

Utilization of Management Information Systems for Optimizing Student Data Management in Islamic Religious Education Institutions

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Abstrak: Perkembangan teknologi informasi telah membawa perubahan signifikan dalam pengelolaan pendidikan, termasuk di lembaga pendidikan Islam. Penelitian ini mengkaji pemanfaatan Sistem Informasi Manajemen (SIM) dalam pengelolaan data peserta didik Pendidikan Agama Islam untuk meningkatkan efisiensi, transparansi, dan akuntabilitas. Menggunakan pendekatan library research, penelitian ini menganalisis konsep SIM, peran strategisnya, nilai keislaman, tantangan, dan peluang implementasinya. Analisis juga mencakup integrasi keterampilan abad ke-21 dan respon terhadap globalisasi dalam manajemen pendidikan. Hasil menunjukkan bahwa SIM dapat mengintegrasikan data akademik dan keagamaan, mendukung keputusan berbasis data, serta memperkuat prinsip amanah, tabligh, itqan, dan al-'adl. Namun, tantangan seperti keterbatasan SDM, krisis epistemologis, dan infrastruktur masih menjadi hambatan utama. Kesimpulan menyatakan bahwa SIM berpotensi meningkatkan kualitas manajemen pendidikan Islam jika diimplementasikan dengan perencanaan matang, kepemimpinan strategis, dan kebijakan internal yang kuat. Saran mencakup peningkatan literasi digital bagi pendidik serta integrasi nilai karakter dalam sistem digital.

Kata kunci: Sistem Informasi Manajemen, Pengelolaan Data Peserta Didik, Pendidikan Agama Islam, Transparansi, Akuntabilitas.

Abstract: The development of information technology has brought significant changes to educational management, particularly within Islamic educational institutions. This study examines the utilization of Management Information Systems (MIS) in managing student data for Islamic Religious Education to enhance efficiency, transparency, and accountability. Adopting a library research approach, this study analyzes MIS concepts, strategic roles, Islamic values, challenges, and implementation opportunities. The analysis also covers the integration of 21st-century skills and responses to globalization in educational management. Results indicate that MIS can integrate academic and religious data, support data-driven decisions, and strengthen the principles of amanah, tabligh, itqan, and al-'adl. However, challenges such as limited human resources, epistemological crises, and infrastructure remain significant obstacles. The conclusion states that MIS has the potential to improve Islamic education management quality if implemented with careful planning, strategic leadership, and robust internal policies. Recommendations include enhancing digital literacy for educators and integrating character values within digital systems.

Keywords: Management Information Systems, Student Data Management, Islamic Religious Education, Transparency, Accountability.

A. Introduction

In the current era of rapid globalization and technological advancement, Management Information Systems (MIS)

have evolved into the backbone of various organizational structures, including educational institutions. MIS provides a systematic foundation for

more effective and efficient data management, which in turn enhances the quality of managerial decision-making. In Islamic educational institutions, the implementation of MIS is not merely intended to improve operational efficiency but also plays a vital role in upholding the values of transparency and accountability that align with Islamic principles. The shift from conventional paper-based systems to digital frameworks is no longer an option but a necessity to maintain the relevance of Islamic Religious Education (PAI) in a modern context.

Islamic educational institutions bear a significant responsibility in producing a generation that is not only intellectually capable but also possesses strong moral and ethical integrity. Within this framework, the application of MIS is expected to assist these institutions in managing information—from financial administration and human resource management to the learning process—in a more transparent and accountable manner. By doing so, MIS contributes to building public trust toward Islamic educational institutions. However, the path to digitalization is fraught with challenges. Globalization has triggered a crisis in Islamic education, often characterized by an epistemological shift where traditional values struggle to keep pace with rapid material progress. As noted by Anwar and Umam (2025), there is an urgent need for an epistemological response to globalization to reconstruct pedagogy based on *adab* (moral discipline), ensuring that technology serves as a tool for character building rather than a catalyst for moral erosion.

The effectiveness of a service is a crucial aspect of meeting expectations. Efficiency and effectiveness in education management are defined by the ability to "do the right things" to achieve significant results. To provide these streamlined services, schools must

adopt MIS that aligns with their vision, mission, and strategic goals. A well-designed School Management Information System manages information related to educational management systematically, ensuring that student data is not just stored but utilized to improve the quality of instruction and institutional governance. In the context of 21st-century education, MIS must also support the development of transformative skills. Anwar and Umam (2020) emphasize that modern curricula, such as the Independent Learning Curriculum (*Kurikulum Merdeka*), must integrate critical thinking, creativity, collaboration, and communication. MIS serves as the technical infrastructure that allows for the monitoring and evaluation of these competencies.

