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Integration of Technology in Islamic Education Learning: A New Paradigm of Learning Management

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Abstrak

Teknologi telah menjadi bagian tak terpisahkan dalam sistem pendidikan, termasuk dalam pendidikan Islam. Integrasi teknologi dalam pembelajaran bertujuan untuk meningkatkan efektivitas proses belajar mengajar serta memperluas akses pendidikan yang lebih inklusif. Namun, implementasinya tidak selalu berjalan tanpa hambatan, terutama dalam kesiapan tenaga pendidik, akses infrastruktur, dan adaptasi terhadap perubahan. Oleh karena itu, penelitian ini bertujuan untuk mengeksplorasi strategi terbaik dalam mengintegrasikan teknologi ke dalam pembelajaran pendidikan Islam, dengan fokus pada MAN 1 Kabupaten Gorontalo sebagai studi kasus digital. Metode penelitian yang digunakan adalah pendekatan kualitatif dengan studi kasus digital. Data dikumpulkan melalui wawancara mendalam dengan kepala sekolah, guru, dan siswa; observasi kelas berbasis teknologi; serta analisis dokumen digital seperti kebijakan sekolah dan hasil belajar siswa dalam Learning Management System (LMS). Teknik analisis tematik digunakan untuk mengidentifikasi pola utama dalam penggunaan teknologi serta tantangan yang dihadapi dalam implementasinya. Hasil penelitian menunjukkan bahwa setelah integrasi teknologi, pembelajaran di MAN 1 Kabupaten Gorontalo menjadi lebih interaktif, fleksibel, dan berbasis data. Guru mulai menggunakan berbagai platform digital seperti Google Classroom dan aplikasi interaktif lainnya untuk meningkatkan keterlibatan siswa. Namun, penelitian ini juga menemukan bahwa keterbatasan akses internet, kesenjangan keterampilan digital antara guru dan siswa, serta ketersediaan perangkat masih menjadi tantangan utama. Kesimpulannya, meskipun integrasi teknologi membawa banyak manfaat, diperlukan strategi yang lebih sistematis dalam meningkatkan kesiapan guru dan siswa serta penguatan infrastruktur digital. Implikasi dari penelitian ini adalah pentingnya dukungan kebijakan pendidikan yang berkelanjutan, pelatihan guru secara berkala, dan pengembangan model pembelajaran berbasis teknologi yang sesuai dengan kebutuhan pendidikan Islam di era digital.

Kata Kunci: Teknologi Pendidikan, Manajemen Pembelajaran, Pembelajaran Digital, Pendidikan Islam, LMS.

Abstract

Technology has become an integral part of the education system, including Islamic education. The integration of technology in learning aimed to enhance the effectiveness of the teaching and learning process while expanding access to more inclusive education. However, its implementation did not always proceed without challenges, particularly in teacher readiness, infrastructure access, and adaptation to change. Therefore, this study aimed to explore the best strategies for integrating technology into Islamic education, focusing on MAN 1 Kabupaten Gorontalo as a digital case study. This research employed a qualitative approach

with a digital case study method. Data were collected through in-depth interviews with the school principal, teachers, and students; classroom observations of technology-based learning; and document analysis of school policies and student learning outcomes in the Learning Management System (LMS). Thematic analysis was used to identify key patterns in technology use and the challenges faced in its implementation. The findings revealed that after technology integration, learning at MAN 1 Kabupaten Gorontalo became more interactive, flexible, and data-driven. Teachers utilized various digital platforms such as Google Classroom and interactive applications to enhance student engagement. However, the study also found that limited internet access, disparities in digital skills between teachers and students, and the availability of devices remained major challenges. In conclusion, although technology integration brought numerous benefits, a more systematic strategy was needed to improve teacher and student readiness and strengthen digital infrastructure. The implications of this study highlight the importance of sustained educational policy support, regular teacher training, and the development of technology-based learning models tailored to the needs of Islamic education in the digital era.

Keywords: Educational Technology, Learning Management, Digital Learning, Islamic Education, LMS.

INTRODUCTION

The integration of technology in Islamic education has become a major concern in recent years. Information and communication technology (ICT) is used to improve the effectiveness of learning, expand access to educational resources, and support more interactive teaching methods. The use of technology such as e-learning and digital media has helped accelerate the transformation in the Islamic education system (Sholeh and Efendi, 2023).

In addition, technology has also played an important role in Islamic education management, particularly in school administration, learning evaluation, and communication between teachers and students. With the digital system, school management becomes more efficient and transparent, so that it can improve the overall quality of education (Hanifah Salsabila *et al.*, 2023).

