



The Effectiveness of Technology-Based Islamic Education Learning in the Digital Era at SMAN 1 Bojonegoro

*Febiana Safira Anggraini^{1,a}, Mita Aprillia^{2,b}, Reva Khusnun Syahputra^{3,c}, Thoriq Aji Silmi^{4,d}

¹Graduate Program of Sports Education, Semarang State University, Central Java, Indonesia

²Management, Brawijaya University, Malang, East Java, Indonesia

³Sports and Health Science, State University of Surabaya, East Java, Indonesia

⁴Graduate Program of Islamic Education, State Islamic University of Sunan Ampel Surabaya, East Java, Indonesia

febianasafira1@gmail.com^a, aprilliamita81@gmail.com^b, revamadridista@gmail.com^c, thoriqajisilmi@gmail.com^d

ARTICLE INFORMATION

Article History:

Received : 24/06/2024

Revised : 18/08/2024

Accepted : 20/08/2024

Published : 30/09/2024

Keywords:

Digital Era; Islamic Education; Technology Based

DOI:

<https://doi.org/10.46963/asatiza.v5i3.2006>

*Correspondence Author:

febianasafira1@gmail.com

Abstract

Technology has become an integral part of daily life, including the field of education, where it provides broad access to information and resources. This study aims to examine the implementation of technology-based Islamic Religious Education (PAI), which is equivalent to Islamic Education, at SMAN 1 Bojonegoro. Utilizing a qualitative method with descriptive analysis, data were collected through observation, interviews, and documentation to ensure the validity of the information. The research subjects included PAI teachers and selected students from SMAN 1 Bojonegoro. The findings show that the implementation of technology-based PAI learning, using platforms such as Quizizz, Microsoft PowerPoint, and Google Classroom, has proven to be effective. Students demonstrated more active and engaging interaction, which in turn enhanced their understanding of PAI materials. These findings indicate that integrating technology into PAI learning can provide significant benefits to the teaching and learning process.

©Authors (2024). Licensed Under [CC BY SA](https://creativecommons.org/licenses/by-sa/4.0/)

How to cite this article:

Anggraini, F. S., Aprillia, M., Syahputra, R. K., & Silmi, T. A. (2024). The effectiveness of technology-based Islamic education learning in the digital era at SMAN 1 Bojonegoro. *Asatiza: Jurnal Pendidikan*, 5(3), 341-348. <https://doi.org/10.46963/asatiza.v5i3.2006>

INTRODUCTION

The digital era is characterized by the rapid development of information and communication technology, transforming various aspects of human life. This era allows access to a vast array of information without the restrictions of space or time. The digital generation tends to seek information

on the internet using smartphones and other technological devices to meet their informational needs, including in the field of education (Suraijiah et al., 2023). Technology has become an integral part of daily life, providing extensive access to educational resources and presenting significant opportunities for innovation in

teaching methods, especially in Islamic Education (Pendidikan Agama Islam, PAI) (Susilowati., et all, 2023).

As educational institutions strive to adapt to these technological advancements, they face challenges regarding how to leverage technology effectively in the learning process. The utilization of technology in education, particularly in Islamic Education, has become a significant concern in this digital era. In this context, technology can enhance the effectiveness and quality of the teaching and learning process. According to Barokah (2023), technology-based learning facilitates a more interactive and engaging learning experience. Various learning models have been developed, including the project-based learning model (Budiono et al., 2023), which encourages students to actively participate in the learning process. Furthermore, efforts to improve reading interest have become a focus in educational research, with Dermawan et al. (2023) demonstrating that appropriate strategies can enhance students' reading interest. The importance of multicultural learning in Islamic education is also highlighted by Hasnawati (2020), emphasizing that this approach helps students understand diversity. Additionally, the use of learning applications such as Quizizz has proven effective in increasing student engagement (Humairoh, 2023).

Islamic education plays a vital role in shaping students' character, morals, and spirituality. It is grounded in the teachings of the Qur'an and Hadith, as well as the inspirational thoughts of philosophers, intellectuals, and mujtahids. Indonesia, as the country with the largest Muslim

population, mandates PAI as a compulsory subject in schools. The aim is to cultivate a generation that possesses extensive knowledge of Islamic teachings while being able to implement Islamic values in everyday life (Ansyah, 2022). However, traditional teaching methods often encounter obstacles such as time constraints, limited resources, and a lack of student interest. Monotonous and less interactive learning experiences diminish the effectiveness of the teaching and learning process (Hasan., et all, 2023).

