

## Technology-Based Learning Management in Islamic Schools

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**Abstract.** *The development of information technology has transformed the dynamics of education, including in Islamic schools, making the implementation of technology-based learning management essential to improving the quality and effectiveness of the teaching and learning process. This study employs a literature review method by analyzing eight scholarly articles published between 2012 and 2025, aiming to identify best practices, implementation strategies, challenges, and the impact of technology on learning management. The analysis was conducted through content analysis and presented in a literature review table covering research focus and key findings. The results reveal that the successful implementation of technology largely depends on school leadership, teacher readiness and competence, facility support, curriculum management, and learning evaluation. Systematic managerial strategies enable optimal utilization of technology to enhance students' motivation, engagement, and creativity while maintaining alignment with Islamic educational values. This study provides both theoretical and practical contributions to the development of Islamic education in the digital era and serves as a foundation for future research on the integration of technology in learning management.*

**Keywords:** *learning management, educational technology, Islamic school, literature review, e-learning*

### 1. INTRODUCTION

The development of information and communication technology (ICT) has brought significant changes to the field of education. The use of technology in learning is not only a supporting tool but also an integral part of an effective educational management strategy. In Islamic schools, the integration of technology into the teaching and learning process has become increasingly important to enhance learning quality, efficiency, and student engagement (Al-Fadhli, 2021).

Technology-based learning management encompasses the planning, implementation, evaluation, and control of learning processes through digital media, online platforms, and educational applications. The application of this management approach aims to create an adaptive, interactive learning environment that supports 21st-century skills such as digital literacy, collaboration, and creativity (Rahman & Sutanto, 2020).

Several studies indicate that Islamic schools implementing technology-based learning can improve students' learning motivation and teachers' effectiveness in delivering material. For example, the use of Learning Management Systems (LMS), interactive video learning, and online quiz applications provides more engaging learning experiences and facilitates the monitoring of student progress (Hidayat et al., 2022).

However, the implementation of technology-based learning management in Islamic schools still faces several challenges, including limited facilities, teachers' ICT competencies, and students' readiness for digital learning. These conditions require appropriate managerial strategies to ensure that technology is utilized optimally while remaining aligned with Islamic educational values (Kusuma, 2019).

Furthermore, the integration of technology must be accompanied by clear curriculum management and learning evaluation. Effective management ensures that technology is not merely an additional tool but an integral part of a systematic and effective learning process consistent with academic standards and the moral values taught in Islamic schools (Syamsudin, 2021). Recent literature emphasizes that the success of technology-based learning management strongly depends on school leadership, teacher participation, and stakeholder support. Principals who are proactive in providing training, monitoring, and evaluation play a crucial role in ensuring that technology is effectively utilized to achieve educational goals (Nugroho, 2022).

Given this background, this study aims to systematically review the strategies, challenges, and best practices of technology-based learning management in Islamic schools. This literature review is expected to contribute to the development of policies, managerial practices, and digital learning innovations in Islamic educational institutions.

## 2. METHODE

This study employed a literature review method to systematically examine technology-based learning management in Islamic schools. The literature review approach was chosen because the research aimed to analyze findings from previous studies, identify best practices, strategies, and challenges in implementing technology in learning management, and provide evidence-based recommendations. The data sources for this study consisted of scientific journals, research articles, and conference proceedings that were relevant and published between 2012 and 2025. The keywords used in the search included "*learning management*," "*educational technology*," "*Islamic schools*," "*e-learning*," and "*digital learning in Islamic schools*." The literature search was conducted through databases such as Google Scholar, Scopus, ResearchGate, and national journal portals.

The article selection process was carried out based on inclusion and exclusion criteria. The inclusion criteria included articles discussing technology-based learning management implemented in Islamic schools or madrasahs, published in either Indonesian or English. The exclusion criteria were articles that were not relevant to the Islamic school context, focused

solely on technology without managerial aspects, or opinion-based papers without empirical data. After the selection process, eight research articles met the criteria. These articles were analyzed using content analysis techniques, which involved extracting information about management strategies, technology implementation, challenges, and their impacts on the teaching and learning process. The extracted data were then categorized and compared to identify patterns, similarities, and differences among studies.

