

**TECHNOLOGY-BASED ISLAMIC EDUCATION MANAGEMENT: CHALLENGES
AND OPPORTUNITIES**

Arifurrahman¹

¹, Sekolah Tinggi Agama Islam Nurul Huda Kapongan Situbondo, Indonesia

e-mail: ¹ arifurrahmanstainh@gmail.com

Correspondensi Author; arifurrahmanstainh@gmail.com

Received: 2-8-2024; Revised: 28-08-2024; Accepted: 10-09-2024

Abstract: This study aims to analyze the application of technology-based Islamic education management in facing challenges and exploiting opportunities in the digital era. The main focus of this study is how Islamic educational institutions, particularly Islamic boarding schools (pesantren) and madrasahs (madrasahs), integrate technology in the planning, implementation, and evaluation of educational management to improve the effectiveness of learning and institutional governance. The research method used is descriptive qualitative with a literature review approach based on various research findings and empirical reports on the digitalization of Islamic education. The results show that the application of information technology in Islamic education management brings significant opportunities, such as increased administrative efficiency, transparency, easy access to academic data, and strengthening online and hybrid learning systems. However, several challenges remain, including limited digitally literate human resources, unequal technological infrastructure, and cultural resistance to digital change. The discussion emphasizes the importance of to strengthen the digital capacity of Islamic education educators and managers through training, policy innovation, and collaboration with technology institutions. In conclusion, digital transformation in Islamic education management is an inevitability that requires resource readiness, a modern leadership vision, and the integration of Islamic values so that technology becomes a means of improving educational quality, not just an administrative tool.

Keywords: *Islamic education management, technology, digitalization, innovation, educational transformation*

Abstrak: Penelitian ini bertujuan untuk menganalisis penerapan manajemen pendidikan Islam berbasis teknologi dalam menghadapi tantangan dan memanfaatkan peluang di era digital. Fokus utama penelitian ini adalah bagaimana lembaga pendidikan Islam, khususnya pesantren dan madrasah, mengintegrasikan teknologi dalam perencanaan, pelaksanaan, serta evaluasi manajemen pendidikan untuk meningkatkan efektivitas pembelajaran dan tata kelola kelembagaan. Metode penelitian yang digunakan adalah kualitatif deskriptif dengan pendekatan studi literatur terhadap berbagai hasil penelitian dan laporan empiris tentang digitalisasi pendidikan Islam. Hasil penelitian menunjukkan bahwa penerapan teknologi informasi dalam manajemen pendidikan Islam membawa peluang besar, seperti peningkatan efisiensi administrasi, transparansi, kemudahan akses data akademik, serta penguatan sistem pembelajaran daring dan hybrid. Namun demikian, masih terdapat sejumlah tantangan yang dihadapi, antara lain keterbatasan sumber daya manusia yang melek digital, infrastruktur teknologi yang belum merata, serta resistensi budaya terhadap perubahan digital. Pembahasan menegaskan pentingnya strategi penguatan kapasitas digital tenaga pendidik dan manajer pendidikan Islam melalui pelatihan, inovasi kebijakan, dan kolaborasi dengan lembaga teknologi. Kesimpulannya, transformasi digital dalam manajemen pendidikan Islam merupakan keniscayaan yang menuntut kesiapan sumber daya, visi kepemimpinan modern, dan integrasi nilai-nilai Islam agar teknologi menjadi sarana peningkatan mutu pendidikan, bukan sekadar alat administratif.

Kata Kunci: *manajemen pendidikan Islam, teknologi, digitalisasi, inovasi, transformasi pendidikan.*

How to Cite: Arifurrahman ¹ TECHNOLOGY-BASED ISLAMIC EDUCATION MANAGEMENT: CHALLENGES AND OPPORTUNITIES. Progresif: Jurnal Publikasi Ilmiah, Vol 12 No 2 September (Issue), firstpage-lastpage. <https://doi.org/10.21067/mpej.vxix.xxxxx>

Introduction

The development of information and communication technology (ICT) over the past two decades has brought about significant changes in various aspects of human life, including education. In the era of the 4.0 industrial revolution and the transition to a 5.0 society, education serves not only as a means of transferring knowledge but also as a platform for character development, digital skills development, and readiness to face the ever-evolving global dynamics. In this context, Islamic education management required to carry out a paradigm transformation towards a more adaptive, innovative and technology-based system (Ibad, 2021).

