



Optimizing the Role of Operators in Management Information Systems (MIS) at Madrasah Tsanawiyah Arrukhshatul'ulum

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Abstrak

Sistem Informasi Manajemen (SIM) berperan penting dalam meningkatkan kualitas administrasi dan akademik di madrasah. MTs Arrukhshatul'ulum mengelola beberapa sistem SIM yang diamanahkan oleh Kementerian Agama, termasuk SIMPATIKA (Sistem Informasi Pendidik dan Tenaga Kependidikan Madrasah), SIM-SARPRAS (Sistem Informasi Sarana dan Prasarana), EMIS (*Education Management Information System*), dan RDM (Rapor Digital Madrasah). Penelitian ini bertujuan untuk menganalisis peran operator SIM di MTs Arrukhshatul'ulum, yang berlokasi di Desa Cangkorah, Kecamatan Batujajar, Kabupaten Bandung Barat, dalam mengelola SIM, mengidentifikasi tantangan yang dihadapi, serta mengusulkan strategi optimalisasi. Penelitian ini menggunakan metode kualitatif deskriptif dengan pendekatan studi kasus. Subjek penelitian terdiri dari tiga kelompok, yaitu operator SIM (2 orang), kepala madrasah (1 orang), serta guru dan staf administrasi (5 orang). Operator SIM dipilih sebagai subjek utama karena peran mereka dalam input data, pengolahan, dan pelaporan. Kepala madrasah dilibatkan untuk mengeksplorasi perspektif manajerial, seperti dukungan kebijakan dan alokasi sumber daya bagi operator. Teknik pengumpulan data dilakukan melalui wawancara mendalam dan observasi. Data yang diperoleh dianalisis menggunakan analisis tematik, yang bertujuan untuk mengidentifikasi pola dan tema utama dalam data kualitatif. Analisis ini mencakup tahapan pembiasaan data, pengodean, identifikasi tema, dan interpretasi temuan. Hasil penelitian menunjukkan bahwa operator SIM menghadapi berbagai tantangan, seperti terbatasnya pelatihan teknis, infrastruktur yang kurang memadai, dan beban kerja yang tidak proporsional. Namun, dengan adanya dukungan dari pimpinan madrasah, pelatihan berkala, serta penyesuaian beban kerja, efektivitas pengelolaan SIM dapat ditingkatkan. Penelitian ini merekomendasikan penguatan kompetensi operator dan pemanfaatan teknologi yang relevan guna mendukung tata kelola madrasah yang modern.

Kata Kunci: Sistem Informasi Manajemen, Operator SIM, Madrasah Tsanawiyah, Efektivitas

Abstract

Management Information Systems (MIS) play a crucial role in improving administrative and academic quality in madrasahs. MTs Arrukhshatul'ulum manages several MIS systems mandated by the Ministry of Religious Affairs, including SIMPATIKA (Information System for Madrasah Educators and Education Personnel), SIM-SARPRAS (Infrastructure Information System), EMIS (Education Management Information System), and RDM (Madrasah Digital Report System). This study aimed to analyze the role of MIS operators at MTs Arrukhshatul'ulum, located in Cangkorah Village, Batujajar District, West Bandung Regency, in managing MIS, identifying challenges faced, and proposing optimization strategies. This research employed a descriptive qualitative method with a case study approach. The study subjects consisted of three groups: MIS operators (2 individuals), the madrasah principal (1 individual), and teachers and administrative staff (5 individuals). MIS operators were selected as key subjects due to their primary role in data entry, processing, and reporting. The madrasah



principal was involved to explore managerial perspectives, such as policy support and resource allocation for operators. Data collection techniques included in-depth interviews and observations. The collected data were then analyzed using thematic analysis, which aims to identify key patterns and themes within the qualitative data. Thematic analysis involves steps such as data familiarization, coding, theme identification, and interpretation of findings. The study results indicate that MIS operators face challenges such as limited technical training, inadequate infrastructure, and disproportionate workloads. However, support from madrasah leadership, regular training, and workload adjustments can enhance the effectiveness of MIS management. This study recommends strengthening operator competencies and utilizing relevant technology to support modern madrasah governance.

