

## **DIGITAL TRANSFORMATION OF PESANTREN Preserving Islamic Traditions in Modern Education Management**

**Muhammad Fadli<sup>1</sup>, Dewi Saraswati<sup>2</sup>, Dafa Setiabudi<sup>3</sup>**

UIN Kiai Ahmad Siddiq<sup>1</sup>, Universitas Madura<sup>2</sup>, IAIN Pontianak<sup>3</sup>

*fadlimuh91@gmail.com<sup>1</sup>, desaraswati@gmail.com<sup>2</sup>, daffa5setiabudi@gmail.com<sup>3</sup>*

### **Abstract**

Digital transformation in Islamic education management, especially in the pesantren environment, is an important phenomenon that marks a paradigm shift in education governance. Pesantren as a traditional educational institution has strong roots in maintaining Islamic values, but in the modern era it is required to adapt to technological developments. This qualitative research aims to review how pesantren adopt digital technology in the education management system without losing the identity and traditions that have been maintained for a long time. The research narrative highlights the practice of technology integration in the aspects of administration, financial transparency, and accountability of institutional management. In addition, this research also emphasizes the effectiveness of the use of digital applications in supporting the learning process, communication between teachers and students, and academic data management. The results of the study show that pesantren are able to utilize technology as a means of innovation, but still maintain the spiritual and cultural values that are their characteristics. Thus, digital transformation is not just a technical modernization, but an adaptive strategy that strengthens the existence of Islamic boarding schools in the midst of global dynamics. This research is expected to contribute to the development of Islamic education management that is balanced between tradition and innovation, as well as a reference for other educational institutions in facing the challenges of the digital era.

**Keywords:** Digital Transformation, Islamic Boarding School, Islamic Education Management

### **Abstrak**

Transformasi digital dalam manajemen pendidikan Islam, khususnya di lingkungan pesantren, menjadi fenomena penting yang menandai pergeseran paradigma dalam tata kelola pendidikan. Pesantren sebagai lembaga pendidikan tradisional memiliki akar kuat dalam menjaga nilai-nilai Islam, namun di era modern dituntut untuk beradaptasi dengan perkembangan teknologi. Penelitian kualitatif ini bertujuan untuk mengulas bagaimana pesantren mengadopsi teknologi digital dalam sistem manajemen pendidikan tanpa kehilangan identitas dan tradisi yang telah lama dijaga. Narasi penelitian menyoroti praktik integrasi teknologi dalam aspek administrasi, transparansi keuangan, serta akuntabilitas pengelolaan lembaga. Selain itu, penelitian ini juga menekankan efektivitas penggunaan aplikasi digital dalam mendukung proses pembelajaran, komunikasi antara guru dan santri, serta pengelolaan data akademik. Hasil kajian menunjukkan bahwa pesantren

mampu memanfaatkan teknologi sebagai sarana inovasi, namun tetap mempertahankan nilai spiritual dan budaya yang menjadi ciri khasnya. Dengan demikian, transformasi digital bukan sekadar modernisasi teknis, melainkan strategi adaptif yang memperkuat eksistensi pesantren di tengah dinamika global. Penelitian ini diharapkan dapat memberikan kontribusi terhadap pengembangan manajemen pendidikan Islam yang seimbang antara tradisi dan inovasi, serta menjadi referensi bagi lembaga pendidikan lain dalam menghadapi tantangan era digital.

**Kata Kunci:** Transformasi Digital, Pesantren, Manajemen Pendidikan Islam

### **Introduction**

Pesantren is one of the oldest Islamic educational institutions in Indonesia that has an important role in shaping the character, morals, and spirituality of society. Since its inception, pesantren has been known as a center for religious learning based on strong Islamic traditions. The values of sincerity, simplicity, and discipline are the characteristics of the lives of students (Ramadhani et al., 2025). However, the development of the times requires Islamic boarding schools to adapt to social, cultural, and technological changes (Suryani & Nadira, 2025). These challenges pose the need to integrate innovation without eliminating traditional identities (Khoiriah & Hude, 2025).