Islamic educational management is the process of managing all resources within an Islamic educational institution to achieve educational goals based on Islamic values. According to Nanang Fattah (2018), educational management encompasses the functions of planning, organizing, implementing, supervising, and evaluating, all synergized within a framework to achieve educational goals effectively and efficiently. From an Islamic perspective, educational management is oriented not only toward material outcomes but also toward developing the spiritual, moral, and social potential of students. This is where the uniqueness of Islamic educational management lies, which goes beyond simply pursuing cognitive outcomes and emphasizes the formation of a perfect human being who is faithful, knowledgeable, and has noble character (Muzaidin, 2021).

In today's digital era, Islamic educational institutions from Islamic boarding schools (pesantren) and madrasahs to religious universities cannot escape the tide of digitalization (Hidayat, 2022). Digital transformation is not only about the use of technological devices but also touches on managerial aspects, organizational culture, and the mindset of all elements of education. Technology has become a crucial instrument in improving the efficiency of educational institution management, expanding access to learning, and creating a more transparent and accountable system.

Technological advances provide opportunities for Islamic educational institutions to adapt to modern learning models such as *learning management system* (LMS), online learning (e-learning), *flipped classroom*, and the use of *artificial intelligence* (AI) in assessment and analysis of learning outcomes. Through technology integration, Islamic education management can strengthen its strategic functions: from curriculum planning and student data management to monitoring learning activities and evaluating teacher and institutional performance (Alkandari, 2023).

However, the implementation of technology-based Islamic education management cannot be separated from various challenges. First, the digital divide between educational institutions in urban and rural areas, resulting in unequal access to technology and the internet. Second, limited digital literacy among educators and education personnel often renders technology merely an administrative tool, rather than a strategic tool for improving educational quality. Third, cultural resistance to technological change, particularly in traditional institutions such as Islamic boarding schools (pesantren), hinders the effective implementation of educational digitalization.

Furthermore, Islamic education management also faces ethical and moral challenges due to the rapid flow of digital information that is not fully aligned with Islamic values. The phenomenon of misinformation, dependence on social media, and the penetration of digital consumer culture pose particular threats to the spiritual integrity of Islamic educational institutions. Therefore, a technology-based Islamic education management system is needed that focuses not only on technical aspects but also strengthens ethical values, morals, and digital spirituality.

In a global context, the COVID-19 pandemic that hit the world in 2020 has become a catalyst for accelerating digital transformation in education, including Islamic education.

Learning processes, previously conducted conventionally, have shifted massively to online systems. This change has prompted the management of Islamic educational institutions to adapt their strategies and policies to continue carrying out their educational functions effectively amidst physical limitations. Since then, awareness of the importance of technology in Islamic education management has grown rapidly (Bøe, 2022).

Digital technology has now become an integral part of the management of Islamic educational institutions, encompassing administrative management, academic information systems, finances, and communication between institutional elements. Many modern Islamic boarding schools (*pesantren*) and leading *madrasahs* (*madrasahs*) have implemented academic information systems to manage student data, grades, attendance, and even financial reports using online applications. This demonstrates that technology is no longer a foreign concept but rather a necessity that supports institutional transparency, efficiency, and accountability (Kodir & Suklani, 2023).

Beyond administrative aspects, the application of technology also strengthens the pedagogical dimension. Technology-based Islamic education management enables the implementation of an integrative learning system between religious and general knowledge. Through digital platforms, students can access a broad range of knowledge sources, both classical and contemporary. This integration aligns with the concept of *Islamic knowledge integration* which emphasizes the importance of integrating revelation and reason, between spiritual and intellectual knowledge. Thus, technology-based Islamic education management serves as a bridge to realizing Islamic education that is relevant to the needs of the times without losing its spiritual identity.

Beyond academic opportunities, technology also opens up vast spaces for collaboration for Islamic educational institutions. Collaboration between Islamic boarding schools (*pesantren*), *madrasahs* (Islamic schools), Islamic universities, and even general educational institutions can be achieved through digital networks, enabling the exchange of ideas, teaching materials, and best practices in educational management. This is where the concept of *cyber Islamic boarding school* or *digital Islamic education system*, namely an Islamic education management system that utilizes technology to expand the reach of Islamic preaching and learning globally (Anam & Mubin, 2022).