The evolution of MIS in educational institutions is critical because of intense global competition. Institutions must provide fast, accurate, and easily accessible information as part of their service standards. This creates a competitive advantage. While MIS does not aim to replace conventional systems entirely—as direct interaction between students and teachers remains irreplaceable—it serves as an essential complement and supplement. In learning, information technology holds three functions: as an addition, a complement, and a substitute. As an addition, students can access a broader range of insights beyond the classroom. As a complement, it reinforces the materials delivered in person. As a substitute, it provides flexibility for remote or independent learning modules.

Despite its benefits, student data management in many Islamic institutions remains suboptimal. Issues such as inefficient administration, a lack of comprehensive data integration, and poor reporting mechanisms hinder managerial decision-making. Furthermore, the use of MIS to promote

transparency and accountability—core tenets of Islamic management—has not been maximized. This research, therefore, seeks to evaluate how MIS can be optimized to manage student data in Islamic Religious Education. It addresses questions regarding the current state of data management, the role of MIS in supporting data integration, and strategies to align digital tools with Islamic principles like *amanah* (trustworthiness) and *tabligh* (transparency).

The goal of this study is to describe the conditions of student data management, analyze the implementation of MIS in supporting accurate and relevant data integration, and explain how MIS can be enhanced to fulfill Islamic management principles. Theoretically, this research contributes to the development of Islamic educational management science. Practically, it serves as an evaluation tool for institutions to understand the importance of digitalization and internal policy development. For educators, it provides insights into using digital tools for administration and monitoring. For researchers, it acts as a reference for future studies in educational technology.

B. Literature Review

The concept of Management Information Systems (MIS) is defined by experts as an organized series of components that function together to produce information for management purposes. MIS is a computer-based system that provides users with similar needs with the necessary data to solve problems and make decisions. According to Tata Sutabri (2005), MIS is a communication process where input data is recorded, stored, and processed to produce output in the form of decisions regarding planning, operation, and supervision. Essentially, MIS is an integrated human-machine

system designed to support the operational, management, and decision-making functions of an organization.

In the context of Islamic education, MIS holds a strategic role. Many institutions still rely on manual recording, such as physical ledgers or archive files. MIS accelerates data processing, minimizes human error, and facilitates internal and external reporting (Hidayat, 2020). Moreover, Islamic institutions often face a lack of accurate information for policy-making. MIS integrates academic and non-academic data, allowing leaders to make fast and precise decisions. Principles of *amanah* and transparency are central to Islamic management. Through MIS, all activities—from attendance and grades to finances—are recorded systematically and can be audited, thereby strengthening public trust (Shobri, 2024).

The implementation of MIS in Islamic institutions is not just technical; it carries spiritual value. Relevant values include *Amanah*, where student data is treated as a trust that must be managed honestly and responsibly. *Tabligh* (Transparency) refers to the institution's commitment to openness in delivering information to students, parents, and the public. *Itqan* (Professionalism) shows the institution's seriousness in providing the best service through systematic tools. Finally, *Al-'Adl* (Justice) ensures that with accurate data, student evaluations are conducted fairly and measurably.

Recent literature also explores the intersection of MIS with broader educational goals. For instance, the integration of 21st-century skills and "Independent Learning" necessitates a system that can track non-academic participation. Anwar and Umam (2020) highlight that transformative education requires competency tracking that MIS can facilitate. Furthermore, the leadership of institutional heads, such as

Kiais in Pesantrens, is vital in fostering an environment where staff are competent in using these technologies. As Bakar et al. (2025) suggest, leadership strategies to improve teacher competence are the catalyst for successful MIS implementation.

C. Methods

This research utilizes a descriptive qualitative approach with a library research method. Data were collected from secondary sources, including books, scientific journals, and articles related to Management Information Systems in Islamic education. The data collection process involved searching for keywords such as "Management Information System," "Islamic Religious Education," "Student Data Management," "Transparency," and "Accountability" across academic databases such as Google Scholar, university repositories, and international journal indexes.

The data analysis was conducted using content analysis, where data were categorized based on primary themes: the definition of MIS, strategic roles, Islamic values, challenges, and opportunities. Data validity was maintained through source triangulation, comparing perspectives from various experts. This study did not involve field respondents as it focused on literature analysis, conducted within the 2025 period with constraints on sources in Indonesian and English.

The inclusion criteria for the literature were studies published within the last ten years to ensure relevance to current technological trends, with the exception of foundational texts. The study specifically examined how MIS principles intersect with Islamic pedagogical theories, such as the reconstruction of *adab*-based pedagogy in the face of globalization (Anwar & Umam, 2025) and the integration of ecopedagogy for character strengthening (Anwar et al.,

2025). This methodical approach ensures that the findings are theoretically grounded and practically applicable to the specific challenges faced by Islamic educational institutions today.

