

INTEGRATION OF TECHNOLOGY AND ISLAMIC EDUCATION: BUILDING INNOVATIVE LEARNING MODELS IN THE DIGITAL ERA

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Abstract: Integration of technology in Islamic education has become a strategic issue in facing the digital era. Technology has become an integral part of almost every aspect of life. This article discusses an innovative learning model that combines Islamic values and modern technology. With a descriptive-analytical approach based on literature studies, this study identifies challenges and opportunities in the application of technology in Islamic education. The results of the study indicate that the use of technology can improve the effectiveness of learning, as long as it is designed according to the principles of Islamic pedagogy. This article recommends a holistic technology-based learning model to support the transformation of Islamic education in the digital era.

Keywords: Technology integration, islamic education, learning model, innovation, digital era.

Introduction

The digital revolution has changed various aspects of life, including the education sector. Auliya (2024) stated that Islamic education, which has been known for its traditional values that prioritize character building and moral values, faces challenges in adapting to the development of modern technology (Muhammad Fatkhul Hajri, 2023). The integration of technology in Islamic education is not only about the digitalization of the learning process, but also about how technology can be used to strengthen Islamic values. (Ais Isti'ana, 2024)

Islamic education has strong roots in the tradition of learning that aims to form a complete human being (insan kamil) based on the teachings of the Qur'an and Hadith (Azra, 2020). In Islam, education is not only oriented towards the transfer of knowledge, but also the transformation of moral and spiritual values. The philosophical foundation of Islamic education rests on the concept of monotheism as the core of all educational activities, which aims to create harmony between knowledge, morals, and devotion to Allah SWT (Hairun Saleh, 2023).

Islamic education is regulated in various regulations, both at the national and international levels, which recognize the importance of integrating religious values with the development of science and technology (Zulkifli, 2018). In the context of globalization, technology has become a key element in accessing and conveying information widely. However, this phenomenon also presents challenges, such as the rapid flow of information that is not in accordance with Islamic values and the digital divide that hinders equal access to technology (Ria Jayanthi, Anggini Dinaseviani, 2022).

Islamic educational institutions are expected to be able to utilize various technologies. The Daarul Ishlah Nusantara Foundation is one of them that has begun implementing e-learning through a special platform developed in its teaching and learning process. In

addition, the use of social media to spread digital da'wah and increase engagement with all students. (Auliya, 2024)

The phenomenon of the use of technology in Islamic education shows diverse developments. For example, mobile applications such as Quran.com have helped Muslims around the world to study the Qur'an easily (Muthoin, Faliqul Isbah. 2024). On the other hand, Islamic educational institutions face major challenges in integrating technology effectively, especially in rural areas with minimal internet access. In addition, the COVID-19 pandemic has become a crucial moment that has accelerated the adoption of technology in various educational institutions, including madrasahs and Islamic boarding schools (Romi, 2022). However, this adoption is often not accompanied by sufficient understanding of how technology can be used optimally in accordance with Islamic principles.

The era of the digital revolution is an era where almost everyone is familiar with digital technology, even elderly adults and children. The generations created during the rapid advancement of technology are marked by the presence of smartphones and gadgets, video games, tablets, and so on. The generation that lives side by side with digital technology screens from an early age, so it is called the "glass generation" (Tamim, R., & Bernard, R. (2021).

Technology integration in education refers to the use of digital tools to enhance the learning process. In the context of Islamic education, this integration must consider the values of monotheism, morals, and science. According to Muhammad Akib (2024), technology can be an effective tool for conveying moral and spiritual messages, as long as its use is in line with Islamic law and creates a learning experience that is more interesting, interactive, modern and relevant to the needs of the future generation of gen Z, Alpha, Beta.

Islamic education has the main goal of forming a perfect human being with noble character. Technology can be a supporting tool to achieve this goal through: Islamic e-Learning, an online learning platform based on Islamic values. Mobile applications of various interactive media to teach the Qur'an and Hadith. Virtual Reality content simulating the experience of hajj or pilgrimage virtually (Bunt, G. R., 2018).

This article aims to explore how technology integration can support innovative Islamic education learning, while addressing existing normative and philosophical challenges. By examining various cases and approaches, this article also offers a technology-based learning model that is not only academically relevant, but also in line with Islamic values.

Literature Review

1. The Importance of Technology Integration in Education

Technology integration in education has become an urgent need in today's digital era. According to Alavi, S. (2019), technology not only functions as a teaching aid but is also able to create an interactive and collaborative learning environment. Technology provides broad access to learning resources, enables personalization in the learning process, and increases student engagement.