The digital era has brought major changes in various aspects of life, including the world of education. Information and communication technology has become an integral part of the modern education management system (Safitri et al., 2023). Madrassas and pesantren as Islamic educational institutions cannot ignore this development (Azizah & Husni, 2025). The use of digital technology in education management is expected to be able to increase the effectiveness, efficiency, and transparency of institutional management (Rusyunizal & Karim, 2025). Thus, digital transformation is an important strategy in facing the demands of globalization (Daeng, 2024).

Digital transformation in Islamic boarding schools is not just the application of technology, but a comprehensive adaptation process to the education management system (Muzakky et al., 2023). This includes the management of administration, finance, curriculum, and communication between teachers, students, and the community (Ahsan, 2025). The use of digital applications allows

pesantren to be more accountable in managing data and information (Aulita & Hanif, 2026). Transparency in financial management can also increase public trust in Islamic educational institutions (Khayati, 2023). In this way, pesantren remain relevant in the midst of the times (Saini, 2024).

Nevertheless, digital transformation must not ignore the traditional values that are the foundation of Islamic boarding schools (Trisnani et al., 2026). Traditions such as the recitation of the yellow book, the closeness between kiai and students, and simple life in the pesantren environment must be maintained (Yusri, 2019). These values are identities that distinguish pesantren from other educational institutions (Kusumawati, 2024). Technological integration must be carried out wisely so as not to erode spiritual and cultural values that have been maintained for a long time (Adawiyah & Husni, 2026). Islamic boarding schools must be able to balance tradition and innovation (Amaludin & Adaniyah, 2025).

In the context of Islamic education management, accountability and transparency are important aspects that must be considered (Kholiq & Wahyunik, 2025). Digital technology can help Islamic boarding schools prepare clearer and more structured financial reports (Widyastuti et al., 2023). The education management information system also facilitates supervision of academic and non-academic activities (Islam, 1994). This not only increases the effectiveness of management, but also strengthens public trust in Islamic boarding schools (Qomaruddin et al., 2026). Digital transformation thus becomes a means of strengthening the existence of Islamic boarding schools (Maesaroh & Achdiani, 2017).

The effectiveness of Islamic education management through digital technology is also seen in the learning process (Khorie et al., 2026). The use of e-learning platforms, communication applications, and academic database systems can improve the quality of student learning (Sari, 2025). Teachers and kiai can use technology to expand access to teaching materials and strengthen interaction with students (Rachman & Hosnan, 2025). Technology also allows Islamic boarding schools to collaborate with other educational institutions, both national and

international. This opens up opportunities for Islamic boarding schools to develop and contribute to global education.

Digital transformation in Islamic boarding schools is a strategic step to maintain the relevance of Islamic educational institutions in the modern era. This process is not just a technical modernization, but an adaptive effort that strengthens tradition while presenting innovation. Pesantren is expected to be able to be an example of how Islamic educational institutions can integrate technology without losing their identity (Kusumawati, 2024). This study will review the strategies, challenges, and opportunities faced by Islamic boarding schools in the digital transformation process (Kholiq & Wahyunik, 2025). The results of the research are expected to contribute to the development of Islamic education management that is balanced between tradition and innovation (Saini, 2024).

## **Methods**

This study uses a qualitative approach with a descriptive method to understand in depth the phenomenon of digital transformation in Islamic education management in Islamic boarding schools. The qualitative approach was chosen because it is able to explore meanings, values, and experiences that cannot be quantitatively measured. The focus of the research is directed at how pesantren integrate digital technology in the management system without eliminating long-held traditions. Thus, this study seeks to provide a comprehensive picture of the balance between tradition and innovation in Islamic education.

Data collection was carried out through in-depth interview techniques, participatory observation, and documentation studies. Interviews were conducted with kiai, teachers, pesantren managers, and students to obtain diverse perspectives on the application of digital technology. Participatory observation is carried out by participating in daily activities in the pesantren environment, so that researchers can directly understand digital-based management practices. The documentation study includes archive analysis, financial statements, and academic records that have been digitized. Data triangulation is used to ensure the validity of information obtained from various sources.