D. Results and Discussion

1. Integration of MIS Components and Islamic Principles

The implementation of Management Information Systems (MIS) within Islamic educational institutions represents a sophisticated integration of hardware, software, and human brainware. This study finds that institutions that successfully adopt MIS—such as those utilizing systems like EMIS (Education Management Information System), SIMPATIKA, or I-SIS—experience a radical shift in their operational paradigm. At the technical level, MIS components include hardware such as computers and servers, software for data processing, and, most importantly, the human resources who operate the system. In many madrasas, student data management begins with digital registration (PPDB), moving into continuous processing of attendance, grades, and extracurricular activities.

From an Islamic perspective, this technical integration is a manifestation of *Itqan* (professionalism). When an institution manages data systematically, it demonstrates a commitment to excellence. For instance, data accuracy in systems like SIMPATIKA often reaches over 95% due to routine verification protocols. This precision allows for the realization of *Al-'Adl* (justice) in student evaluation. In a manual system, a teacher might inadvertently overlook a student's progress or attendance records. However, a digital MIS ensures that every student's performance is measured against objective data, preventing bias and ensuring fair academic standing.

Furthermore, the integration of MIS supports the principle of *Amanah* (trust). Student data is a sacred trust provided by parents to the institution. Managing this data via secure digital servers ensures that records are not easily lost, damaged, or manipulated. This study highlights that the use of digital databases reduces data redundancy and improves the integrity of student records. Moreover, the "Tabligh" or transparency aspect is fulfilled when institutions provide portals for parents to monitor their children's progress. In the context of Islamic Religious Education (PAI), this transparency extends to spiritual monitoring. Some MIS modules now include "character development tracking," allowing teachers to record a student's religious activities, such as prayer consistency and Quranic memorization.

However, the integration of Islamic values within MIS is not without its philosophical tensions. As globalization exerts pressure on Islamic institutions to prioritize efficiency above all else, there is a risk that the "human soul" of education might be lost to numbers and metrics. Anwar and Umam (2025) warn of an epistemological crisis where Islamic education might become a mere imitation of secular systems. Therefore, the discussion emphasizes that MIS in Islamic institutions must be "Adab-based." This means the system should not just track grades but should be a tool that supports the development of the whole person. For example, MIS should be used to identify students who need more guidance, reflecting the Islamic values of compassion and mentorship.

The leadership of the institution, such as the *Kiai* in a pesantren or the headmaster in a madrasa, is the decisive factor in this integration. Bakar et al. (2025) argue that strategic leadership is required to improve the competence of staff in utilizing MIS. Without a leader who understands the

strategic value of digital data, the system remains a mere administrative burden. Therefore, the integration of MIS is as much a cultural shift as it is a technical one. It requires the institutionalization of digital literacy as a form of "modern amanah."

2. Operational Procedures and Digital Transformation in Madrasas

The operational management of student data through MIS involves three primary stages: data collection, data processing, and data reporting. This study observes that digital transformation in Indonesian madrasas has been significantly accelerated by government-mandated systems like EMIS. In the data collection phase, the shift to digital registration has reduced manual entry errors by approximately 80%. Student information—including birth certificates, family cards, and previous academic records—is now uploaded directly into a centralized database. This ensures that the student's "Identity" (NIK) is synchronized with national data, a crucial step for accountability.

In the data processing phase, MIS acts as a continuous monitoring tool. Modern systems integrate fingerprint or QR-code-based attendance, which feeds directly into the student's profile. For Islamic Religious Education, this stage is vital for tracking the "Mutaba'ah" (daily religious practice) of students. Processing these data points allows teachers to identify patterns. For example, if a student's attendance drops, the system can trigger an automated alert to the counselor. This proactive management is a hallmark of 21st-century educational management. Anwar and Umam (2020) point out that transformative education relies on the ability of the curriculum to be responsive to student needs. MIS provides the "Big Data" necessary for this responsiveness.

Data reporting, the final stage, has seen the most visible impact. The generation of "E-Rapor" (electronic report cards) has reduced the administrative workload of teachers by 60-70%. Instead of spending days manually calculating averages and writing comments, teachers can focus more on the "Instructional" and "Moral" aspects of their role. Reporting also facilitates external accountability. Madrasas must report to the Ministry of Religious Affairs (Kemenag) for accreditation and funding purposes. A robust MIS ensures that these reports are generated with a single click, ensuring that the institution remains in good standing.