2. Technology in Islamic Education

Islamic education has also undergone a significant transformation with the presence of technology. The use of technology in Islamic religious learning improves students' understanding of Islamic values. Technologies such as mobile applications, e-learning platforms, and social media are used to deliver more interesting and interactive learning materials.

3. Innovative Learning Models

Innovative learning models in the digital era include the use of technology to support various learning methods. (Ahmad, K. (2021) models such as flipped classroom and blended learning have been applied in Islamic education, allowing students to learn independently and deepen their understanding through classroom discussions. In addition, the use of multimedia in delivering teaching materials has been shown to increase students' learning motivation.

4. Advantages and Challenges of Technology Integration

Technology integration in education offers various advantages such as learning flexibility, access to extensive learning resources, and more engaging learning. However, challenges such as the digital divide, lack of teacher competence in using technology, and data security issues are major concerns. The importance of teacher training and infrastructure development to address these challenges.

5. The Role of Teachers in Technology Integration

The role of teachers is crucial in the implementation of technology in education. Teachers need to be trained to utilize technology effectively and integrate it into the curriculum. Training and professional development of teachers in the field of technology are essential to ensure that they can adapt learning methods according to the needs of the digital era.

6. Technology-Based Curriculum

A curriculum integrated with technology requires a mature design that is in accordance with student needs, emphasizing the importance of an adaptive and flexible curriculum in accommodating technological developments (Akrim, A., Setiawan, H. R., Selamat, S., & Ginting, N.,2022). The curriculum must be designed to facilitate the use of technology as an effective and relevant learning tool in the context of Islamic education.

7. Case Studies of Technology Integration in Islamic Education

Several case studies show that technology integration in Islamic education has produced positive results. (Mohammad Akib 2024) For example, the use of technology-based Al-Qur'an learning applications shows a significant increase in students' ability to read the Al-Qur'an. This study underlines the importance of innovation in teaching methods to improve the quality of Islamic education.

The integration of technology in Islamic education is an important step to face the challenges of the digital era. The development of innovative learning models that utilize technology can improve the quality of education and student engagement. However, the success of this integration requires support from various parties, including the development of an adaptive curriculum, teacher training, and the provision of adequate infrastructure.

Method

This study uses a descriptive-analytical approach based on literature studies, to describe phenomena systematically, factually, and accurately, while analyzing the relationship between related variables (Creswell, 2018). This approach allows researchers to understand various concepts, theories, and research findings that are relevant to the topic.

Data collection was carried out by accessing scientific sources such as indexed journals, academic books, proceedings, and scientific articles published in the last five to ten years, in accordance with the principle of up-to-date in literature research (Zed, 2019). The data obtained were then analyzed using the content analysis method, which aims to identify challenges, opportunities, and innovative learning models in the integration of technology and Islamic education.

This analysis process involves several procedures as follows;

1. Literature exploration, by identifying relevant literature with a focus on the integration of technology in Islamic education.
2. Data categorization, in the form of grouping data based on main themes, such as challenges, opportunities, and innovative learning models.
3. Interpretation of findings, by compiling a narrative based on the results of the analysis to contribute to the development of Islamic education theory and practice.

With this method, research is expected to provide applicable and relevant recommendations for the development of learning in the digital era.

Result and Discussion

Challenges in Technology Integration in Islamic Education

One of the main challenges in implementing technology in Islamic education is the digital divide, which is especially felt in rural or remote areas (Okta Farhan Syahendra, 2024). According to Nasrullah and Rahim (2021), (Khan, 2020) the lack of technological infrastructure such as internet networks and hardware is a significant obstacle in supporting technology-based learning. In addition, digital literacy among educators and students is still low, thus hampering the optimization of technology in the learning process (Alavi, 2019).

The quality of human resources in Islamic educational institutions is also a challenge. Dabbagh and Kitsantas (2020) stated that the success of technology integration is highly dependent on the competence of teachers in using technology effectively. However, most educators in madrasahs and Islamic boarding schools do not have adequate training in implementing technology based on Islamic pedagogy.

Digital ethics is another challenge that needs attention. Hamid and Ali (2019) show that the use of technology can lead to potential abuse, such as access to content that is not in accordance with Islamic values. Therefore, clear guidelines are needed to ensure that technology is used in accordance with Islamic principles.

Opportunities for Technology Integration in Islamic Education

Technology offers great opportunities to increase the accessibility of Islamic education. Digital platforms such as the Quran.com application have helped spread Qur'an learning throughout the world (Nurzannah, 2022). In addition, technology allows for more personalized and adaptive customization of learning, according to the needs of each student (Anderson & Dron, 2017).