Keywords: Management Information Systems, SIM Operators, Madrasah Tsanawiyah, Effectiveness

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Introduction

Management Information Systems (MIS) have now become a primary necessity in managing educational institutions (Mubarak et al., 2019), including madrasahs (Kurniawan, 2019; Nurlaeli, 2020; Suryani et al., 2021). MIS is designed to help madrasahs manage various administrative and academic aspects in an integrated manner, covering student data management, teacher records, infrastructure, and reporting to relevant institutions.

The importance of accurate data recording and management is also emphasized in Surah Al-Baqarah: 282:

يَا أَيُّهَا الَّذِينَ آمَنُوا إِذَا تَدَايَنْتُمْ بِدَيْنٍ إِلَىٰ أَجَلٍ مُّسَمًّى فَاكْتُبُوهُ ۚ وَلْيَكْتُب بَيْنَكُمْ كَاتِبٌ بِالْعَدْلِ وَلَا يَأْبَ كَاتِبٌ أَنْ يَكْتُبَ كَمَا عَلَّمَهُ اللَّهُ فَلْيَكْتُب ۚ وَلْيَمْلِكِ الَّذِي عَلَيْهِ الْحَقُّ وَلْيَتَّقِ اللَّهَ رَبَّهُ وَلَا يَبْخَسْ مِنْهُ شَيْئًا

Meaning: "O you who have believed, when you contract a debt for a specified term, write it down. And let a scribe write it between you in justice. Let no scribe refuse to write as Allah has taught him. So let him write, and let the one who incurs the debt dictate. And let him fear Allah, his Lord, and not leave anything out of it."

This verse underscores the importance of recording all transactions and administrative matters to avoid errors and lack of transparency. In the context of this study, the implementation of MIS in madrasahs serves as a structured and systematic form of record-keeping to ensure transparency in managing student and teacher data, infrastructure, and academic reporting.

In this digital era, MIS also provides solutions to the challenges of modernizing

education, where transparency and accuracy in data management are essential.

Madrasah Tsanawiyah (MTs) Arrukhshatul'ulum, located in Cangkorah Village, Batujajar District, West Bandung Regency, faces similar challenges. Cangkorah Village is a lowland area surrounded by rice fields and crossed by a branch of the Citarum River, which is one of the village's main geographical features. Although it is not far from the district center, internet access in Cangkorah Village is often unstable. This condition frequently poses challenges for the madrasah in managing an information system that relies heavily on internet connectivity (Anggraini & Aprilliana, 2019; Donkoh et al., 2023; Lim et al., 2023; Souza & Debs, 2024; Subarkah & Salim, 2021).

Previous studies have extensively discussed the implementation of Management Information Systems (MIS) in educational institutions. However, most studies focus on the technical aspects of using MIS without considering the specific challenges faced by MTs in rural areas with limited technological infrastructure. Some studies, such as those conducted by (Nurhikmah, Yuspiani, 2024), highlight the importance of internet access in the effectiveness of MIS but do not specifically explore the adaptation strategies employed by madrasah operators in infrastructure-limited conditions. Additionally, while a report from the Ministry of Religious Affairs (Ramadani et al., 2023) indicates that 40% of schools in rural areas experience delays in reporting due to infrastructure challenges, research on concrete solutions in this context remains limited.

Furthermore, studies related to the role of MIS operators in MTs are still scarce. Most

research focuses more on the system's effectiveness rather than the experience of operators in running the system amid technical limitations and insufficient training (Tamphu, Suyitno, Susanto, Budiana, Salim, et al., 2024). Therefore, this study aims to fill this gap by examining the experiences of MIS operators in greater depth and identifying adaptation patterns that can be implemented by other madrasahs facing similar conditions.

Recording in the world of education is very important in addition to maintaining important data, this is also included in the orders of God in the Koran which requires setting data fairly and in accordance with the rules that apply between mumalah between humans and muamalah between Gods, this is confirmed in the Koran in surah an-nisa verse 58:

﴿إِنَّ اللَّهَ يَأْمُرُكُمْ أَنْ تُؤَدُّوا الْأَمَانَاتِ إِلَىٰ أَهْلِهَا وَإِذَا حَكَمْتُمْ بَيْنَ النَّاسِ أَنْ تَحْكُمُوا بِالْعَدْلِ إِنَّ اللَّهَ نِعِمَّا يَعِظُكُمْ بِهِ إِنَّ اللَّهَ كَانَ سَمِيعًا بَصِيرًا (٥٨)﴾

Meaning: Indeed, Allah has enjoined you to deliver the trust to those who are entitled to it, and when you make judgement among men you should make it justly. Indeed, Allah is the best of those who instruct you. Indeed, Allah is All-Hearing, All-Seeing.