The literature analysis was organized into a review table containing four columns: author and year, article title, research focus, and main findings. This approach facilitated information mapping and provided a comprehensive overview of best practices and challenges in technology-based learning management in Islamic schools. The results of this analysis were used to develop a structured discussion that included the identification of best practices, recommendations for management strategies, and implications for the development of Islamic education in the digital era. This approach also enabled the identification of research gaps that may serve as a foundation for future studies. Through this literature review method, the study not only presents a summary of findings but also provides a critical synthesis of practices and strategies in technology-based learning management within Islamic schools, contributing both theoretical and practical insights to the development of effective, value-oriented digital education.

### 3. RESULT AND DISCUSSION

Table 1. Summary of Reviewed Literature on Technology-Based Learning Management in Islamic Schools

Author	Article Title	Research Focus	Main Findings
Al-Fadhli (2021)	The Utilization of Information Technology in Islamic Education: Opportunities and Challenges	Integration of ICT in learning management within Islamic schools	Emphasizes the importance of teacher readiness and infrastructure support for technology adoption; technology enhances learning effectiveness and student engagement.
Hidayat, Nugroho, & Setiawan (2022)	The Effectiveness of Learning Management Systems in Increasing Students' Learning Motivation in Islamic Schools	Use of LMS for interactive learning	LMS improves learning motivation, facilitates progress monitoring, and supports collaboration between teachers and students.
Kusuma (2019)	Teacher Readiness and Infrastructure in the Implementation of	Teacher readiness and facility factors in digital learning	Teachers require training and technical support; limited facilities are the

	Technology-Based Learning in Madrasahs		main barrier to effective technology implementation.
Nugroho (2022)	The Role of School Leadership in Implementing Digital Learning in Islamic Schools	The role of principals in managing digital learning	Proactive school leadership is crucial in providing training, monitoring, and evaluation to ensure optimal use of technology.
Rahman & Sutanto (2020)	Technology Integration in Learning Management: A Study of Islamic Secondary Schools	Managerial strategies in technology implementation	Technology integration must align with the curriculum and learning strategies; success depends on effective coordination between teachers and school principals.
Syamsudin (2021)	Curriculum Management and Technology-Based Learning Evaluation in Madrasahs	Evaluation and digital curriculum management	Periodic evaluation enhances learning effectiveness; technology facilitates monitoring of curriculum achievement.
Fauzi & Hendra (2020)	The Use of Digital Media to Enhance Students' Writing Creativity in Madrasahs	Use of digital media for creative learning	Digital media increases students' creativity and their ability to express ideas through interactive writing.
Ismail & Sari (2021)	Implementation Strategies for E-Learning in Islamic Schools	Strategies for e-learning implementation	Systematic and structured strategies are essential; successful e-learning implementation depends on teacher readiness, managerial support, and student participation.

The literature review table above presents a summary of eight scholarly articles discussing various aspects of technology-based learning management in Islamic schools. Each article offers a distinct focus; however, collectively, they emphasize the importance of integrating technology with managerial strategies, teacher readiness, infrastructure support, and school leadership.

Several studies highlight the role of Learning Management Systems (LMS) and digital media as tools to enhance students' learning motivation, engagement, and creativity in the learning process (Hidayat et al., 2022; Fauzi & Hendra, 2020). In addition, some articles underscore school leadership and managerial strategies as key factors in the successful implementation of digital learning (Nugroho, 2022; Rahman & Sutanto, 2020).

Teacher readiness and the availability of adequate facilities are also major concerns, as limited teacher competence or insufficient infrastructure may hinder the effective use of technology (Kusuma, 2019; Al-Fadhli, 2021). Other studies address curriculum management

and technology-based evaluation, which ensure that the learning process remains structured and that curriculum goals are effectively achieved (Syamsudin, 2021).

The discussion of this study indicates that the application of technology in learning management within Islamic schools makes a significant contribution to the effectiveness and quality of the teaching and learning process. The results of the literature review confirm that the use of Learning Management Systems (LMS) and digital media enhances students' learning motivation, facilitates progress monitoring, and promotes collaboration between teachers and students (Hidayat et al., 2022; Fauzi & Hendra, 2020). Technology is not merely an instructional tool but also a strategic component of modern learning management.