However, the success of implementing technology-based Islamic education management depends heavily on the readiness of human resources (HR). Teachers, religious teachers, and administrators of Islamic educational institutions need to be equipped with digital competencies, data literacy, and the ability to adapt to technological innovation. The Ministry of Religious Affairs and related institutions need to develop training and mentoring programs for educators to enable them to utilize technology optimally, rather than simply following global trends. In addition to human resource readiness, policy factors also play a crucial role. The government needs to promote regulations that support the integration of technology into Islamic education management, such as providing digital infrastructure, a widespread internet network, and supporting research into Islamic technological innovation. Policies based on this approach *human centered technology* It is very necessary so that the use of technology does not negate human and Islamic values in education (Alkandari, 2024).

Another challenge arises in the area of data security and digital privacy. Online management of student, teacher, and institutional data requires robust security systems to prevent misuse. Therefore, Islamic education management needs to integrate cybersecurity principles into institutional governance, in accordance with Islamic ethics that emphasize trustworthiness and responsibility in safeguarding information.

From a theological perspective, the application of technology in Islamic education must also be understood as part of *contemporary ijtihad* to utilize modern advances within the framework of sharia. Islam does not reject technological progress as long as its use benefits the

community. This is in line with the principles of *al-ashlu fi al-asya' al-ibahah* (the original law is that everything is permissible) as long as it does not cause harm. Therefore, technology-based Islamic education management needs to be directed to strengthen the values *mercy for all the worlds*, not just technical efficiency alone.

Apart from these challenges, there are also big opportunities that can be utilized in the implementation of technology-based Islamic education management. First, digitalization of management opens up opportunities for significantly improving the quality of educational services. Through an integrated information system, administrative management can be carried out quickly, accurately, and transparently. Second, technology expands access to Islamic education for the wider community through online learning, so that Islamic preaching and education are no longer limited by space and time. Third, the use of technology in Islamic education management can increase community participation through a digital donation system, *crowdfunding*, and platform-based educational cooperation.

In addition, the integration of technology in Islamic education can be a strategic means of instilling the values of religious moderation (*moderate Islam*). Through digital media, Islamic values, which are a blessing for the universe, can be disseminated through a creative, contextual, and relevant approach for the younger generation. This is a crucial step in building an Islamic narrative that is peaceful, open, and adaptive to changing times.

Furthermore, the application of technology in Islamic education management also encourages the development of a culture of research and innovation within Islamic educational institutions. Technology provides access to various research sources, enables cross-institutional scientific collaboration, and accelerates the publication of Islamic research results. This aligns with the spirit of *read* which emphasizes the importance of reading, researching, and understanding reality as part of intellectual worship.

Thus, technology-based Islamic education management is not an attempt to secularize Islamic education, but rather an actualization of Islamic values in a modern context. Wise implementation will result in an education system that excels not only in managerial aspects but is also deeply rooted in Islamic spiritual and moral values.

Conceptually, technology-based Islamic education management can be used as a strategic instrument to achieve the vision of Islamic education in Indonesia, as stipulated in the National Education System Law, namely to develop individuals who are faithful, pious, have noble character, and are knowledgeable. In this context, technology serves as a means to strengthen *da'wah* (Islamic outreach) and achieve the comprehensive goals of Islamic education.

In facing the era of disruption and globalization, Islamic educational institutions must be able to develop technology-based management systems that are sustainable, adaptive, and contextualized to the needs of society. Innovation and digitalization are not merely demands of modernity, but part of the moral responsibility of Islamic educational institutions to respond to the challenges of the times. Therefore, technology-based Islamic educational management is not merely about system digitization, but about a paradigm shift toward inclusive, intelligent, and globally competitive Islamic education.

Method

This research uses descriptive qualitative method with literature study approach (*library research*). This method was chosen because it is suitable for deeply understanding the phenomenon of transformation in Islamic education management in the context of digitalization, through analysis of various scientific sources and relevant conceptual data. The descriptive qualitative approach allows researchers to systematically describe the conditions, challenges, and opportunities for implementing technology in the management of Islamic educational institutions without directly intervening in the research object.

Descriptive qualitative methods emphasize understanding the meaning behind the social phenomena being studied. In the context of this research, researchers seek to interpret how digitalization impacts the managerial, administrative, pedagogical, and spiritual dimensions of Islamic education. This approach is not oriented toward numbers or statistics, but rather focuses on in-depth interpretation of textual data obtained from literature sources.