MTs Arrukhshatul'ulum manages several types of Management Information Systems (MIS) mandated by the Ministry of Religious Affairs, including SIMPATIKA (Madrasah Educator and Education Personnel Information System), SIM-SARPRAS (Facilities and Infrastructure Information System), EMIS (Education Management Information System), and RDM (Madrasah Digital Report System).

SIMPATIKA is used to record teachers and staff, track employment history, and support allowance reporting. SIM-SARPRAS helps document and monitor madrasah assets, such as buildings, classrooms, and educational tools. Meanwhile, EMIS serves as the primary platform for reporting student and teacher data at the national level, and RDM facilitates teachers in entering grades and printing student report cards.

With good cooperation and support between staff and teachers can make success easier to achieve because data problems are very important and there must be cooperation and support between members in order to make common goals successful. This is very

appropriate if we stick to the applicable laws and the guidance of the Koran as stated in surah an-nisa verse 59:

يَا أَيُّهَا الَّذِينَ آمَنُوا أَطِيعُوا اللَّهَ وَأَطِيعُوا الرَّسُولَ وَأُولِي الْأَمْرِ مِنْكُمْ فَإِن تَنَازَعْتُمْ فِي شَيْءٍ فَرُدُّوهُ إِلَى اللَّهِ وَالرَّسُولِ إِن كُنتُمْ تُؤْمِنُونَ بِاللَّهِ وَالْيَوْمِ الْآخِرِ ۚ ذَٰلِكَ خَيْرٌ وَأَحْسَنُ تَأْوِيلًا (٥٩)

Meaning: O you who believe! Obey Allah and obey the Messenger (Muhammad), and the Ulil Amri (those in authority)1 among you. Then, if you differ in opinion about anything, then refer it back to Allah (the Qur'an) and the Messenger (his Sunnah), if you believe in Allah and the Last Day. That is better for you and more beneficial.

The successful implementation of MIS heavily relies on the role of operators as the main technical executors (Astuti et al., 2020). D At MTs Arrukhshatul'ulum, MIS operators are responsible for ensuring the smooth operation of the system while assisting other users, such as teachers and staff, who may have limited digital literacy (Mardina, 2017; Muliastri, 2019; Sagala et al., 2024). One of the biggest challenges is the inconsistent internet access. Operators often have to stay up late or find locations with a better signal to ensure data synchronization, particularly for EMIS. This phenomenon reflects the general condition of many rural madrasahs in Indonesia. According to a Ministry of Religious Affairs report (Basri, 2018), 40% of madrasahs in rural areas experience reporting delays due to infrastructure constraints.

Apart from internet issues, MIS operators at MTs Arrukhshatul'ulum also face a lack of technical training. Most operators learn independently through trial and error, without continuous official training. As a result, their system proficiency remains suboptimal, leading to irregular updates in SIM-SARPRAS, particularly in asset inventory. Accurate data is crucial for audits and government assistance applications, but the lack of structured training limits effective data management.

Another challenge is disproportionate workloads (Wahyudin, 2020). MIS operators are not only responsible for managing MIS but are often assigned additional tasks, such as handling general administration or assisting with school activities. This increases work pressure and reduces their focus on primary tasks, ultimately affecting the quality of data management.

Without strong management support, MIS operators will continue to struggle in performing their duties effectively.

This situation highlights the need for more structured support for MIS implementation at MTs Arrukhshatul'ulum. The madrasah principal must ensure that operators receive adequate training, more stable internet access, and proportional task distribution. In addition, collaborating with local internet service providers could be a potential solution to improve network quality within the madrasah environment.

These challenges are common among many rural madrasahs in Indonesia (Nurbaeti, 2023; Rizkiyah, 2022; Syahputra, 2020; Unique, 2023; Yuniarto & Yudha, 2021). However, with the right strategies, such as budget allocation for technology training, adequate infrastructure provision, and structured task management for operators, madrasahs can maximize MIS to support modern and transparent education governance.

