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Management Information Systems in Decision Making in Elementary Schools

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Abstract

This study explores the implementation of a management information system (MIS) and its role in decision-making at SD Inpres 10/73 Watang Palakka. Utilizing a qualitative descriptive approach, data were collected through observation, interviews, and documentation. The findings reveal that the school has adopted a digital-based MIS, particularly through the DAPODIK platform, which enables efficient management of student and staff data. Despite some manual processes persisting—such as attendance tracking and certain assessment procedures—the digital system significantly supports school operations. The MIS has facilitated more accurate performance evaluations, streamlined report preparation, and enhanced administrative decisions, particularly during the challenges of the COVID-19 pandemic. However, limitations such as unstable internet connectivity still hinder optimal performance. Overall, the MIS contributes positively to improving the school's operational effectiveness and supports strategic decision-making by providing timely and accessible information.

Keywords: management information system, decision-making, education technology

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INTRODUCTION

The rapid advancement of science and technology in the era of globalization has significantly transformed the way information is produced, accessed, and utilized. This transformation has triggered a societal dependence on digital media, especially in the field of education. Information is now considered a basic necessity, akin to food, clothing, and shelter, and can be accessed at any time and from any location via the internet, print media, and television (Laudon & Laudon, 2021). In this digital age, computers play a vital role in delivering accurate and efficient information services, which are essential for decision-making in educational institutions.

In schools, particularly in primary education settings, the use of information systems has become integral to the administration and management of learning processes. Management Information Systems (MIS) serve as a structured mechanism for collecting, processing, storing, and disseminating information that supports decision-making and organizational functions (O'Brien & Marakas, 2011). When properly implemented, MIS can improve transparency, streamline administrative workflows, and support data-driven decisions.

SD Inpres 10/73 Watang Palakka, a public elementary school in Indonesia, has implemented a digital MIS through the national DAPODIK (Data Pokok Pendidikan) platform. DAPODIK serves as a centralized database system designed by the Ministry of Education to manage essential school data, including student enrollment, teacher credentials, and infrastructure information (Kemendikbud, 2020). The adoption of DAPODIK at the school aims to enhance the effectiveness and accountability of school management practices.

Preliminary observations at SD Inpres 10/73 indicate that digital systems have been integrated into several key administrative functions, such as attendance tracking, report card generation, and staff performance assessments. However, manual processes remain in use for certain activities, which may hinder the full optimization of the MIS. For example, attendance is recorded both digitally and manually to allow cross-validation, highlighting the transition phase in digital integration within the school (Nelinda, 2018).

Moreover, the COVID-19 pandemic has emphasized the importance of digital systems in ensuring the continuity of educational services. The school utilized a combination of online platforms such as WhatsApp and Zoom to deliver lessons remotely, despite facing infrastructure limitations, including inadequate access to mobile devices among students and unstable internet connectivity (Setiawan & Aryanti, 2020). These constraints underscored the digital divide in primary education, particularly in rural areas.

Leadership plays a crucial role in the successful implementation and utilization of MIS in schools. At SD Inpres 10/73, the principal appointed a trained operator responsible for managing and updating the DAPODIK database. This human resource investment reflects the school's commitment to professionalizing its data management practices (Machmud, 2016). The operator had received formal training and was proficient in using information systems to support daily operations.

Despite positive strides in digital transformation, challenges persist. Inconsistent internet access and limited technical support remain significant barriers to optimal MIS functionality. Additionally, the underutilization of certain digital tools such as the school's website suggests a need for capacity building and continuous monitoring to ensure sustainable system performance (Yusri & Goodwin, 2013).

In light of these issues, this study aims to explore the implementation of MIS and its influence on decision-making processes at SD Inpres 10/73 Watang Palakka. By examining the current practices, challenges, and benefits associated with MIS usage, the research seeks to provide insights into how primary schools can effectively integrate technology to enhance administrative efficiency and educational quality.

The findings of this study are expected to contribute to the broader discourse on digital transformation in education, particularly in the context of elementary schools in developing regions. It also offers practical recommendations for school leaders and policymakers to optimize the potential of MIS for improved school governance and service delivery.