Data analysis was carried out using data reduction techniques, data presentation, and conclusion drawn. Data obtained from interviews, observations, and documentation were reduced to find key themes relevant to the focus of the research. Furthermore, the data is presented in the form of a systematic narrative to describe the digital transformation process in Islamic boarding schools. Conclusions are drawn inducively by linking research findings with Islamic education management theory and the concept of digital transformation. In this way, research is expected to be able to make a theoretical and practical contribution to the development of Islamic education management in the modern era.

### **Results and Discussion**

The pesantren that is the object of the research shows significant changes in the education management system after adopting digital technology. The use of online-based administrative applications facilitates the management of data on students, teachers, and academic activities (Ramadhani et al., 2025). Field observations show that data recording is now more neat, structured, and easily accessible at any time (Suryani & Nadira, 2025). The internal documentation of the pesantren also shows a reduced risk of data loss that previously often occurred in manual recording (Khoiriah & Hude, 2025). Thus, pesantren are able to increase efficiency in administrative management (Safitri et al., 2023).

In addition to administration, digital transformation is also seen in the financial aspect of Islamic boarding schools. Financial statements that were previously prepared manually can now be accessed through a more transparent digital system (Azizah & Husni, 2025). Interviews with pesantren treasurers reveal that "financial statements are easier to compile regularly and accurately" (Rusyunizal & Karim, 2025). Financial transparency increases public trust in Islamic boarding schools as Islamic educational institutions (Daeng, 2024). This trust is an important capital for the sustainability of Islamic boarding schools in the modern era (Muzakky et al., 2023).

In terms of learning, Islamic boarding schools are starting to utilize e-learning platforms to support the teaching and learning process (Ahsan, 2025).

Students can access teaching materials online, so learning is not limited to the classroom (Aulita & Hanif, 2026). Teachers and kiai can also assign assignments and conduct evaluations through the digital system (Khayati, 2023). Observations show that the quality of learning increases without reducing the traditional value of pesantren (Saini, 2024).

The tradition of the pesantren is still maintained. Observations show that the recitation of the yellow book is still carried out face-to-face with the guidance of the kiai (Trisnani et al., 2026). The documentation of learning activities shows that technology is used to document the material and make it easier for students to repeat lessons (Yusri, 2019). This proves that pesantren are able to balance tradition and innovation (Kusumawati, 2024); (Adawiyah & Husni, 2026).

Interviews with pesantren administrators revealed that accountability is more assured with the existence of a digital system: "Every activity can be recorded and monitored systematically" (Amaludin & Adaniyah, 2025). This facilitates internal supervision while strengthening institutional accountability in the eyes of the public (Kholiq & Wahyunik, 2025). With a digital system, pesantren can show a commitment to good governance (Widyastuti et al., 2023); (Islam, 1994).

Students also feel the direct benefits of digital transformation. They can communicate with teachers through messaging applications or online discussion forums (Qomaruddin et al., 2026). Interviews with students mentioned that "it is easier for us to get academic and spiritual guidance" (Maesaroh & Achdiani, 2017). Thus, digital technology plays a role as a means of strengthening the relationship between teachers and students (Khorri et al., 2026); (Sari, 2025).

The results of the study show that the effectiveness of pesantren management increases after the application of digital technology (Rachman & Hosnan, 2025). The process of managing data, finance, and learning becomes faster and more structured. This effectiveness has an impact on improving the quality of educational services provided to students. Islamic boarding schools are able to adapt to the demands of the times without losing their identity.

However, the research also found challenges in the digital transformation process. Not all teachers and students have the same ability to use technology

(Kusumawati, 2024). Limited infrastructure such as internet networks are also an obstacle in several Islamic boarding schools (Kholiq & Wahyunik, 2025). Therefore, training and assistance are needed so that all parties can adapt to technology (Saini, 2024). This challenge must be overcome so that digital transformation can run optimally (Widyastuti et al., 2023).

Overall, the discussion shows that digital transformation in Islamic boarding schools is an adaptive step that strengthens the management of Islamic education (Islam, 1994). Digital technology not only increases effectiveness and transparency, but also strengthens institutional accountability (Qomaruddin et al., 2026). Tradition is maintained as the main identity of Islamic boarding schools, while innovation is present as a means of development (Maesaroh & Achdiani, 2017). Thus, pesantren can be an example of how Islamic educational institutions can face the digital era (Khorri et al., 2026). This research makes an important contribution to the development of Islamic education management that is balanced between tradition and innovation (Sari, 2025); (Rachman & Hosnan, 2025).