This approach will not only enhance data management but also improve the quality of educational services for students, teachers, and the wider community.

Method

This study employed a descriptive qualitative method with a case study approach (Adlini et al., 2022; Fitrah, 2018; Yin, 2012). The case study approach was suitable for exploring phenomena in depth within a specific context. In this case, MTs Arrukhshatul'ulum was selected as the study site to examine the dynamics of Management Information System (MIS) management, particularly from the perspective of MIS operators. The qualitative method was used to provide a comprehensive understanding of the operators' experiences, the challenges they face, and how they manage various types of MIS implemented in the madrasah. This approach enables researchers to capture nuances and contextual realities that may be difficult to explain using numerical or statistical data.

This descriptive study aims to present a detailed depiction of the phenomenon, specifically how MIS operators in the madrasah carry out their duties despite various limitations. This approach is relevant for research seeking to explore complex cause-and-effect relationships,

such as the link between operator competence, available infrastructure, and system effectiveness. Through this approach, the study aims to identify patterns and relevant solutions to optimize MIS implementation in the madrasah.

The study is conducted at Madrasah Tsanawiyah (MTs) Arrukhshatul'ulum, located in Kp. Sampih Manggu RT/RW 003/011, Cangkorah Village, Batujajar District, West Bandung Regency. Cangkorah Village is an area dominated by rice fields and a branch of the Citarum River, with relatively adequate road access, although internet connectivity remains a challenge. The location was chosen because MTs Arrukhshatul'ulum faces common challenges found in rural madrasahs, such as limited technological infrastructure and inadequate training for MIS management staff.

Although Cangkorah Village is not geographically isolated, its unstable internet connectivity poses a significant issue that directly affects MIS management. This situation provides a relevant context for examining how operators manage systems requiring real-time data synchronization, such as EMIS and SIMPATIKA. The study is expected to provide real-world insights into the challenges and opportunities faced by madrasahs in adopting information technology in rural areas.

The research subjects consist of three groups: MIS Operators (2 individuals) – The primary actors responsible for managing the system, including data input, processing, and reporting. Madrasah Principal (1 individual) – Involved to explore managerial perspectives, such as policy support and resource allocation for operators. Teachers and Administrative Staff (5 individuals) – Included to understand their interactions with the MIS and operators, particularly in using systems like RDM and SIMPATIKA.

In qualitative research, subjects are selected purposively, ensuring that they possess relevant experience with the research topic. In this study, all selected participants have direct roles and experiences in using and managing MIS, allowing them to provide rich and meaningful data for the research.

Data collection is conducted through in-depth interviews and observations (Wanto, 2018). Wawancara bertujuan mengeksplorasi kompetensi operator SIM, jenis SIM yang dikelola, serta tantangan yang mereka hadapi. Wawancara semi-terstruktur digunakan agar

peneliti dapat menggali informasi secara mendalam sekaligus memberikan ruang bagi subjek untuk berbagi pengalaman mereka secara bebas. Selain itu, observasi dilakukan untuk memantau aktivitas operator secara langsung, termasuk bagaimana mereka menggunakan sistem, menyelesaikan tugas sehari-hari, dan mengatasi kendala teknis. Observasi ini memberikan perspektif yang lebih holistik karena memungkinkan peneliti melihat dinamika kerja operator dalam situasi nyata. Kemudian data yang diperoleh dianalisis menggunakan metode analisis tematik (Antika et al., 2022), which aims to identify key patterns and themes from the qualitative data. Thematic analysis involves several steps: Familiarizing with the data. Coding the data. Identifying themes. Interpreting findings (Creswell, 2010). In this study, thematic analysis is used to understand the relationship between operator competence, the challenges they face, and the effectiveness of MIS management.

Results and Discussion

Results

Madrasah Tsanawiyah (MTs) Arrukhshatul'ulum utilizes four main Management Information Systems (MIS): SIMPATIKA, SIM-SARPRAS, EMIS, and RDM. These systems are designed to support the integrated administration of the madrasah, from recording educational staff data to managing student grades.

Based on an interview with Cahyani Puji Astuti, S.Pd.I, the head of the madrasah, SIMPATIKA and SIM-SARPRAS are the top priorities as they are directly related to the recording of educational staff and infrastructure data.