Previous research has shown that the integration of technology in Islamic education can increase students' motivation to learn, facilitate distance learning, and allow for wider collaboration between students and teachers. This shows that the application of technology in Islamic education is no longer just a trend, but a necessity to face the challenges of the digital era (Yunianto *et al.*, 2024).

Currently, many Islamic educational institutions have implemented various digital platforms to support the learning process. The use of Learning Management System (LMS), mobile-based learning applications, and social media is increasingly being applied to increase flexibility and accessibility for students (Neliwati, Pohan and Rambe, 2024).

On the other hand, management information systems have also been implemented in various Islamic schools and colleges to optimize administrative processes, including schedule management, assessment, and reporting of learning outcomes. This helps improve the operational efficiency of educational institutions (Money Vehicle Team, 2024).

Technology-based learning approaches have also begun to be developed to improve students' critical and collaborative thinking skills. The project-based learning model supported by technology allows students to be more active and creative in exploring science (Permana *et al.*, 2024).

Although technology has been widely integrated in Islamic education, there are still some challenges that need to be overcome. One of them is limited access and infrastructure in some areas, especially in remote areas. This digital divide is an obstacle to equal access to technology-based education (Hartati, Fernadi and Utama, 2022).

In addition, there are still many teachers who do not have adequate skills or training to optimize the use of technology in learning. The lack of training and support for educators makes technology adoption not always optimal (Eltomy *et al.*, 2025).

Another aspect that still receives less attention is the long-term impact of technology integration on student learning outcomes in Islamic education. Most research still focuses on the implementation of technology, but not much has been examined for its long-term effects on the quality of education and the development of students' character (Zaharah *et al.*, 2024).

This study offers a new approach in Islamic education learning management by integrating technology more comprehensively. Not only as a tool, but as an integral part of curriculum design and learning strategies (Hilman, 2025).

The proposed approach emphasizes the importance of developing digital competencies for teachers and students so that they can make the most of technology. Thus, learning can be more adaptive to the changing times and the needs of students (Dilci and Eranıl, 2018).

In addition, this study also proposes a new evaluation model based on analytical data to monitor and improve the learning process in real-time. With this system, educational institutions can make more precise and data-driven decisions in managing learning (Muhammad Abdun Jamil, 2024).

The integration of technology in Islamic education has a great impact on the overall quality of education. By utilizing technology optimally, learning becomes more effective and relevant to the needs of the times. In addition, a digital-based management system can improve the operational efficiency of Islamic educational institutions, ranging from administrative transparency to school management accountability. With this system, data-driven decision-making becomes more accurate (Nissa and Nurdin, 2024).

Finally, technology-based learning can also increase student engagement, helping them develop 21st-century skills such as critical thinking, problem-solving, and digital literacy. This will prepare them to face the challenges of the future.

The main objective of this study is to identify the most effective strategies in integrating technology into Islamic education. Each educational institution has different needs and challenges, so it is important to find an approach that suits the local context and student characteristics. By understanding the right strategy, technology is not only a tool, but can also act as a catalyst in improving the quality of learning.

In addition, this study aims to evaluate the extent to which the application of technology has an impact on teacher performance and student learning outcomes. Technology applied in learning must really provide real benefits, both in increasing teaching effectiveness and in facilitating student understanding. This evaluation will help determine whether the use of technology really improves the quality of Islamic education or actually poses new challenges that need to be overcome.

Finally, this research wants to develop a sustainable training model for teachers so that they can be more confident and skilled in utilizing technology in the classroom. Many teachers still have difficulties in adopting technology due to limited skills and lack of training.

Therefore, the development of a systematic and ongoing training program will go a long way in ensuring that technology can truly be effectively integrated into the Islamic education system.

RESEARCH METHODS

The approach used is qualitative with a digital case study method (Hasan, 2020). This method allows for a more in-depth exploration of how technology is integrated in Islamic education learning in MAN 1 Gorontalo Regency. By exploring first-hand experiences from various parties, this research can capture a real picture of the challenges and opportunities that arise in the application of technology in the school environment. Not only analyzing policies, but also looking at how the implementation of technology has a direct impact on teaching and learning activities (Tight, 2014).

This research involves various parties who have an important role in technology integration in schools. The Principal of MAN 1 Gorontalo Regency was chosen as a participant because of his role in formulating policies and making strategic decisions related to the application of technology. Three teaching teachers who actively use technology in the learning process are also part of this study to explore their experience in adapting digital-based learning methods. Meanwhile, twelve grade IX students were selected to understand how they utilize technology in their daily learning processes. By selecting diverse participants through purposive sampling techniques, this study can gain a more comprehensive insight into the integration of technology from different perspectives (Adsız and Dinçer, 2025).