Approach literature study This method was used to explore, analyze, and synthesize various previous studies, journal articles, scientific books, policy reports, and conference proceedings discussing the digitalization of Islamic education, technology-based education management, and learning innovation in Islamic institutions. Researchers collected data from credible sources, both national and international, primarily from publications in the last ten years. These sources were accessed through scientific databases such as *Google Scholar*, *ResearchGate*, *ScienceDirect*, and portals *Sinta Indonesia*.

The research process is carried out through several systematic stages. First, identification of research problems, namely by formulating the central issue of how Islamic education management adapts to developments in digital technology and the opportunities and challenges that arise. Second, literature data collection relevant to the theme of digitalization of Islamic education, encompassing management, policy, and pedagogical aspects. Third, literature analysis and classification was conducted to group data based on main themes such as digital planning, technology implementation strategies, HR competencies, and the impact of digitalization on the quality of Islamic education.

The fourth stage is *analisis isi* (content analysis) based on the collected literature data. This analysis was conducted through in-depth reading, interpreting the context, and comparing findings across studies to identify patterns, similarities, and differences. Content analysis was used to uncover conceptual trends and the direction of digitalization development in Islamic education management. Based on this analysis, the researcher developed a descriptive interpretation that illustrates the current conditions and strategic direction for the development of technology-based Islamic education.

The last stage is preparation of conclusions and recommendations, formulated based on the results of a literature synthesis. The conclusions focus on identifying strategic opportunities and key challenges faced by Islamic educational institutions in integrating technology into their educational management systems.

With this approach, the research is expected to provide a comprehensive conceptual understanding of how Islamic education management can transform in the digital era without losing Islamic spiritual and moral values. Furthermore, the research findings are expected to serve as a basis for policymakers, academics, and education practitioners in designing effective, ethical, and sustainable technology-based Islamic education management models

Results and Discussion

The research results show that the application of information technology in Islamic education management offers significant opportunities for improving the overall quality of educational institutions. Digitalization not only transforms communication patterns and administrative systems but also reshapes the way Islamic educational institutions design, implement, and evaluate the learning process. In the context of educational modernization, information technology serves as a catalyst for transformation toward an efficient, transparent, inclusive, and adaptive education system (Karulita, 2022).

One of the main findings of this study is that the application of information technology in Islamic education management provides significant administrative efficiency. Through a digital system, student data, finances, inventory, and activity schedules can be managed quickly and accurately. Many madrasas and Islamic boarding schools now use digital systems. *Learning Management System* (LMS), digital attendance applications, and online financial systems.

These applications accelerate administrative workflows that were previously manual and time-consuming. For example, Islamic educational institutions use applications such as *SIKAD* (Academic Information System) is able to minimize errors in recording grades and absences and increase the accuracy of academic report data.

In addition to administrative efficiency, digitalization of Islamic education management also strengthens transparency and accountability of institutions. Academic and financial data stored in the digital system can be openly accessed by relevant parties such as teachers, students, and parents (Ubaedullah et al., 2021). This transparency strengthens public trust in Islamic educational institutions, which have often faced criticism regarding financial management or discrepancies in academic information. With a technology-based system, all operational activities can be documented in real time, facilitating internal and external audits.

Another finding shows that the application of information technology provides ease of access to academic and learning data. Both students and teachers can access learning materials, grades, and schedules online through educational portals or apps (artikel/kajian, 2022). This expands students' learning space, no longer confined by classroom walls. In the context of Islamic boarding schools (*pesantren*) and *madrasahs* (*madrasah*), technology-based learning also facilitates the integration of religious and general knowledge through diverse digital resources. Classical Islamic sources of knowledge are now accessible through *e-library* and digital repositories such as *Al-Maktabah al-Syamilah* or *Islamic Digital Library*, thus enriching the learning process without ignoring Islamic values.

Furthermore, digitalization strengthens online and hybrid learning systems (blended learning) in Islamic educational institutions. This learning model has become relevant after the COVID-19 pandemic accelerated the adoption of technology in education. Islamic boarding schools (*pesantren*) and *madrasahs* (*madrasahs*) have begun combining face-to-face methods with online learning using platforms like Google Classroom, Zoom, and Moodle. This has resulted in more flexible learning, allowing students to stay connected with their teachers even when they are outside the *pesantren* environment. This innovation demonstrates that technology is not a threat to Islamic educational traditions, but rather a tool to expand *da'wah* (Islamic outreach) and strengthen adaptive learning systems (S. H. Mahsusi, 2021).