She stated:

"We rely heavily on SIMPATIKA to ensure teachers' rights, especially regarding certification. SIM-SARPRAS is also important to ensure that all madrasah facilities are recorded and accounted for."

SIMPATIKA (*Sistem Informasi Pendidik dan Tenaga Kependidikan Madrasah*) is a system used to record teacher history, certification, and performance reporting. The SIM operator, Fahru Ni'mat, S.Pd.I, is responsible for ensuring that

teacher data is always up to date. However, he noted that the use of SIMPATIKA is often hindered by a lack of user understanding. According to the interview, he stated:

"We often have to assist teachers who forget how to access their accounts, especially during the allowance reporting period."

This highlights the need for improved technological literacy among system users.

Meanwhile, SIM-SARPRAS (*Sistem Informasi Sarana dan Prasarana*) is used to record and monitor the madrasah's inventory, such as classrooms, laboratory equipment, and other supporting facilities. In an interview, Fahru explained that this system greatly helps in organizing infrastructure data, especially for audit purposes or when applying for government facility assistance. However, he also mentioned that the lack of training prevents the advanced features of SIM-SARPRAS from being fully utilized:

"Sometimes, we only use the basic features for recording data, even though the system can actually generate automatic reports."

EMIS (Education Management Information System) serves as the core system for reporting student and teacher data to the Ministry of Religious Affairs. This system is managed by Ririn Nurdiantini, who acknowledges EMIS's importance in ensuring that madrasah data is accurately transmitted to the national level. As she stated in the interview:

"Whenever there are changes in student or teacher data, I must update them in EMIS immediately to avoid issues with central reporting."

However, she also highlighted the challenge of data synchronization, which is often hindered by slow internet connectivity.

The final system is RDM (*Rapor Digital Madrasah*), which is designed to facilitate teachers in recording student grades and generating report cards. Based on an interview with teacher Ridwan Adi Wiguna, S.Pd.I, this system significantly helps accelerate the evaluation of student learning outcomes. However, some teachers still struggle to

understand how it works, frequently seeking help from the operator.

"Every semester, I always ask Ririn to guide me in entering grades in RDM. I think this system is useful, but it's quite complicated to understand."

This situation indicates that while MIS simplifies administrative processes, there remains a significant need for improved digital literacy among users.

The SIM operators at MTs Arrukhshatul'ulum possess basic technical competencies to carry out their primary tasks but still face challenges in mastering the advanced features of the systems. Fahru Ni'mat, S.Pd.I, the operator for SIMPATIKA and SIM-SARPRAS, stated that he is proficient in inputting teacher data and managing facility inventories. However, he lacks confidence in using advanced features such as generating automatic reports.

"I often use manual features because they are more familiar, even though they take more time."

This indicates that a lack of training is a major obstacle preventing operators from fully utilizing the MIS capabilities.

Ririn Nurdiantini, the operator of EMIS and RDM, also faces similar issues. She feels confident in entering routine data but requires more time to complete tasks involving analysis or specialized reports.

"Sometimes, I feel that this task is too technical, especially when the report format changes and I have to adjust again."

This experience underscores the importance of continuous training focused on the specific features of each system.

Managerial competency is also a challenge. According to Cahyani Puji Astuti, S.Pd.I, the head of the madrasah, operators need better managerial skills to support data-driven decision-making.

"The data they manage is crucial, but if they don't know how to process it into meaningful reports, the data becomes less useful."

This suggests that training should not only focus on technical aspects but also on data analysis and report preparation.

In terms of communication, operators have demonstrated sufficient competence in assisting other users, such as teachers. However, they often have to repeatedly explain the same steps to users who struggle with the system. This aligns with Ririn's statement:

"Every semester, there are teachers who forget the steps to enter grades in RDM. I have to guide them from the beginning again."

This situation indicates that the digital literacy of other users also affects the workload of the operators.

Overall, while the operators' competency is sufficient for basic tasks, structured training is essential for capacity building. With enhanced skills, operators can better utilize the advanced features of the MIS, support improved decision-making, and reduce their workload.

The main challenge in managing MIS at MTs Arrukhshatul'ulum is the lack of access to technology training. Based on an interview with Fahru Ni'mat, training provided by the Ministry of Religious Affairs is often limited to initial socialization and does not include ongoing mentoring.

"We were only taught the basics of using the system, but after that, we had to learn on our own."

