conceptual understanding. Through multimedia elements such as videos, animations, and simulations, learners are better able to grasp complex and abstract concepts. This aligns with the cognitive theory of multimedia learning, which suggests that combining visual and verbal information enhances knowledge retention and comprehension (Mayer, 2014).

Another important learning outcome is the development of students' digital literacy skills. By engaging with digital platforms, learners become more proficient in using technology, navigating online resources, and critically evaluating information. These skills are essential in the 21st century, where digital competence is a key component of both academic success and workforce readiness (Selwyn, 2016).

Digital learning media also fosters independent and self-regulated learning. Students are encouraged to take greater responsibility for their own learning by accessing materials at their own pace, setting learning goals, and monitoring their progress. This autonomy not only increases motivation but also helps learners develop lifelong learning habits (Clark & Mayer, 2016).

In addition, the use of digital media can enhance collaboration and communication skills. Many digital platforms include interactive features such as discussion forums, group projects, and real-time feedback, allowing students to work together and share ideas effectively. This collaborative environment supports deeper learning and the development of social skills necessary for academic and professional contexts (Koehler & Mishra, 2009).

2.3 Hipotesis

Based on the theoretical framework and previous research, the hypotheses of this study are formulated as follows:

H0: There is no significant effect of digital learning media on the Islamic Religious Education (PAI) learning outcomes of students at SMP IT Bina Insan Palu.

Ha: There is a significant effect of digital learning media on the Islamic Religious Education (PAI) learning outcomes of students at SMP IT Bina Insan Palu.

3. Research Method

This research employed a quantitative, cross-sectional design, in which data were collected at a single point in time according to the data collection schedule at SMP IT Bina Insan Palu. The population consisted of all eighth-grade students, totaling 60 individuals. Given the relatively small population size, this study used a saturated sampling technique, meaning that all members of the population were automatically included as research subjects.

The main variables in this research were the independent variable, digital learning media (X), and the dependent variable, Islamic Religious Education (PAI) learning outcomes (Y). Indicators of digital learning media included the quality of the material presentation, ease of access, the use of digital devices during learning, and the interactivity of the presented material.

Meanwhile, the indicators of learning outcomes included conceptual understanding of PAI, ability to complete evaluations, religious attitudes, and practical skills in worship demonstrated after the learning process. Data were collected using a closed-ended questionnaire based on a five-point Likert scale, ranging from "strongly agree" to "strongly disagree." The questionnaire was adapted from previous research instruments and had been tested for validity and reliability. In addition to the questionnaire, supporting data were obtained through preliminary observations and documentation of students' learning outcome scores.

Data analysis was conducted quantitatively using SPSS version 24. The analysis began with a normality test using the Kolmogorov–Smirnov method, followed by a t-test to examine the significance of the effect of variable X on variable Y, and a coefficient of determination (R^2) to determine the extent to which digital learning media contributed to students' PAI learning outcomes at the school.

4. Research Findings and Discussion

The results of this research were obtained through the analysis of questionnaire data on digital learning media and documentation of the Islamic Religious Education (PAI) learning outcomes of eighth-grade students at SMP IT Bina Insan Palu. The data were analyzed using a t-test to examine the effect of the digital learning media variable (X) on the PAI learning outcomes variable (Y).

4.1 Normality Test

The normality test was a statistical method used to determine whether the data distribution in this research is normally distributed. This step is essential before proceeding to hypothesis testing, ensuring that the analysis is based on data that meet statistical assumptions. The principle is straightforward: if the significance value (Sig.) is greater than 0.05, the data are considered normally distributed; conversely, if the value is below 0.05, the data are considered non-normal. In this study, the normality test was conducted using SPSS version 24, and the complete results are presented in the following table:

Tabel 4.1 Normality Test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	.070	60	.200*	.988	60	.826

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

From the analysis output, the Asymp. Sig. (2-tailed) value was **0.200**, which is well above the significance threshold of 0.05. Therefore, the data in this study can be considered normally distributed, meaning that all prerequisites for parametric statistical analysis have been met, and the process can proceed to the next stage of hypothesis testing.

4.2 T-Test

The **t-test** was used to examine the extent to which digital learning media affects the PAI learning outcomes of students at SMP IT Bina Insan Palu.

Tabel 4.2 T-Test Result

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1					
	(Constant)	19.653	7.127	2.757	.008
	X	.458	.189	.303	.019

a. Dependent Variable: Y

Based on the t-test table, the **calculated t-value** was **2.423**. With a sample size of 60, the degrees of freedom (df) were obtained using the formula $n-2$, which equals $60-2 = 58$. Since the calculated t-value (2.423) is greater than the t-table value (1.672) and the significance value is below 0.05, **H_0 is rejected and H_a is accepted**. This indicates that there is a significant effect of using digital learning media on the PAI learning outcomes of students at SMP IT Bina Insan Palu.

4.3 Uji Koefisien Determinasi (R^2)

The **coefficient of determination** from the model summary can be seen in the following table:

Tabel 4.3 Hasil Uji koefisien Determinasi (R^2)

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.303 ^a	.092	.076	6.108

a. Predictors: (Constant), X

b. Dependent Variable: Y

Based on the table above, the coefficient of determination (R^2) was 0.092. This indicates that the independent variable (X) explains 9.2% of the variation in the dependent variable (Y), with the remaining 90.8% explained by other variables outside the scope of this study. The correlation coefficient (R) of 0.303 indicates a positive relationship between variables X and Y, although the strength of this relationship is relatively low.

The findings of this study indicate that the use of digital learning media positively affects students' PAI learning outcomes. Although its contribution is modest—only 9.2%—this result aligns with Mayer's Cognitive Theory of Multimedia Learning, which states that learning is more effective when information is presented in multiple formats, such as text, images, audio, and video. Digital media provides students with access to more interactive materials, such as worship practice videos, Islamic history animations, and educational presentations that can reinforce conceptual understanding.

These findings are also consistent with Bakri (2021), who demonstrated that digital media can enhance learning outcomes if used with clear pedagogical guidance, and with Kusuma (2020), who found that digital media can enrich students' learning experiences. However, this result also aligns with warnings from several studies that uncontrolled use of digital media can reduce focus on learning and create distractions. Thus, the influence of digital media has two sides: it becomes positive when used to support understanding of the material, but can be less effective if not accompanied by proper classroom management and learning supervision.

5. Summary

Based on the t-test results, the calculated t-value of 2.423 is greater than the t-table value of 1.672, so H_0 is rejected and H_a is accepted. This indicates a significant effect of digital learning media on students' learning outcomes at SMP IT Bina Insan Palu. The use of digital media accounts for 9.2% of the variance in learning outcomes, indicating that, although other factors also influence student achievement, the intensity of digital media usage still makes a meaningful contribution.

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