METHOD

This study employed a qualitative descriptive research design to explore the implementation of Management Information Systems (MIS) and their role in decision-making processes at SD Inpres 10/73 Watang Palakka. The qualitative approach was chosen to allow an in-depth understanding of the experiences, perceptions, and practices of the school's leadership and staff regarding the use of digital information systems. A descriptive method was particularly appropriate for capturing the actual conditions, processes, and challenges in integrating MIS within the school's administrative and academic functions.

Data collection was conducted through three primary techniques: observation, interviews, and document analysis. Observations were made to understand the actual utilization of the MIS tools in daily school operations. Semi-structured interviews were carried out with key informants including the school principal, the MIS operator, and teaching staff to gather rich narrative data on their roles, system usage, and perceptions. Additionally, relevant documents such as school attendance records, performance assessments, and digital applications (e.g., DAPODIK and reporting tools) were reviewed to triangulate findings and ensure validity.

The data analysis process followed Miles and Huberman's (1994) model, which includes data reduction, data display, and conclusion drawing/verification. During data reduction, relevant information was selected, simplified, and organized. Data were then presented in an organized form to facilitate interpretation and identification of emerging patterns. Finally, conclusions were drawn and verified by cross-checking the findings from different data sources. This rigorous process ensured the credibility and trustworthiness of the qualitative results.

RESULTS AND DISCUSSION

Results

The findings of this study indicate that SD Inpres 10/73 Watang Palakka has made significant progress in implementing a digital Management Information System (MIS) for school administration. The system primarily utilizes DAPODIK (Data Pokok Pendidikan), a national education database developed by the Ministry of Education in Indonesia. This

system integrates student, teacher, and administrative data into a single digital platform that allows for efficient management and accessibility.

Based on interviews with the school principal and MIS operator, the management of educational data has transitioned from manual to digital. The principal emphasized that all administrative records, including student enrollment, teacher profiles, and performance data, are now stored and processed digitally. The presence of a trained school operator has been critical in maintaining the system, as this individual is responsible for inputting and updating all school data in DAPODIK.

The MIS has also streamlined the attendance process for both educators and staff. While the school employs both manual and digital attendance records, this hybrid approach allows for cross-verification of absences and ensures data accuracy. This redundancy has been particularly useful in resolving discrepancies and ensuring the reliability of records.

Performance assessment of teachers and education staff is another area that has benefited from the use of MIS. Initially, the assessment data is collected manually using standardized instruments. The information is then processed using digital applications such as the PKG (Penilaian Kinerja Guru) system. This process has improved the efficiency and objectivity of staff evaluations and enables the leadership to make more informed decisions.

During the COVID-19 pandemic, the MIS also played a key role in supporting remote learning. Teachers utilized digital communication platforms such as WhatsApp and Zoom to facilitate online classes. However, limited access to digital devices and internet connectivity among students, especially in rural areas, posed significant challenges. To address this, the school implemented a blended approach combining online teaching with offline assignments delivered directly to students' homes.

In terms of academic reporting, the school has adopted a digital system for compiling student grades and generating report cards. A specific application, referred to as "aplikasi rapor," is used for data entry and automatically generates student performance descriptions. This system has simplified the grading process and reduced the workload for teachers, while maintaining the documentation in both digital and printed formats for record-keeping.

The school's website was initially developed to serve as a communication tool with parents and the broader community. However, due to pandemic-related disruptions and limited maintenance, the site has become inactive. This indicates an area for improvement in ensuring consistent engagement and technological sustainability beyond the core MIS functions.

Despite the successful implementation of MIS in various areas, the school continues to face infrastructure challenges. Internet access remains unstable, which occasionally hampers real-time data input and retrieval. Nevertheless, stakeholders reported that the MIS has improved the speed and accuracy of school services, especially in accessing student data, preparing reports, and managing administrative requests.

Overall, the use of MIS has enhanced decision-making capabilities at SD Inpres 10/73 Watang Palakka. According to the principal, the system enables a more comprehensive view of the school's strengths and weaknesses. It allows school leaders to develop policies and take action based on up-to-date and reliable information. The system supports transparency, efficiency, and accountability in school governance, and holds great potential for continued development in line with technological advancements in education.