Furthermore, the leadership of school principals plays a central role in ensuring the successful implementation of technology. Principals who proactively provide training, regular monitoring, and evaluations can enhance teachers' competencies and maximize the use of digital media in instruction (Nugroho, 2022; Rahman & Sutanto, 2020). These findings highlight that the success of technology integration in education depends largely on effective management and leadership strategies.

Teacher readiness also emerges as a key concern. Several studies reveal that limited teacher competence in ICT and a lack of understanding of technology integration can significantly hinder implementation (Kusuma, 2019; Al-Fadhli, 2021). Therefore, teacher training and professional development programs are essential components of technology-based learning management, enabling teachers to deliver lessons more effectively and interactively.

In addition to teacher readiness, the availability of technological facilities and infrastructure serves as a determining factor. Schools with stable internet access, adequate digital devices, and interactive learning media are better equipped to create adaptive and engaging learning environments (Al-Fadhli, 2021). Adequate infrastructure supports smooth implementation and minimizes disruptions during the teaching and learning process (Buchori, 2023).

Technology-based curriculum management and evaluation also show a positive impact on learning quality. Research emphasizes that technology assists teachers in monitoring curriculum achievement, conducting formative assessments, and collecting students' learning data in real-time (Syamsudin, 2021). Thus, technology functions not only as a communication medium but also as a managerial instrument that enhances the overall effectiveness of learning.

Other findings indicate that the use of digital media in creative learning can improve students' critical thinking and creativity skills. Digital tools such as interactive videos, online

quizzes, and collaborative platforms provide opportunities for students to express their ideas more freely and innovatively (Fauzi & Hendra, 2020). This underscores the importance of project-based and creative digital learning as integral elements of modern learning management in Islamic schools.

Overall, the literature review highlights that the success of technology-based learning management largely depends on the integration of managerial strategies, leadership, teacher readiness, and infrastructural support. A holistic and systematic approach enables Islamic schools to fully leverage technology while maintaining alignment with Islamic educational values, resulting in effective, engaging, and 21st-century-oriented learning experiences (Rahman & Sutanto, 2020;Lubis, 2024)

The implementation of technology in learning management within Islamic schools has shown a significant positive impact on expanding access, improving quality, and strengthening students' character development. Technology enables broader educational reach, particularly in remote areas, allowing more students to gain access to Islamic education (Haryati et al., 2024). The use of digital tools such as online learning platforms and Learning Management Systems (LMS) creates interactive learning environments, enhances student engagement, and facilitates academic performance evaluation (Haryati et al., 2024; Salabila, 2024). Moreover, integrating technology with Islamic values supports moral and spiritual-based character education, ensuring that digital learning remains aligned with ethical principles and Islamic teachings (Zakiyyah et al., 2024).

However, the application of technology in Islamic education also faces several challenges that must be addressed. The digital divide remains a major obstacle, especially in areas with limited internet access and learning devices (Salabila, 2024). The limited competence of educators in effectively utilizing technology also poses difficulties, highlighting the need for continuous professional development programs to enhance teachers' digital literacy and pedagogical skills (Arifin et al., 2025; Sa'diyah et al., 2025). In addition, issues related to data privacy and student security must be considered in the use of digital platforms (Salabila, 2024). Therefore, strategic efforts such as teacher professional development, investment in ICT infrastructure, and policy alignment that integrates technology with Islamic values are essential to ensure that digital transformation in Islamic schools is both effective and sustainable (Arifin et al., 2025; Sa'diyah et al., 2025).

#### **4. CONCLUSION**

Based on the literature review of eight articles, it can be concluded that technology-based learning management in Islamic schools plays a crucial role in enhancing the effectiveness, quality, and engagement of students in the teaching and learning process. The successful implementation of technology does not solely depend on digital tools but also on the leadership of school principals, teacher readiness and competence, the availability of facilities, curriculum management, and learning evaluation. The application of systematic and integrated managerial strategies allows technology to be optimally utilized to support interactive and creative learning while remaining aligned with Islamic educational values. These findings emphasize the need for a holistic approach to technology-based learning management and provide a foundation for policy development, best practices, and future research in Islamic schools.

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