The rapid advancement of technology, particularly communication technology, has brought remarkable changes in education and learning. Innovative solutions to address the challenges faced by traditional Islamic education include the implementation of technology, which can enhance access, interactivity, and engagement in the teaching process. Utilizing e-learning platforms, Islamic education applications, social media, and technologies such as virtual reality (VR) and augmented reality (AR) can modernize Islamic education, making it more relevant to contemporary needs (Muthoin & Isbah, 2024). The integration of technology-based PAI learning is expected to improve educational quality and prepare students to be more competent and adaptable in a changing world.

Nevertheless, the implementation of technology-based learning is not without its challenges. Factors such as the availability of adequate technological infrastructure, the readiness of teachers and students to adopt technology, and the necessity for suitable, high-quality learning content require

attention (Wahyudi & Hasanah, 2019). Additionally, concerns about potential distractions stemming from technology use need to be managed effectively. In this context, research on the implementation of technology-based PAI learning in the digital era is of utmost importance. This study aims to provide insights into how technology can be effectively utilized in PAI learning while identifying existing challenges and potential solutions. Consequently, the goal is to develop a model of PAI learning that is effective and efficient, capable of motivating students to learn and understand Islamic teachings better.

Based on this background, the researcher is interested in further discussing “the implementation of technology-based Islamic education learning in the digital era at SMAN 1 Bojonegoro.” This study will explore various aspects of technology implementation in PAI learning, ranging from the use of e-learning platforms, educational applications, and social media to advanced technologies like VR and AR. Additionally, this research will examine the readiness of teachers and students, as well as the effectiveness of technology use on the learning process and outcomes. Thus, the results of this study are expected to contribute significantly to the development of Islamic education in the digital era. Identifying effective methods for PAI learning and assessing the effectiveness of technology use in this context is crucial for supporting student learning and understanding in the digital era (Susilowati., et all, 2023).

METHOD

The research method employed in this study is qualitative in nature. Methodology

encompasses the processes, principles, and procedures utilized to address a particular problem and seek appropriate solutions (Mulyana, 2008). According to Sugiyono (2007), qualitative research methods are utilized to examine subjects within their natural contexts, wherein the researcher serves as the primary instrument. Data collection techniques are conducted in a combined manner, with data analysis being inductive, emphasizing the significance of meaning over generalization. As outlined by Bogdan and Biklen, as cited in Sugiyono (2020), descriptive qualitative research involves the collection of data in the form of words or images, thereby not placing a significant emphasis on numerical data. The collected data, following analysis, is then described in a manner that facilitates comprehension by others.

The aim of this descriptive research is to provide a systematic, factual, and accurate portrayal of the facts, characteristics, and relationships among the phenomena under investigation. Within the context of this study, this aim is directed towards illustrating, elaborating upon, and interpreting the conditions related to the implementation of technology-based Islamic education (PAI) in the digital era at SMAN 1 Bojonegoro. The subjects of this research include the PAI teachers at SMAN 1 Bojonegoro and representatives of the student body. The data collection techniques employed in this study encompass observation, interviews, and documentation, ensuring the validity and reliability of the data obtained.

RESULT AND DISCUSSION

Implementation of Technology-Based Islamic Education

The strategic planning of digital media learning designed by educators serves as the initial step toward achieving educational goals, integrating information with improved management, and incorporating the topic of digitalization into learning for students while considering the necessary tools and resources for practical implementation (Iivari et al., 2018). In line with this statement, the role of educators, particularly teachers, is fundamental in facilitating digital-based education in the current era. The era of digital learning can yield positive impacts for students; however, negative consequences may also arise from this digitalization. These challenges can be anticipated through collaboration among schools, educators, and parents. The application of digital media in education requires cooperation between the school and parents to achieve the anticipated educational objectives.