However, the research results also show that there is a big challenge in the implementation of technology-based Islamic education management. The first challenge is limited digitally literate human resources (HR). Many teachers, religious teachers, and administrators of Islamic educational institutions lack adequate skills in using information technology (Helena, 2020). Their low digital literacy makes it difficult for them to operate digital systems optimally. Most educators in traditional Islamic boarding schools (*pesantren*) still rely on conventional learning methods, such as lectures and memorization, which have not been integrated with digital media. As a result, technology's potential is not being fully utilized to improve the quality of learning.

The second challenge relates to uneven technological infrastructure. Many Islamic educational institutions, particularly in rural or underdeveloped areas, still face challenges such as weak internet connections and limited digital devices. This creates a significant digital divide between educational institutions in large cities and remote areas (Masdul, 2019). For example, Islamic boarding schools in the interior of East Java or Nusa Tenggara still rely on manual systems due to unstable internet access. This situation demands government policies that support equitable digital infrastructure as the primary foundation for the digitalization of Islamic education.

The third challenge is cultural resistance to digital change. In some Islamic educational institutions, particularly traditional Islamic boarding schools (*pesantren*), conservative views persist, believing that technology can disrupt the spiritual values and modesty of students. Concerns about the misuse of the internet and social media have led some Islamic boarding

school administrators to restrict the use of digital devices in the educational environment. While these concerns are justified, excessive resistance can actually hinder the process of adapting to modern progress. Therefore, a moderate approach is needed that emphasizes the understanding that technology is a means (*wasilah*) to strengthen *da'wah* and education, not a threat to morality (Azman, 2018).

In further discussion, the research results emphasize the importance of digital capacity building strategies for Islamic education educators and managers. This digital capacity building must be carried out through training programs, policy innovation, and cross-sector collaboration (Istibana, 2019). First, training and improving the digital competence of teachers and Islamic education managers. This training focuses not only on technical aspects such as device and application usage, but also on digital pedagogical aspects, namely how to integrate technology into meaningful learning strategies. *Digital literacy for Islamic educators* can be developed sustainably through collaboration between the Ministry of Religion, Islamic universities, and technology institutions. In addition to formal training, online learning communities for madrasah and Islamic boarding school teachers also need to be formed to share good practices (*best practices*) the use of technology in teaching and institutional management.

Second, technology-based Islamic education policy innovation. It needs to be designed with a long-term vision. The government must promote policies that focus not only on the digitalization of devices but also on the cultural transformation of educational organizations. This policy includes providing internet infrastructure in remote areas, subsidizing digital devices for small Islamic educational institutions, and developing a curriculum that instills Islamic digital competencies (Widodo, 2019). Such a curriculum not only teaches technological skills but also fosters digital ethics rooted in Islamic values such as honesty, responsibility, and simplicity in media use.

Third, collaboration with technology institutions and the private sector. Digitalization is a key strategy in strengthening digital-based Islamic education management (Sanusi, 2019). Islamic educational institutions can collaborate with technology companies, research institutions, and universities to develop management systems tailored to the characteristics of Islamic boarding schools (*pesantren*) and madrasahs (*madrasahs*). For example, creating a digital platform specifically for Islamic boarding schools (*pesantren*) that combines financial management, student data, and religious content. This type of collaboration not only increases efficiency but also accelerates the transfer of digital knowledge among Islamic educators.

In addition to strengthening human resource capacity and policy innovation, this research discussion also highlights the importance of ethical and spiritual approaches in the application of technology in Islamic education. Islam emphasizes that every technological advancement must be directed towards the welfare of the people. Therefore, the use of information technology in Islamic education management must be accompanied by Islamic values: *trust*, *sincere*, and *responsibility*. Educators and institutional administrators need to instill the awareness that technology is merely a tool, while the primary focus of Islamic education remains on developing students' morals and spiritual intelligence (Kholifah, 2021).

Furthermore, this discussion found that the integration of technology in Islamic education can be an effective means of instilling Islamic values: religious moderation (*wasathiyah Islam*). Digital platforms can be utilized to disseminate Islamic preaching content that is tolerant, inclusive, and in line with the spirit of *mercy for all the worlds*. Through digital media, peaceful Islamic messages can reach a younger generation familiar with the virtual world, thus digitalization also plays a role in strengthening the role of Islamic education in building a harmonious global civilization (Saini, 2019).