In collecting data, this study uses three main approaches. In-depth interviews were conducted with principals, teachers, and students to understand their experiences, challenges, and perceived benefits from the use of technology in learning. In addition, technology-based classroom observation allows researchers to see firsthand how technology is applied in learning, from the use of digital devices to teacher and student interactions in a virtual environment. Not only that, this research also involves the analysis of digital documents, such as student learning outcomes, school policies, and activity recordings in digital learning platforms (LMS). This approach ensures that the data obtained is not only based on opinions, but is also supported by concrete evidence (Mahmudiyah, Mariana and Surabaya, 2025).

This research process is carried out systematically through four stages. The first stage is preparation, which includes licensing to schools, selecting participants, and preparing research instruments to suit the needs of the study. After that, the second stage is data collection, where interviews, observations, and analysis of documents are conducted to gather relevant information. The data that has been obtained is then analyzed using thematic analysis techniques in the third stage, where the main patterns and findings begin to be identified. Finally, in the fourth stage, the reporting of results is carried out by compiling a research report containing the interpretation of the findings and implications for the development of technology-based learning management in Islamic education (Sholeh *et al.*, no date).

RESULTS AND DISCUSSION

Learning Transformation: From Conventional to Digital Methods

Before technology was integrated in learning, the learning atmosphere at MAN 1 Gorontalo Regency was still very dependent on traditional methods. Teachers teach with lectures in front of the class, while students take notes on material from textbooks and whiteboards. Technology is only used in a limited way, for example through projectors to

display presentations in some subjects. As a result, learning interactions tend to be one-way, and students have limitations in accessing materials independently outside of school hours.

However, once schools began to adopt technology in learning, significant changes began to be felt. Now, Learning Management Systems (LMS) such as Google Classroom and Moodle have become part of the daily lives of students and teachers. Students can access materials at any time, work on assignments online, and communicate with teachers through digital platforms. Teachers have also started using interactive learning apps such as Kahoot!, Quizizz, and Edmodo to make classes more dynamic and fun. In addition, assessments are now easier to do digitally, allowing teachers to monitor student progress more efficiently (MD Rokibul Hasan *et al.*, 2024).

School Commitment to Supporting Technology-Based Learning

Seeing the positive impact of technology in learning, schools are taking concrete steps by establishing various policies to support this digital transformation. The Principal of MAN 1 Gorontalo Regency emphasized that the use of technology is not only a trend, but a need to prepare students for an increasingly digital world. Some of the policies implemented can be seen as follows

Table 1. MAN 1 Gorontalo Regency school policy

No	Policy	Description
1	Regular Teacher Training	Schools realize that not all teachers grow up in the digital era, so they need guidance to be more confident in using technology. Therefore, regular training is held so that teachers do not feel "left behind" by the times. This training includes how to use LMS, create interactive materials, and strategies to build student engagement in digital classrooms. Thus, teachers are not only teachers, but also learners who are always evolving.
2	Preparation of Digital Learning Guidelines	To avoid confusion in the application of technology, schools have compiled practical guides that teachers can access at any time. These guidelines are like a "roadmap" that helps teachers understand the standard steps in integrating technology in the classroom. With clear references, teachers can focus more on creativity and innovation in teaching, without feeling burdened by the technicalities of using digital tools.
3	Hybrid Learning as a Flexible Solution	The school understands that not all students have the same learning conditions. Therefore, the Hybrid Learning model is applied to provide flexibility in learning. Students can access the material at any time and repeat the lesson as needed. With a combination of face-to-face and online, learning becomes more inclusive, supporting students who have limited physical access to school or want to learn at their own pace.
4	Periodic Evaluation and Implementation Monitoring	Good technology is one that is continuously evaluated. The school forms a dedicated team tasked with ensuring that the integration of technology runs effectively. This evaluation is carried out with a humanist approach—not looking for mistakes, but understanding the challenges faced by teachers and students. Mentoring is provided on a personal

	basis to help those who are struggling, ensuring that no one feels alone in the face of these changes.

The policy implemented by MAN 1 Gorontalo Regency is not just a written rule, but a form of school concern for teachers and students in facing the digital era. Teacher training is designed so that educators do not feel left behind by technology, while digital learning guidelines are created to provide clarity and easy-to-understand direction.

With Hybrid Learning, students are given the freedom to access materials according to their needs and conditions, so that the learning process becomes more personalized and inclusive. Moreover, periodic evaluation and monitoring are carried out with an empathetic approach—not to judge, but to support and ensure that all elements of the school can adapt well.