Furthermore, the transformation to digital education initially posed challenges for the educational landscape during the COVID-19 pandemic, which necessitated a shift from traditional face-to-face learning to online instruction. Digital transformation can be understood as the process of utilizing existing digital media, such as cloud technology integrated with virtualization, mobile computing, and other media (Loonam et al., 2018). This process of transitioning education from face-to-face to online instruction also occurred at SMAN 1 Bojonegoro. The adaptation to technology-based learning continues to this day, even post-pandemic. Various digital media are employed for the teaching and learning process at SMAN 1 Bojonegoro. Educational media are typically defined as

multifunctional tools that educators use to disseminate learning information, stimulating students' thoughts, feelings, attention, and capabilities, thereby facilitating the learning process (Syahrijar, 2023).

Based on interviews conducted with the research subjects, specifically the Islamic Religious Education (PAI) teachers at SMAN 1 Bojonegoro, the e-learning media utilized in PAI includes Quizizz. This application creates a digital classroom environment, which is anticipated to enhance students' interest and learning outcomes. The functionality of Quizizz is quite diverse; it serves not only as a classroom space but also as a platform for submitting assignments, distributing tasks, and assessing students' answers in real time. The presence of this application encourages students to engage more actively in practice questions, as it provides various quizzes that they can complete.

In alignment with the PAI teachers at SMAN 1 Bojonegoro, student interviews reveal that the use of the Quizizz application increases their interest in the learning process. Additionally, students express that this application improves their concentration during lessons. They find the Quizizz interface easy to navigate, which facilitates a swift understanding of its features. Research conducted by Leony Sanga Lamsari Purba indicates that utilizing Quizizz as a learning medium can foster attention, comprehension, engagement, precision, and calmness among students.

Moreover, another digital medium employed in learning is Microsoft PowerPoint, which is defined as a computer program for presentations developed by

Microsoft as part of the Microsoft Office suite, alongside several other applications. Microsoft PowerPoint offers various features that aid in creating effective and professional presentations, helping to convey ideas in a more engaging and clear manner while reducing student boredom in the classroom. According to Suprapti (2016) in Alfrida (2021), Microsoft PowerPoint is a program that enables the creation of highly effective and engaging educational media for presentations. Its advantages include the ability to present information in various formats, such as text, graphics, images, animations, audio, and video with specific effects, while also allowing integration with other file formats and customization options. With PowerPoint, educators can design applications that help students interact with the subject matter more easily. To create effective presentation media using Microsoft PowerPoint, proper preparation, creation, and presentation techniques are essential.

Students at SMAN 1 Bojonegoro explain that learning Islamic Religious Education through Microsoft PowerPoint makes it easier to comprehend the material, as the key points presented are clearer and more concise. Additionally, the appealing visuals enhance students' interest. In accordance with the educators' expectations, the PAI teachers at SMAN 1 Bojonegoro hope that using Microsoft PowerPoint will facilitate better understanding of the material, as teachers strive to simplify the language in their teaching to enhance comprehension.

Lastly, Google Classroom is an online learning method designed to improve

educational quality by addressing classroom limitations (Blundo, 2011) in Sukmawati and Nensia (2019). Google Classroom serves as one of the online learning media for students at SMAN 1 Bojonegoro. Through this method, the creation and distribution of assignments can be accomplished via Gmail and subsequently shared in Google Classroom. Students can be invited to join the classroom using various methods, such as through institutional databases or by sharing personal codes between students and educators. With Google Classroom, educators can engage in discussions with students throughout the online learning process.

According to the PAI educators at SMAN 1 Bojonegoro, the use of Google Classroom has proven to be quite effective for e-learning, especially during the COVID-19 pandemic. This effectiveness stems from the ease of access provided by the application, allowing both students and teachers to conveniently access assignments and available learning resources. Teachers can actively monitor students' learning progress through the assignments given.

The Effectiveness of Technology Use

One of the efforts toward digitalization in education in Indonesia involves implementing digital-based learning, which is also applied to Islamic Religious Education (PAI) at SMAN 1 Bojonegoro. Students are encouraged to utilize various digital media in the learning process, accessible through computers, laptops, smartphones, and other devices. This digitalization process not only serves as a learning method but also fosters technological literacy among students,

enabling them to explore learning media through various applications. One of the popular approaches today is blended learning, which combines face-to-face and online instruction. This approach can enhance the effectiveness of learning (Haeruman et al., 2021). Additionally, the use of virtual labs in subjects like physics education provides a more engaging and interactive learning experience (Rahma, 2020).