Discussion

The findings of this study underscore the critical role of Management Information Systems (MIS) in enhancing administrative efficiency and supporting decision-making in primary education. The integration of DAPODIK at SD Inpres 10/73 Watang Palakka demonstrates how centralized data management can streamline various school operations. This supports previous research indicating that digital MIS can significantly improve the quality of education administration by enabling real-time data processing and accessibility (Laudon & Laudon, 2021).

One of the most notable outcomes of MIS implementation in this school is the transition from manual to digital data management. The appointment of a trained operator reflects best practices in human resource allocation for digital systems. As Machmud (2016) noted, the success of MIS in any public institution heavily depends on the competency of

personnel responsible for system operation. By assigning a qualified individual to manage the system, the school ensures both reliability and continuity of digital practices.

The dual system for attendance monitoring, combining manual and digital tracking, presents an adaptive approach to validation. This mirrors findings by Yusri and Goodwin (2013), who emphasized the importance of redundancy in digital transformation in rural settings, where technological limitations remain prevalent. Such measures help mitigate data discrepancies and improve the accuracy of records used for administrative decisions.

In the area of teacher performance assessment, the use of both traditional instruments and digital applications such as PKG highlights a gradual but strategic integration of technology in HR evaluation. This approach aligns with the principle that MIS should complement rather than abruptly replace existing evaluation frameworks (O'Brien & Marakas, 2011). The hybrid model allows for a smooth transition and greater acceptance among staff.

The role of MIS became particularly significant during the COVID-19 pandemic, where digital tools facilitated the continuity of learning. However, digital inequities were also exposed, especially among primary school students who lacked access to devices or stable internet connections. Setiawan and Aryanti (2020) argued that socio-economic disparities play a critical role in the success of remote learning programs, and this case study supports that view. The school's blended learning approach—combining online interaction with printed materials—represents a context-sensitive adaptation to such challenges.

Regarding academic reporting, the adoption of digital report card applications exemplifies how MIS can simplify teacher workloads while maintaining student data integrity. These systems also reduce clerical errors and ensure consistency across assessment records. As emphasized by Davis and Olson (1985), information systems in education should not only support data storage but also facilitate interpretation and strategic use of data in pedagogy.

However, the underutilization of the school's website during the pandemic reflects an area where MIS infrastructure fell short. This case reveals the need for consistent maintenance and digital literacy support to ensure that all communication channels function

effectively. According to Laudon and Laudon (2021), MIS infrastructure should be scalable and adaptable to dynamic institutional needs, including crisis communication.

Network limitations and connectivity issues remain persistent challenges. Although such barriers are common in rural education settings, they undermine the potential of digital MIS. This finding supports the argument by Yusri and Goodwin (2013) that investment in digital infrastructure must be accompanied by policy-level support to ensure equitable access across regions. Without reliable internet, the benefits of digital MIS cannot be fully realized.

Ultimately, the study confirms that MIS not only supports administrative functions but also contributes to leadership and policy decisions. By offering comprehensive data visibility, the system enables school leaders to make informed judgments, identify areas for improvement, and allocate resources more effectively. These findings are consistent with research by O'Brien and Marakas (2011), who emphasized the strategic value of MIS in educational leadership and governance.

CONCLUSION

This study highlights the significant role of Management Information Systems (MIS) in supporting school administration and decision-making at SD Inpres 10/73 Watang Palakka. The integration of DAPODIK and other digital tools has streamlined various functions, including data management, attendance tracking, performance evaluation, and academic reporting. The findings demonstrate that even in resource-constrained environments, digital MIS can enhance operational efficiency, data accuracy, and policy formulation when supported by trained personnel and leadership commitment.

Despite these achievements, challenges such as inconsistent internet connectivity, limited access to digital devices among students, and the underutilization of communication platforms remain. These issues underscore the need for ongoing infrastructure development and capacity building to ensure the sustainability and scalability of MIS implementation. Addressing these barriers is crucial to maximizing the impact of digital systems on educational quality and institutional accountability.

Overall, MIS has proven to be a valuable asset for school governance, enabling data-driven decisions and fostering transparency. The experience of SD Inpres 10/73 Watang Palakka serves as a practical example of how primary schools in developing regions can leverage technology to improve management processes. Future initiatives should focus on expanding digital literacy, strengthening system infrastructure, and integrating MIS into broader educational policy frameworks to ensure long-term effectiveness and equity.

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