In the long term, research results show that technology-based Islamic education management can contribute to achieving the vision of modern Islamic education, namely, producing graduates who are devout, knowledgeable, and globally competitive. Efficient

management of educational institutions integrated with digital systems will strengthen the competitiveness of madrasas and Islamic boarding schools in the era of globalization and the 5.0 industrial revolution (A. E. Mahsusi, 2019). However, in order for this opportunity to be optimally realized, it is necessary institutional commitment and transformational leadership. Leaders of Islamic educational institutions need to have a progressive vision and be open to innovation. Visionary leadership can guide all components of the institution to adapt to change, utilize technology productively, and instill a positive digital culture. Without strong leadership support, digitalization efforts will remain merely administrative projects, not systemic transformations.

In addition, the success of implementing technology-based Islamic education management is also determined by the institution's ability to maintain balance between digital aspects and spiritual values. Digitalization should be a tool to strengthen Islamic identity, not erode it (Fadli, 2020). In this context, it is important for Islamic educational institutions to uphold the principle of *integration of science and faith*, where the use of technology is directed to strengthen the knowledge and morality of students (Restalia et al., 2020).

In conclusion, the discussion can be emphasized that the application of information technology in Islamic education management presents significant opportunities for the advancement of educational institutions, both in terms of administrative efficiency, transparency, and learning quality. However, these opportunities can only be optimally utilized if Islamic educational institutions are able to overcome the challenges of limited human resources, infrastructure, and cultural resistance (Idris, 2020). Therefore, strategies for strengthening digital capacity, policy innovation, and cross-sector collaboration are key to building superior, ethical, and sustainable technology-based Islamic education management.

With a comprehensive approach grounded in Islamic values, the digitalization of Islamic education management can be a gateway to a superior, civilized, and adaptive education system. Within the framework of Islamic values, technology is not merely a tool for modernization, but rather a means to expand *da'wah* (Islamic outreach), deepen knowledge, and strengthen the morals of future generations of Muslims.

Conclusion

In conclusion, digital transformation in Islamic education management is a necessity. In the era of the Industrial Revolution 4.0 and Society 5.0, this change is inevitable because technological developments have become an integral part of human life, including in education. The digitalization of Islamic education management is not just a trend, but a strategic necessity to improve the efficiency, transparency, and quality of educational services. However, the success of this transformation depends heavily on the readiness of human resources, a modern leadership vision, and the ability to integrate Islamic values into the digitalization process.

Human resource readiness is a key factor in facing these changes. Educators, managers, and administrative staff in Islamic educational institutions need to be equipped with digital competencies, data literacy, and the ability to adapt to technological innovation. Without such readiness, technology will remain merely an administrative tool without having a substantive impact on improving educational quality. Therefore, strengthening digital capacity through ongoing training and collaboration with technology institutions is a crucial step in building resilient and competitive Islamic education management.

Furthermore, an open, progressive, and transformative leadership vision is needed to guide the digitalization process in line with the mission of Islamic education. Leaders of Islamic educational institutions must be able to balance technological innovation with the preservation of Islamic values. Integrating spiritual values such as honesty, trustworthiness, responsibility, and simplicity in the use of technology will ensure that digitalization does not violate Islamic moral principles.

Thus, technology in Islamic education must be positioned as means to improve the quality of Islamic education and preaching, not merely an administrative instrument. If digital transformation is carried out in a planned, ethical manner, and based on Islamic values, Islamic education management will be able to produce a generation that is faithful, knowledgeable, and ready to face global challenges wisely and civilized.