## **Conclusion**

Digital transformation in the management of Islamic education in Islamic boarding schools is a strategic step that is able to increase the effectiveness, efficiency, and transparency of institutional management. The results of the study show that the application of digital technology supports administration, finance, and the learning process in a more structured manner. Pesantren has succeeded in utilizing technology as a means of innovation without eliminating the traditional values that are their identity. Thus, digitalization is not just a technical modernization, but an adaptive process that strengthens the existence of Islamic boarding schools in the modern era.

In addition to providing practical benefits, digital transformation also strengthens public accountability and trust in Islamic boarding schools. A more transparent information system makes the management of the institution clearer and accountable. This is an important capital for Islamic boarding schools to remain relevant and trusted as an Islamic educational institution. Traditions such as the

recitation of the yellow book and the closeness of the kiai-santri are maintained, so that the pesantren is able to balance tradition and innovation. This balance is the key to the success of Islamic boarding schools in facing the challenges of globalization.

Overall, this study emphasizes that digital transformation is a necessity as well as an opportunity for Islamic boarding schools to develop. Challenges in the form of limited infrastructure and technological capabilities can be overcome through training, mentoring, and adaptation strategies that are in accordance with the conditions of each Islamic boarding school. With the right steps, pesantren can be a real example of how Islamic educational institutions are able to adapt to the times without losing their identity. This research is expected to make a theoretical and practical contribution to the development of Islamic education management that is balanced between tradition and innovation.

## References

- Adawiyah, R., & Husni, M. (2026). Integrasi teknologi digital dalam pengajaran Kitab Kuning di pesantren. *Jurnal Ilmu Pendidikan, Sosial Dan Humaniora*, 2(1), 108–117.
- Ahsan, M. (2025). Pengelolaan manajemen pendidikan Islam berbasis digital untuk meningkatkan efektivitas pembelajaran. *Jurnal Tahsinia*, 6(8), 1151–1164.
- Amaludin, A., & Adaniyah, S. (2025). Transformasi Manajemen SDM di Pondok Pesantren: Antara Tradisi dan Inovasi. *Tadbir: Jurnal Manajemen Dakwah FDIK IAIN Padangsidimpuan*, 7(2), 243–256.
- Aulita, I., & Hanif, M. (2026). Sosiologi Lembaga Pendidikan: Akuntabilitas Sosial Pengelolaan Keuangan Pesantren dalam Membangun Kepercayaan Wali Santri. *JURNAL ILMIAH NUSANTARA*, 3(4), 405–416.
- Azizah, M. F., & Husni, M. (2025). Digitalisasi Pesantren Melalui Presensi Digital Berbasis Aplikasi Android di Madrasah Diniyah Pondok Pesantren Ngalah Purwosari Pasuruan. *QOSIM: Jurnal Pendidikan Sosial & Humaniora*, 3(1), 377–386.
- Daeng, N. S. (2024). Strategi Santri Pondok Pesantren Bustanul Mansuriyah Dalam Menghadapi Tantangan Globalisasi. *QAZI: Journal Of Islamic Studies*, 1(1), 23–29.