This approach confirms that technology in education is not about replacing humans, but about strengthening relationships and collaboration between teachers, students, and the learning system itself.

Infrastructure and Challenges: The Path to Optimal Digital Transformation

MAN 1 Gorontalo Regency has made various efforts to improve digital infrastructure to support technology-based learning. However, on the way, there are still challenges that need to be overcome so that the use of technology can run more optimally. Here's a mapping between the infrastructure that is already in place and the challenges that are still being faced:

Table 2. Available Digital Infrastructure

No	Infrastructure	Description
1	Updated Computer Lab	Laboratory spaces are now more comfortable with modern devices that allow students to learn digital skills better. The lab is not only a place to type assignments, but also a forum for broader technological exploration, such as basic programming and the use of educational applications.
2	More Stable School Wi-Fi Network	Schools have improved internet access to make it more evenly distributed in various areas. This allows students and teachers to access digital materials seamlessly without having to rely on personal data packages. Classrooms are now more interactive with better connectivity.
3	Digital Learning Devices (Projectors & Tablets)	Some classrooms have been equipped with projectors and tablets to increase learning interactivity. With this device, teachers can display more interesting material, while students can be more involved in the learning process.
4	LMS Sekolah (Learning Management System)	Schools now have a digital platform where teachers and students can access subject matter, collect assignments, and conduct assessments online. With this system, learning becomes more flexible and students can learn at any time without being limited by the classroom.

Based on the mapping, Technology is not only about tools, but about how humans use them. Schools have tried to provide better facilities so that teachers and students can experience the benefits of digital learning. The updated computer laboratory becomes an exploration space for students to get to know the digital world more deeply. More stable Wi-Fi opens access for those who want to study without space restrictions. Devices such as projectors and tablets make the learning process more interactive, and the School's LMS provides flexibility for students to manage their assignments independently. However, the journey to digitalization is not always smooth. Because sometimes the facilities provided can experience challenges as the following mapping:

Table 3. Challenges in Technology Implementation

No	Challenge	description
1	Uneven Internet Access	Although school Wi-Fi has been expanded, some points are still experiencing unstable connections, especially when many students are accessing them at the same time. This sometimes disrupts digital learning, and teachers have to adjust methods to remain effective.
2	Diverse Teacher and Student Readiness	Not all teachers and students have the same level of understanding of technology. Some teachers who are used to teaching with traditional methods still feel awkward in utilizing technology. Likewise, students who are not used to learning through digital platforms, so additional guidance is still needed.
3	Device Access Constraints	Not all students have a personal laptop or smartphone to access materials outside of class. Most of them still depend on school facilities, which are sometimes limited in number. This is a challenge in ensuring that all students get equal learning opportunities.
4	Adaptation to Change	The transition process from conventional to digital learning takes time. Some teachers and students feel that technology is demanding that they get out of their comfort zone, so they need to be motivated and supported to be better prepared for change.

Some of these challenges as presented above, such as uneven internet access, differences in the level of readiness of teachers and students, and obstacles in device ownership are still issues that need to be overcome. Adapting to change is also a challenge, especially for those who have been accustomed to traditional teaching methods.

Nonetheless, these changes bring great hope. With the support of schools, teachers, and students who continue to adapt, the integration of technology in learning at MAN 1 Gorontalo Regency is not just a change in the system, but a transformation of the learning culture towards a more inclusive and innovative digital era.

CONCLUSION

The integration of technology in learning in MAN 1 Gorontalo Regency has brought about a major change in the way teachers teach and students learn. The use of Learning

Management Systems (LMS), hybrid learning, and various digital devices has opened up wider access to education, made learning more interactive, and strengthened the relationship between teachers and students. To support this change, schools have also implemented various policies, such as regular teacher training and the preparation of digital learning guidelines, to make the transition to technology-based systems more effective.

However, behind this progress, there are still challenges to overcome. Not all students have stable internet access, not all teachers are ready to adopt technology quickly, and device limitations are still an obstacle in some circles. Therefore, real efforts are needed, such as the provision of more equitable infrastructure, increased teacher training, and the development of a curriculum that is more flexible and can adapt to the needs of the times.

Going forward, collaboration between educational institutions, the government, and the private sector will be key to ensuring that all students, without exception, can benefit from technology-based learning. In addition, it is important to continue to evaluate the long-term impact of the integration of this technology on student learning outcomes, so that Islamic education not only keeps up with the times, but also maintains the essence and values taught. With the right steps, this digital transformation can be a gateway to Islamic education that is more inclusive, innovative, and relevant to future needs.

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