This has led to operators lacking confidence in using certain features that require deeper technical understanding.

Insufficient technological infrastructure is also a significant obstacle. Internet connectivity in Desa Cangkorah is often slow or even disconnected during peak hours. Ririn Nurdiantini mentioned that she frequently has to wait until nighttime to ensure successful data synchronization.

"When the internet is slow, our work gets delayed, even though reporting deadlines cannot be changed."

This issue was also raised by teacher Noviyanti, S.Pd.I, who felt that system slowdowns often hinder academic tasks.

An unbalanced workload for operators is another challenge that needs to be addressed. Cahyani Puji Astuti acknowledged that staff limitations often result in operators being assigned additional tasks beyond managing the MIS.

"We realize this is not ideal, but we have limited staff, so operators also have to assist in other areas."

As a result, operators often lose focus on their primary duties, ultimately affecting the quality of MIS management.

The issue of digital literacy among system users is also a significant challenge. Teachers like Ridwan Adi Wiguna, S.Pd.I, admitted that they often struggle to understand how systems like RDM work.

"I have to ask the operator multiple times because I'm afraid of entering the wrong data."

This situation highlights the need to improve technological literacy among teachers to reduce the operators' workload.

To address these challenges, strategic steps such as continuous training, infrastructure improvement, and workload adjustments for operators are necessary. Support from the madrasah head and relevant authorities is crucial to ensuring that MIS management can run more effectively.

Discussion

A Management Information System (MIS) is a collection of hardware, software, personnel, procedures, and data designed to integrate information management within an organization (Agustian & Salsabila, 2021; Anggraini & Aprilliana, 2019; Putri et al., 2021). MIS helps organizations manage data, analyze information, and support both strategic and operational decision-making. In the educational context, MIS plays a crucial role in enhancing the efficiency and accuracy of administrative and academic management (Lu'lun Najwa, Muhammad Suhardi, 2023). In madrasahs, MIS is not merely a tool for organizing data but also an integral part of modernizing Islamic educational institutions (Al Ayyubi et al., 2024; Murharyana et al., 2023; Mutaqin et al., 2024; Pancawardana et al., 2023; Sabarudin et al., 2023). It facilitates various aspects of

management, including student administration, class schedules, grading, and reporting data to government authorities through systems such as EMIS. Additionally, MIS enhances transparency, particularly in financial management, such as BOS fund allocation. With MIS, madrasah principals can make faster and more accurate decisions based on real-time data. This aligns with perspectives suggesting that MIS provides a competitive advantage by ensuring decisions are based on valid and relevant data (Liam et al., 2023).

However, the implementation of MIS in madrasahs is not without challenges. Inadequate technological infrastructure, especially in rural areas, poses a significant barrier (Azhar et al., 2023; Hidayat, 2023; Mukhsin, 2020; Sigiro et al., 2022; Unique, 2023). For instance, at MTs Arrukhshatul'ulum, slow internet connectivity often disrupts data synchronization with central servers. Additionally, limited technological literacy among madrasah staff prevents the optimal utilization of MIS. This phenomenon reflects the assertion that low digital literacy in rural educational institutions hampers the overall digitalization of the education system.

Thus, effective MIS implementation requires support from various stakeholders, including the government, madrasah administrators, and system operators. This support includes continuous training, provision of technological infrastructure, and data-driven management policies. With a structured approach, MIS can serve as a fundamental pillar in fostering a more modern and adaptive Islamic education system. MIS operators play a central role in madrasah information system management. As key technical managers, operators are responsible for data input, processing, and reporting. Their competence significantly determines the success of MIS implementation in madrasahs. Technical, managerial, and communication skills are the three main pillars required for individuals managing information systems.

Technical competence includes the ability to operate hardware and software used in MIS. At MTs Arrukhshatul'ulum, operators must master platforms such as SIMPATIKA, EMIS, SIM-SARPRAS, and RDM. They are responsible for ensuring that data entered into the system is accurate and complies with established standards. Without sufficient technical skills, operators may struggle with

their tasks, ultimately affecting the quality of reported data. Managerial competence is equally important. MIS operators must be able to compile reports, maintain data accuracy, and coordinate with other stakeholders in the madrasah, such as principals, teachers, and administrative staff. Time management and prioritization skills are crucial, especially when facing tight reporting deadlines. Strong managerial skills enable operators to maximize limited resources efficiently.