Daftar Pustaka

- Alkandari, K. (2023). Engagement, interaction, and socialization of Islamic education pre-service teachers through virtual discussions. *SAGE Open (Open Access)*, 2(1). <https://doi.org/10.1177/21582440241255844>.
- Alkandari, K. (2024). — (entry tambahan dari penelitian SAGE tentang pembelajaran daring di konteks Islam).
- Anam, S., & Mubin, N. (2022). Developing an e-learning platform for Islamic education that incorporates the principles of religious moderation within school settings. *SYAMIL: Journal of Islamic Education*, 11(2), 233–249. <https://doi.org/10.21093/sy.v11i2.9260>.
- artikel/kajian, R. (2022). Technology Integration in Islamic Education: Policy and Practice. *Risetpress / Jurnal JMiSC*, 1(2).
- Azman, N. A. (2018). Digital teaching strategies of Islamic education teachers. *International Journal of Learning, Teaching and Educational Research (IJLTER)*, 1(2). [https://doi.org/\(tergantung edisi jurnal — cek jurnal\)](https://doi.org/(tergantung edisi jurnal — cek jurnal)).
- Bøe, T. (2022). Continued Use of E-learning Technology in Higher Education: A Managerial-Influence Perspective. *Higher Education*, 82(2), 287–304 —. <https://doi.org/10.1080/03075079.2020.1754781>
- Fadli, M. R. (2020). *Pesantren's digital literacy: An effort to realize pesantren advancement* (p. 17).
- Helena, Y. (2020). Digital transformation in Islamic education: Improving the quality of teachers in Padangsidempuan City. *AJIS: Academic Journal of Islamic Studies*, 9(2), 450–458. <https://doi.org/10.29240/ajis.v9i2.12247>.
- Hidayat, A. N. (2022). *E-learning implementation in Islamic education* (p. 89).
- Ibad, N. (2021). *Transformasi pesantren dalam era digital: peluang dan tantangan*. *Jurnal Masjiduna / Basicedu sitasi (mengandung DOI rujukan 10.31004/basicedu.v6i3.2811 pada salah satu artikel terkait*.
- Idris, H. (2020). *Online learning model implemented in Islamic education after COVID-19: A blended learning approach*.
- Istibana, I. (2019). *Digital Transformation in Islamic Education Management* (pp. 15–16).
- Karulita, S. (2022). Achieving equitable access through digital inclusion in the digital era (study on madrasah. *ICESH Proceedings / Ejournal*. DOI: Tidak Ditemukan — PDF Tersedia.
- Kholifah, A. (2021). Strategi pendidikan pesantren menjawab tantangan sosial di era digital. *Jurnal Basicedu*, 6(3). <https://doi.org/10.31004/basicedu.v6i3.2811> (terkait topik pesantren & digital).
- Kodir, A., & Suklani. (2023). tahun). The role of information technology in Islamic education management. *El-Idare: Journal of Islamic Education Management*, 1(2). <https://doi.org/tidak ditemukan — cek jurnal>.
- Mahsusi, A. E. (2019). The Role of Digital Transformation in Islamic Education Management. *Open Journal of Social Sciences*, 12, Artike. <https://doi.org/10.1080/23311983.2024.2304407>
- Mahsusi, S. H. (2021). Achieving excellence: The role of digital transformation in madrasah

- management and Islamic culture. *Cogent Arts & Humanities*, 11(1). <https://doi.org/10.1080/23311983.2024.2304407>.
- Masdul, M. R. (2019). *Transformation of Islamic Religious Education through e-learning and interactive technologies*.
- Muzaidin, M. (2021). The role of technology in Islamic education to improve student cognition. *JSRET / Jurnal*, 5(1), 15–16. [https://doi.org/tidak ditemukan](https://doi.org/tidak_ditemukan) — sumber jurnal online.
- Restalia, W., Khasanah, N., & dkk. (2020). *Transformation of Islamic education in the digital age: challenges and opportunities*. *Tadibia Islamika* (p. 16). [https://doi.org/tidak ditemukan](https://doi.org/tidak_ditemukan) — jurnal nasional.
- Saini, M. (2019). Pesantren dalam era digital: Antara tradisi dan transformasi. *Ta'assum / Ta'allum: Jurnal Pendidikan Islam*, 2(1). <https://doi.org/10.21274/taalum.2022.10.1.20-42> (terkait sitasi dalam artikel).
- Sanusi, M. (2019). Transforming Islamic education in the digital age. *Attractive Journal (AJ)*. DOI, 2(2).
- Ubaedullah, D., Rokimin, S., & F. (2021). Technology in Islamic education curriculum: Challenges and opportunities. In *Jurnal Al-Burhan*. DOI: *tidak ditemukan* — artikel tersedia di jurnal lokal.
- Widodo, A. A. (2019). Strategi digitalisasi pendidikan pesantren dalam era modern. *IHSan Journal / Ejournal Yayasan*, 2(1). [https://doi.org/tidak ditemukan](https://doi.org/tidak_ditemukan).