The COVID-19 pandemic has also accelerated the adoption of technology in Islamic educational institutions, which previously faced resistance to change. Yusuf (2022) noted that online learning has become a primary solution during the pandemic, opening up opportunities to develop more structured technology-based learning models. In addition, virtual reality (VR) has been used to provide immersive learning experiences, such as virtual simulations of the Hajj pilgrimage (Mohamad & Salleh, 2021).



Gambar. 1. Learning Activities with wifi internet

The use of technology in learning has become more interesting and interactive, utilizing learning videos, infographics and animations. The use of social media for Da'wah and Learning through Face Book, Instagram, You Tube, Tik Tok and so on. Personalized Learning through AI Technology Artificial intelligence (AI) technology can support the effectiveness of understanding complex religious concepts.

Innovative Learning Models

1. Islamic Blended Learning

Blended learning, which combines online and face-to-face learning, is one of the most relevant models for Islamic education. According to Garrison and Vaughan (2018), this model allows flexibility in learning without reducing personal interaction between teachers and students. In the context of Islamic education, blended learning can integrate online yellow book studies with in-depth discussions directly.

2. Islamic Gamification



Gambar 2. Gamification learning

Gamification uses game elements to increase student engagement. Ayhan Bilmez, Eyup Şimşe. (2024) stated that gamification can be used to teach Islamic values in a fun and interactive way. Through the development of an Islamic-based quiz application that tests students' knowledge of the Qur'an and Hadith.

3. Project-Based Learning



Gambar 3. Technology Integration - Islamic Religious Education (PAI) with PJBL

Project-based learning allows students to learn through solving real problems. Zuhdi (2020) noted that this model is effective in developing critical and collaborative skills, while instilling Islamic values. For example, a project on application-based zakat management can teach students about the importance of philanthropy in Islam.

Conclusion

The results of this study indicate that technology integration in Islamic education has great potential to improve the quality of learning. Educational institutions must realize the importance of integrating digital technology to strengthen teaching and learning methods. However, successful implementation requires various attention, namely improving technological infrastructure, where the Government and educational institutions must work together to provide internet access and hardware in remote areas. Teacher Training, that a comprehensive training program is needed to improve the competence of educators in using technology effectively. Islamic Content Development, where technology developers must create applications and platforms that are in accordance with Islamic values. Multisector Collaboration, where educational institutions, government, and the private sector need to work together to support the development of Islamic educational technology. This study is expected to be a guide for educators, policy makers, and technology developers to create an innovative and relevant Islamic education ecosystem in the digital era.

Bibliography

Ahmad, K. (2021). *Designing Mobile Apps for Islamic Education: Challenges and Prospects*. Journal of Educational App Development, 9(4), 112-129.