Additionally, communication skills are a vital element (Agustian & Salsabila, 2021; Lestari & Masyithoh, 2023; Partono et al., 2021). MIS operators must effectively convey information to system users, such as teachers needing assistance with RDM or principals requiring financial reports from SIM-SARPRAS. Good communication skills help operators build cooperative working relationships and ensure all parties understand the system's functions. Without effective communication, minor technical obstacles can escalate into major issues that hinder the smooth operation of MIS.

MIS management in madrasahs faces complex challenges, particularly in rural areas like Desa Cangkorah. The first challenge is low technological literacy among madrasah staff. Most staff members, including teachers and administrative personnel, are not accustomed to using information technology in their work. At MTs Arrukhshatul'ulum, MIS operators often have to train teachers who struggle with RDM for entering student grades. This situation highlights the fact that in developing countries, inadequate technology training is a primary obstacle to digital transformation in education (Kim et al., 2020; Malik, 2018; Setiyadi et al., 2021). The second challenge is insufficient technological infrastructure (Hendek, 2022; Setiadi et al., 2023; Zainiyati, 2018). Although Desa Cangkorah is not geographically isolated, its internet connectivity remains unstable, often delaying data synchronization in systems like EMIS and SIM-SARPRAS.

Another challenge is the workload burden on operators. At MTs Arrukhshatul'ulum, operators are not only responsible for managing MIS but are also frequently assigned additional tasks outside the system, such as assisting with general administration or supporting school activities. This situation distracts operators from their primary responsibilities (Tamphu, Suyitno, Susanto, Budiana, & Salim, 2024). Excessive

workload can lead to job stress, negatively impacting productivity and output quality (Al-Ahmadi et al., 2020; Hölscher et al., 2024; Usman et al., 2020). To overcome these challenges, madrasahs must implement strategic measures. Continuous technology training is one of the primary solutions for improving technological literacy among staff. Additionally, madrasahs must ensure that technological infrastructure, such as internet access, is adequate to support MIS operations. Support from the madrasah principal is also crucial in managing operators' workloads to ensure a balanced distribution of responsibilities. With a holistic approach, challenges in MIS management can be minimized, enabling madrasahs to function more effectively.

Conclusion

This study concludes that the management of the Management Information System (MIS) plays a crucial role in supporting the governance of madrasahs. Systems such as SIMPATIKA, SIM-SARPRAS, EMIS, and RDM serve as primary tools that help madrasahs efficiently manage data, ranging from recording educational personnel and infrastructure to academic and administrative reporting. However, the successful implementation of these systems highly depends on the competence of the operators and the availability of adequate infrastructure.

The MIS operators at this madrasah, Fahru Ni'mat, S.Pd.I, and Ririn Nurdiantini, possess basic technical competencies sufficient to perform their primary tasks. However, the lack of continuous training hinders their mastery of advanced system features. This limitation forces operators to exert extra effort in completing tasks that could otherwise be simplified by utilizing existing system features. Moreover, managerial and data analysis competencies need improvement, as the data processed by operators significantly impact decision-making within the madrasah.

Challenges in MIS management include limited access to technology training, inadequate infrastructure such as slow internet connections and disproportionate operator workloads. The low digital literacy among teachers further adds to the burden on operators, as they frequently assist teachers in using systems like RDM. These

challenges not only affect the efficiency of MIS management but also hinder the overall smooth operation of the madrasah. From a managerial perspective, the support of the madrasah principal, Cahyani Puji Astuti, S.Pd.I, is a key factor in the successful implementation of MIS. Policies that prioritize strengthening operator capacity, improving infrastructure, and distributing workloads more proportionally can help operators perform their roles more effectively. Additionally, enhanced collaboration between operators, teachers, and the management team is essential to ensure an integrated system.

To improve the effectiveness of MIS management, strategic steps such as regular training tailored to specific system needs, upgrading technological infrastructure, and ensuring a fairer workload distribution are necessary. With sufficient support, the MIS at MTs Arrukhshatul'ulum can serve not only as a tool for administrative management but also as an instrument to enhance the quality of education for students, teachers, and the entire madrasah community. This study reaffirms that MIS management is not solely about technology but also about empowering and supporting the people behind the system to make their best contributions.

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