The effectiveness of educational technology in the learning process hinges on the models employed in such learning. The influence of the 21st-century learning model on students' cognitive abilities is a critical focus, enhancing creativity and problem-solving skills among students (Rahmawati, 2022). Amid the challenges of online education, it is crucial to address the obstacles faced in the learning process. Sukmawati and Nensia (2019) asserts that the strategic use of technology can help educators overcome these challenges, thereby facilitating a more effective educational experience. Furthermore, the incorporation of multimedia in education allows for the integration of diverse media, such as images, audio, video, and text, within a single presentation, facilitating students' comprehension of the material being taught (Dermawan et al., 2023). In addition to developing effective technology use in education, it is essential to consider appropriate learning models that leverage technology to improve students' academic performance (Rahma, 2021).

The development of technology-based learning models at SMAN 1 Bojonegoro in the context of Islamic Religious Education, utilizing classroom

tools, has proven to enhance student learning outcomes. This approach enables students to access learning materials through videos or online resources prior to entering the classroom, allowing class time to be devoted to discussions and the application of concepts previously studied. However, accessibility of technology remains a critical factor; students lacking adequate access to technology will encounter difficulties in retrieving online learning materials, potentially impacting their academic performance (Haeruman et al., 2021). Collaboration among educators, schools, and parents is essential to mitigate these challenges. SMAN 1 Bojonegoro has provided various facilities to support technology-based learning activities, including Wi-Fi and other resources. Educators are committed to enhancing learning methods, preparing materials for digital learning, and offering online classes through platforms like Quizizz and Google Classroom.

The use of digital media in Islamic Religious Education at SMAN 1 Bojonegoro has proven to be effective and influential in improving students' learning outcomes. This effectiveness is particularly evident in students' understanding of material accessed through e-learning platforms. Students find it easier to access learning materials not only from textbooks but also from resources shared by teachers via digital media. Thus, the incorporation of digital media in education supports students throughout their learning process. However, inadequate technology can adversely affect students' learning outcomes, as they may struggle to access learning materials effectively (Rahmawati, 2022).

CONCLUSION

The implementation of Islamic Education (PAI) teaching at SMAN 1 Bojonegoro, based on technology and utilizing platforms such as Quizizz, Microsoft PowerPoint, and Google Classroom, demonstrates the readiness of both teachers and students to adopt technology. This is also reflected in the increased interest and learning outcomes of students. Overall, the effectiveness of using technology media in Islamic education has increasingly been validated, as stated by Suraijjah et al. (2023). The analysis of technology usage in education also indicates positive impacts on students' learning outcomes (Suyuti et al., 2023). However, challenges such as the availability of adequate infrastructure and high-quality learning content still need to be addressed. Therefore, the school must focus on enhancing infrastructure, providing training for teachers, and developing relevant content.

The use of technology in PAI not only enhances interactivity but also offers a variety of teaching methods that make the learning experience more engaging and effective. Technology facilitates a more interactive learning process, significantly improving students' understanding of PAI material. Therefore, it is essential for educators to continuously develop and utilize technology in the learning process to achieve optimal results. This teaching model can be adopted by other schools to enhance the effectiveness of PAI learning in the digital era.

REFERENCES

- Ansyah, E. (2022). The role of digital learning in Islamic education: An analysis of acceptance technology in Indonesia. *Eurasian Journal of Educational Research*, 10(2), 21-38. <https://doi.org/10.14689/ejer.2022.102.002>
- Barokah, J. (2023). Tren dan Perkembangan dalam Pembelajaran Berbasis Teknologi dalam Pendidikan Agama Islam. *Jurnal Pendidikan Profesi Guru Agama Islam*, 3(5), 203–213. <https://studentjournal.iaincurup.ac.id/index.php/guau/article/view/1111>
- Budiono, S., Sanusi, M., Ghafur, O. A., & Ardianto, R. A. (2023). Pembelajaran Pendidikan Agama Islam Berbasis Proyek. *Tsaqofah*, 4(3), 1534–1544. <https://doi.org/10.58578/tsaqofah.v4i3.2897>
- Dermawan, H., Malik, R. F., Suyitno, M., Dewi, R. A. P. K., Solissa, E. M., Mamun, A. H., & Hita, I. P. A. D. (2023). Gerakan Literasi Sekolah Sebagai Solusi Peningkatan Minat Baca Pada Anak Sekolah Dasar. *Edusaintek: Jurnal Pendidikan, Sains dan Teknologi*, 10(1), 311–328. <https://doi.org/10.47668/edusaintek.v10i1.723>
- Haeruman, L. D., Wijayanti, D. A., Meidianingsih, Q. (2021). Efektivitas Blended Learning Berbasis LMS dalam Pembelajaran Matematika. *Jurnal Riset Pembelajaran Matematika Sekolah*, 5(1), 80–84. <https://doi.org/10.21009/jrpms.051.10>
- Hasan, M., Taufiq, M., & Elmhemit, H. (2023). Digital transformation of Islamic education in pesantren Madura. *Tadris: Jurnal Pendidikan Islam* 18(2), 1-16. <https://doi.org/10.19105/tjpi.v18i2.10535>.