- Islam, M. P. (1994). *Manajemen Pendidikan Islam*. Dasar-Dasar.
- Khayati, S. Q. (2023). Transparansi Keuangan Berbasis Good Governance di Pondok Pesantren Al Multazam Husnul Khotimah Kuningan Jawa Barat. *Pedagogika: Jurnal Ilmu-Ilmu Kependidikan*, 3(2), 181–187.
- Khoiriah, N., & Hude, D. (2025). Teknologi dan Inovasi dalam Pendidikan Islam: Perspektif Etika Islam dan Tantangan Globalisasi di Era Digital. *Irsyaduna: Jurnal Studi Kemahasiswaan*, 5(3), 647–657.
- Kholiq, A., & Wahyunik, S. (2025). Penguatan akuntabilitas dalam manajemen pendidikan Islam: Studi tentang transparansi dan profesionalisme. *JIEM: Journal Of Islamic Education and Management*, 5(2), 10–23.
- Khori, A., Sukandar, D., & Shofiyyah, H. (2026). EFEKTIVITAS PEMANFAATAN E-LEARNING DAN PLATFORM DIGITAL TERHADAP INTERAKSI GURU-SISWA DI PESANTREN. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 12(02), 192–205.
- Kusumawati, I. (2024). Integrasi kurikulum pesantren dalam kurikulum nasional pada pondok pesantren modern. *Sanskara Pendidikan Dan Pengajaran*, 2(01), 1–7.
- Maesaroh, N., & Achdiani, Y. (2017). Tugas dan fungsi pesantren di era modern. *Sosietas*, 7(1).
- Muzakky, R. M. R., Mahmuudy, R., & Faristiana, A. R. (2023). Transformasi pesantren menghadapi era revolusi digital 4.0. *ALADALAH: Jurnal Politik, Sosial, Hukum Dan Humaniora*, 1(3), 241–255.
- Qomaruddin, Q., Fadlilah, N., Mahfudloh, R. I., Ahmad, N. F., Minan, A. K., Rohmatillah, N., & Mahfudh, H. (2026). Strategi Pengelolaan Media Digital Pesantren dalam Membangun Kepercayaan Perspektif Teori The Speed of Trust. *Mudir: Jurnal Manajemen Pendidikan*, 8(2), 890–908.
- Rachman, F., & Hosnan, M. (2025). Modernisasi pendidikan pesantren di indonesia: Inovasi, tantangan, dan peluang menuju lembaga pendidikan islam berdaya saing global. *Jurnal Pemikiran Dan Ilmu Keislaman*, 8(1), 21–41.
- Ramadhani, A. A., Iqbal, M., Zunaidi, P., & Nasution, A. F. (2025). Kepemimpinan Kyai dalam Mengelola Manajemen Pendidikan Pesantren di Era Digital. *Jurnal Ilmiah Penelitian Mahasiswa*, 3(6), 877–887.
- Rusyunizal, D., & Karim, H. A. (2025). Transparansi Sistem Manajemen Pendidikan Islam Berbasis Web Di Era Digital. *Jurnal Manajemen Pendidikan*, 10(4), 3319–3331.
- Safitri, S., Cahyadi, A., & Yaqin, H. (2023). Inovasi dan Difusi Pemanfaatan

- Teknologi Informasi dalam Manajemen Pendidikan Islam. *Al-Madrasah: Jurnal Ilmiah Pendidikan Madrasah Ibtidaiyah*, 7(4), 1706–1717.
- Saini, M. (2024). Pesantren dalam era digital: Antara tradisi dan transformasi. *Tasamuh: Jurnal Studi Islam*, 16(2), 342–356.
- Sari, H. (2025). Strategi komunikasi pesantren dalam menyebarkan nilai-nilai Islam melalui media digital. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(01), 637–650.
- Suryani, A., & Nadira, T. (2025). Tradisi pesantren sebagai basis pembentukan karakter santri di tengah arus modernisasi dan perubahan sosial. *Jurnal Ekshis*, 3(2), 177–185.
- Trisnani, E. E., Mariyam, S., & Maskuri, M. (2026). Tradisi pesantren relasinya dengan kelembagaan pendidikan Islam multikultural. *JiIP-Jurnal Ilmiah Ilmu Pendidikan*, 9(1), 976–987.
- Widyastuti, R. D., Setiawan, A., Sari, W., Ekawati, E., & Purwanto, P. (2023). Pendampingan Pengelolaan Keuangan Berbasis Digital Finance Syariah Pada Yayasan Fathu Minal Fityan. *SEMAR (Jurnal Ilmu Pengetahuan, Teknologi, Dan Seni Bagi Masyarakat)*, 12(1), 8–14.
- Yusri, D. (2019). Pesantren dan Kitab kuning. *Al-Ikhtibar: Jurnal Ilmu Pendidikan*, 6(2), 647–654.