- Akrim, A., Setiawan, H. R., Selamat, S., & Ginting, N. (2022). Transformation of Islamic Education Curriculum Development Policy in the National Education System. *Cypriot Journal of Educational Sciences*, 17(7), 2538-2552.
- Alavi, S. (2019). *Islamic Education in the Digital Age*. Journal of Islamic Pedagogy, 7(2), 45-60.
- Anderson, T., & Dron, J. (2017). *Integrating Technology in Education: Principles and Practices*. Educational Technology Review, 15(4), 65-78.
- Ais Isti'ana. (2024). Integrasi Teknologi dalam Pembelajaran Pendidikan Islam. Indonesian Research Journal on Education. Vol. 4, No. 1. Page : 302-310.
- Auliya, (2024). Integrasi Teknologi dalam Pendidikan Islam : Membuka Era Baru Pembelajaran Modern Yayasan Daul Ishlah Nusantara. <https://dinus.or.id/2024/11/12/integrasi-teknologi-dalam-pendidikan-islam-membuka-era-baru-pembelajaran-modern/>.
- Azra, A. (2020). *Transformasi Pendidikan Islam dalam Era Digital*. Jakarta : Prenada Media.
- Ayhan Bilmez, Eyup Şimşe. (2024). The Effectiveness of Gamification in Religious Education. Anemon Muş Alparslan Üniversitesi Sosyal Bilimler Dergisi : Journal of Social Sciences of Mus Alparslan University. anemon 2024 12(2) 739–754
- Bunt, G. R. (2018). *Islam and the Digital Age: E-Jihad, Online Fatwas, and Cyber Islamic Environments*. Chapel Hill: University of North Carolina Press.
- Creswell, J. W. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
- Dabbagh, N., & Kitsantas, A. (2020). *Personalized Learning and Technology Integration in Education*. Educational Technology Research and Development, 68(1), 113-132.
- Farid, M. (2019). *Digital Transformation in Islamic Education Institutions*. Journal of Islamic Educational Studies, 8(2), 51-70.
- Garrison, D. R., & Vaughan, N. D. (2018). *Blended Learning in Higher Education: Framework, Principles, and Guidelines*. San Francisco: Jossey-Bass.
- Hamid, S., & Ali, H. (2019). *Ethical Dimensions of Technology Use in Islamic Education*. Ethics in Education Review, 14(3), 201-219.
- Hashim, R. (2018). *Integration of Islamic Values in E-Learning*. International Journal of Islamic Education, 4(1), 23-39.
- Hairus Saleh. (2023). Landasan Filosofis Pendidikan Islam (Peran Tauhid dalam Konsep Pendidikan Islam Ismail Raji al-Faruqi). FAKTA : Jurnal Pendidikan Agama Islam. Vol. 3. No. 1, page : 29-42.
- Ismail, A. (2022). *Leveraging Artificial Intelligence in Islamic Studies*. AI and Education Quarterly, 5(2), 56-70.
- Khan, M. (2020). *Technological Innovations in Islamic Learning*. International Journal of Educational Technology, 12(3), 123-135.
- Mohamad, R., & Salleh, A. (2021). *The Role of Virtual Reality in Teaching Islamic History*. Journal of Islamic Studies and Technology, 13(2), 89-104.
- Muhammad Fatkhul Hajri. (2023). Pendidikan Islam di Era Digital : Tantangan dan Peluang pada Abad 21. Al-MIKRAJ Jurnal Studi Islam dan Humaniora. Vol. 4 Number 1. Page : 33-41.
- Mohammad Akib. (2024). Moralitas Refleksi atas Nilai-nilai Al-quran dalam Penggunaan Teknologi. Al-Ibrah Junral Pendidikan dan Keilmuan Islam. Vol 9. No.1 p : 66-83.
- Muthoin, Faliqul Isbah. (2024). Digital Islam : Challenges and Opportunity of Islamic Education in Digital Era. ICONIE Proceeding International Conference on Islam and

- Education. “ Charting the Future of Islamic Education for Global Harmony. Vol. 3 No. 1.
- Nasrullah, H., & Rahim, A. (2021). *Blended Learning for Islamic Studies*. Islamic Studies Quarterly, 10(1), 78-90.
- Nurzannah Nurzannah, Nurman Ginting. 2022. Improving The Ability To Read The Quran Through The Tahsin Program Based On The Talaqqi Method. Journal of Character Education Society. Volume 5 Issue 2 Pages 305-317.
- Okta Farhan Syahendra. (2024). Tantangan dan Inovasi Pendidikan Islam di Era Digital : Membangun Generasi Berkarakter di Era Modern. *Bhinneka : Jurnal Bintang Pendidikan dan Bahasa* Volume. 2, No. 3 Juli 2024. P : 74-89.
- Ria Jayanthi, Anggini Dinaseviani. (2022). Kesenjangan Digital dan Solusi yang Diterapkan di Indonesia selama Pandemi COVID-19. *Jurnal IPTEK-KOM (Jurnal Ilmu Pengetahuan dan Teknologi Komunikasi)* Vol. 24 No. 2, Desember 2022: 187 – 200.
- Romi, Siswanto. (2022). Transformasi Digital Dalam Pemulihan Pasca Pandemi. <https://gurudikdas.kemdikbud.go.id/news/transformasi-digital-dalam-pemulihan-pendidikan-pasca-pandemi>
- Tamim, R., & Bernard, R. (2021). *Effects of Technology on Student Achievement: A Meta-Analysis*. *Review of Educational Research*, 91(3), 405-432.
- Yusuf, M. (2022). *The Role of Technology in Modern Islamic Education*. *Global Islamic Journal*, 14(3), 89-100.
- Zed, M. (2019). *Metode Penelitian Kepustakaan*. Jakarta : Yayasan Obor Indonesia.
- Zuhdi, M. (2020). *Innovation in Islamic Pedagogy through Technology Integration*. *Islamic Pedagogical Studies*, 11(1), 45-60.
- Zulkifli. (2018). *Regulasi Pendidikan Islam*. *Rausyan Fikr*. Vol. 14 No. 2 September 2018. ISSN. 1979-0074 e-ISSN. 9 772580 594187. P. 63-74.