- Hasnawati, H. (2020). Pembelajaran Pendidikan Agama Islam Berbasis Multikultural. *Edukasi*, 8(2), 157–170. <https://doi.org/10.32520/judek.v8i2.1163>
- Humairoh. (2023). Analisis pemanfaatan aplikasi quizizz sebagai media pembelajaran dalam meningkatkan minat belajar siswa. *Inovasi Pembelajaran Dan Pendidikan Islam (JIPPI)*, 1(1), 1–12. <https://doi.org/10.30596/jippi.v1i1.1>
- Mulyana, D. (2008). *Metodologi Penelitian Kualitatif*. PT Remaja Rosdakarya.
- Muthoin, M., & Isbah, F. (2024). Digital Islam: Challenges and opportunities of Islamic education in the digital era. In *Proceedings of the International Conference on Islam and Education: Charting the Future of Islamic Education for Global Harmony* (Vol. 3, No. 1, pp. 939–949). <https://proceeding.uingusdur.ac.id/index.php/iconie/article/view/1735>
- Rahma, A. A. (2020). Efektivitas Penggunaan Virtual Lab Phet Sebagai Media Pembelajaran Fisika Terhadap Hasil Belajar Siswa. *Pedagogy: Jurnal Ilmiah Ilmu Pendidikan*, 8(2), 50. <https://ejournal.upm.ac.id/index.php/pedagogy/article/view/808>
- Rahmawati, I. (2022). Pengaruh penggunaan model pembelajaran abad 21 terhadap kemampuan kognitif peserta didik sekolah dasar. *Edusaintek: Jurnal Pendidikan, Sains dan Teknologi*, 9(2), 404–418. <https://doi.org/10.47668/edusaintek.v9i2.461>
- Sugiyono. (2007). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Alfabeta.
- Sukmawati, S., Nensia, N. (2019). The role of google classroom in ELT. *International Journal for Educational and Vocational Studies (IJEVS)*, 1(2), 142-145. <https://doi.org/10.29103/ijevs.v1i2.1526>
- Suraijiah, Rusdiana, Rusdiah, M. Ramli, & Murdan. (2023). The effectiveness of using media technology in Islamic religious education in an independent curriculum: Technocultural study of religious education. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 8(1), 335–349. <https://doi.org/10.25217/ji.v8i1.2760>
- Susilowati, R., Patih, A., Narulah, A., & Hermawan, W. (2023). Islamic education and learning technology. *International Journal of Education and Literature*, 2(3), 96–103. <https://doi.org/10.55606/ijel.v2i3.93>
- Suyuti, S., Ekasari Wahyuningrum, P. M., Jamil, M. A., Nawawi, M. L., Aditia, D., & Ayu Lia Rusmayani, N. G. (2023). Analisis efektivitas penggunaan teknologi dalam pendidikan terhadap peningkatan hasil belajar. *Journal on Education*, 6(1), 1–11. <https://doi.org/10.31004/joe.v6i1.2908>
- Syahrijar, I., Supriadi, U., & Fakhruddin, A. (2023). Upaya meningkatkan mutu pembelajaran PAI melalui pembelajaran berbasis digital (Studi eksploratif di SMA Negeri 15 dan SMA Alfa Centauri Kota Bandung). *Journal on Education*, 5(4), 13766–13782. <https://doi.org/10.31004/joe.v5i4.2389>
- Wahyudi, W., & Hasanah, U. (2019). Technology integration in Islamic education: A case study of Indonesian schools. *International Journal of Learning Management Systems*, 7(2), 85-95. <https://doi.org/10.5678/ijlms.v7i2.234>