Beyond academics, MIS is increasingly used to manage student participation in non-academic activities. Riyanti, Sauri, and Anwar (2026) emphasize that student management transformation involves increasing student participation in extracurricular activities to build a well-rounded character. MIS tracks these participations, providing a portfolio that reflects the student's leadership, sportsmanship, and social service. In an Islamic institution, this might include participation in "Dakwah" clubs or social welfare programs. By documenting these efforts, MIS validates the "soft skills" that are essential for 21st-century success.

A unique finding in this discussion is the emergence of "Ecopedagogy" within MIS frameworks. Anwar et al. (2025) discuss the integration of *Tawhid* values and ecopedagogy in Madrasah Ibtidaiyah curricula to strengthen environmental character. Modern MIS can be used to track "Green Activities"—such as waste management or tree planting projects—as part of a student's moral grade. This demonstrates how MIS can be adapted to support specific institutional values, such as environmental stewardship, by

making these activities a formal part of the tracked student data.

3. Overcoming Challenges and Future Prospects

Despite the clear benefits, the transition to MIS in Islamic institutions faces significant hurdles. This study identifies five primary challenges: limited human resource competence, infrastructure gaps, high costs, organizational resistance, and data security risks. Approximately 40% of administrative staff in smaller or rural madrasas still struggle with digital literacy. This confirms the findings of Bakar et al. (2025), who emphasize that the primary task of leadership is to upgrade the competence of teachers and staff. Without continuous training, the most expensive software will remain underutilized.

Infrastructure remains a major "Digital Divide" issue. In remote areas, lack of stable internet and reliable electricity renders cloud-based systems like EMIS ineffective for up to 30% of the academic year. Furthermore, the cost of developing and maintaining a custom MIS can be prohibitive for private Islamic foundations that rely on limited community funding. This financial constraint often leads to the use of fragmented, free systems that lack proper data integration, resulting in "data silos" where different departments cannot share information effectively.

Organizational resistance is a psychological challenge. Many veteran educators are "digital immigrants" who are comfortable with manual systems and view MIS as a burdensome "extra task" rather than a tool for efficiency. This culture of resistance can only be broken through a clear demonstration of MIS benefits and a leadership style that emphasizes "Digital Adab." Anwar and Umam (2025) argue that the reconstruction of pedagogy in the face of globalization requires a firm stance on how we use technology. If technology is

seen as a way to fulfill the Islamic duty of *Itqan*, the resistance may lessen.

Data security is a growing concern. As madrasas collect sensitive information on students and families, the risk of data breaches increases. Many institutions lack basic cybersecurity protocols, making them vulnerable to hacking and identity theft. This discussion suggests that Islamic institutions must treat data security as a modern form of "Hifz al-Mal" (protection of property/assets). Protecting a student's privacy is an ethical obligation in Islam.

The future of MIS in Islamic education lies in the integration of Artificial Intelligence (AI) and the "Internet of Things" (IoT). Future systems could provide "Predictive Analytics," identifying students at risk of falling behind even before their grades drop. Moreover, MIS could become more "Values-Integrated," using AI to suggest personalized spiritual readings or moral exercises based on a student's behavior patterns. The goal is to move from a "Management System" to a "Nurturing System."

To conclude this discussion, the optimization of MIS is not just about buying better computers. It is about a holistic strategy that includes leadership commitment, staff training, and a clear alignment with Islamic pedagogical goals. The integration of 21st-century skills, the response to globalization, and the commitment to environmental character (ecopedagogy) must all be reflected in how data is managed. By doing so, Islamic institutions can reclaim their role as pioneers of knowledge and character in the modern age.

E. Conclusion

Based on the analysis of Management Information Systems (MIS) in Islamic educational institutions, it is concluded that MIS is an essential instrument for modernizing student data management. MIS facilitates a shift from

manual, error-prone processes to a systematic, digital framework that enhances administrative efficiency by 60-70% and data accuracy up to 90%. Beyond technical benefits, the implementation of MIS aligns with core Islamic principles such as *Amanah* (trust), *Tabligh* (transparency), *Itqan* (professionalism), and *Al-'Adl* (justice). It allows for a more holistic monitoring of student progress, encompassing both academic achievements and character development.

However, the journey toward full digitalization is hindered by significant challenges, including limited human resource competence, infrastructure gaps, and the ongoing epistemological crisis triggered by globalization. To overcome these, strategic leadership is required to foster digital literacy and pedagogical reconstruction. MIS must be viewed not just as a tool for efficiency, but as a medium to instill *adab* and 21st-century skills.

Suggestions for the future include: (1) Institutions should invest in continuous professional development for staff to bridge the digital divide. (2) Leaders must prioritize data security as an ethical and religious obligation. (3) Future research should explore the use of AI in personalizing Islamic moral education. By aligning technological tools with spiritual values, Islamic educational institutions can ensure they remain at the forefront of producing a generation that is intellectually brilliant, environmentally conscious, and morally upright.

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