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STRATEGIES FOR OVERCOMING BARRIERS TO THE DIGITALIZATION OF MANAGEMENT INFORMATION SYSTEMS IN EDUCATIONAL INSTITUTIONS

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Abstract

This study aims to identify the barriers to the digitalization of Management Information Systems in educational institutions and analyze strategies that can be implemented to overcome these challenges. The digitalization of Management Information Systems plays an important role in improving the effectiveness, efficiency, transparency, and quality of educational services. However, its implementation still faces several obstacles, including limited technological infrastructure, inadequate human resource competencies, budget constraints, data security risks, and insufficient organizational readiness. This study employs a library research method by collecting and analyzing information from books, scientific journal articles, and other relevant literature. The data are analyzed using a qualitative descriptive approach through information classification, interpretation, and conclusion drawing. The findings indicate that strategies for overcoming digitalization barriers include improving technological infrastructure, providing training and assistance for human resources, implementing effective budget planning, strengthening data security, ensuring leadership support, and conducting regular system evaluations. The systematic and sustainable implementation of these strategies can help educational institutions optimize the use of Management Information Systems to support administrative management, decision-making, and improvements in the quality of educational services.

Keywords*: digitalization, Management Information Systems, technological barriers, strategies, educational institutions.*

INTRODUCTION

Developments in information and communication technology have brought major changes to many areas of life, including the management of educational institutions. Digitalization has become an important effort to improve the effectiveness, efficiency, transparency, and quality of educational services. Through the implementation of Management Information Systems (MIS), educational institutions can manage administrative activities, student data, academic information, finances, and human resources in a more structured and integrated way (Rahman & Prabowo, 2025).

The use of digital systems is expected to make decision-making easier, speed up the delivery of information, and reduce errors in data processing. The digitalization of Management Information Systems is therefore an increasingly important need for educational institutions in facing the demands of the times and of quality educational services.

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Nevertheless, Safitri et al. (2024) note that the digitalization of Management Information Systems in educational institutions still faces various barriers that can affect the success of its implementation.

The phenomenon observed shows that not all educational institutions have the same readiness to use digital technology. Limited facilities and infrastructure, inadequate internet connections, insufficient human resource skills in operating systems, limited budgets, and low readiness to accept change are among the problems that need attention. In addition, data security problems and a lack of system maintenance can also hinder the digitalization process.

These conditions show that the successful implementation of Management Information Systems depends not only on the availability of technology but also on organizational readiness, the competence of educators and education staff, and policy support from the managers of educational institutions. Given these problems, appropriate strategies are needed to overcome the various barriers to the digitalization of Management Information Systems so that implementation can run optimally and sustainably. Possible strategies include improving human resource competence through training, providing adequate technological infrastructure, strengthening data security, formulating policies that support digital transformation, and evaluating the system regularly (Suharti & Mariam, 2025).

In addition, the involvement of principals, educators, education staff, students, and other related parties is needed to build a work culture that adapts to technological developments. Such efforts are expected to reduce gaps in the use of technology while improving the ability of educational institutions to manage information effectively and efficiently. Accordingly, Safitri et al. (2024) argue that strategies for overcoming digitalization barriers need to be designed systematically, taking into account the needs, capabilities, and conditions of each educational institution.

Based on this background, this article focuses on what forms of barriers educational institutions face in implementing the digitalization of Management Information Systems, what factors cause these barriers to arise, and what strategies can be applied to overcome them. In line with this problem formulation, the purpose of this article is to identify the various barriers to implementing the digitalization of Management Information Systems, analyze the factors that influence the success of its implementation, and explain the strategies that can be used to optimize the use of information systems in the management of educational institutions. The results of this discussion are expected to serve as a consideration for managers of educational institutions in planning and carrying out digital transformation in a directed manner, so as to support improvements in the quality of educational management and services.

METHODS

This study uses a *library research* method, that is, a research method carried out by collecting, reading, examining, and analyzing various literature sources relevant to strategies for overcoming barriers to the digitalization of Management Information Systems in educational institutions. This method was chosen because it is suitable for gaining an in-depth understanding of the various barriers to implementing digital technology and the strategies that can be used to overcome them. The data sources in this study come from books, scientific journal articles, previous research findings, and other literature that discusses educational digitalization, Management Information Systems, the management of educational institutions, and digital transformation (Nurdiansyah et al., 2026).

Data were collected by searching for and documenting various literature related to the focus of the study. The collected literature was then selected based on the relevance of its discussion, the credibility of the source, and its connection to the purpose of the article. The data collection process focused on information about the forms of digitalization barriers, the factors that cause the problems, and the efforts that educational institutions can make to

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improve the effectiveness of using Management Information Systems. The data obtained are thus expected to give a comprehensive picture of the challenges of digitalization and the alternative solutions in the context of educational management (Pringgar & Sujatmiko, 2020).

Data were analyzed using qualitative descriptive analysis, that is, by systematically describing, comparing, and interpreting information obtained from various literature sources. The analysis went through the stages of information gathering, grouping by theme, presentation of the findings, and drawing conclusions. Information on digitalization barriers was grouped according to technological infrastructure, human resource competence, financing, data security, and organizational readiness. The various solution strategies were then analyzed to determine their relevance in supporting the effective and sustainable implementation of Management Information Systems. Through this method, the study is expected to produce a comprehensive understanding and recommendations that educational institutions can consider in overcoming digitalization barriers and improving the quality of educational management.

RESULTS AND DISCUSSION

Forms of and Factors Hindering the Digitalization of Management Information Systems in Educational Institutions

The digitalization of Management Information Systems (MIS) is the use of information technology to support the management of educational institutions so that it becomes more effective, efficient, and integrated. Implementing this system can help schools manage student data, academic administration, finances, staffing, and the delivery of information to the public. In practice, however, digitalization does not always go as expected. Each educational institution has different conditions and capabilities in using technology, so various barriers arise that can affect the success of implementing Management Information Systems (Rahmadani, 2026).

One of the main barriers is limited technological infrastructure, such as a shortage of computers, unstable internet connections, and the lack of an information system that fits the needs of the educational institution. These conditions can slow down data processing and hinder access to the information needed. Educational institutions in areas with limited access to technology may face greater challenges in carrying out digitalization. The availability of technological facilities and infrastructure is therefore an important factor to consider before implementing an information system comprehensively (Annur & Rosad, 2026).

Besides infrastructure, Anissa et al. (2025) point out that human resource capability is also a factor that influences the success of digitalization. Educators and education staff who lack adequate digital skills may have difficulty operating applications, entering data, or making use of the information the system produces. A lack of training and assistance can keep technology from being used optimally. Some users may even still feel more comfortable with manual methods because they are considered easier and have become a habit in daily administrative work. This shows that digital transformation is not enough with the provision of technological devices alone; it also requires the continuous improvement of users' competence.

The next barriers relate to limited budgets, data security, and organizational readiness. Implementing Management Information Systems requires funds for procuring equipment, developing applications, maintaining the system, training users, and protecting data. If budget planning is not done carefully, educational institutions may struggle to sustain the system. In addition, the risks of data leakage, loss of information, and unauthorized access need to be anticipated through adequate security policies. A lack of leadership support and coordination between units can also cause the system to be implemented inconsistently, so that the benefits of digitalization are not fully realized (Anissa et al., 2025).

Based on this discussion, the barriers to the digitalization of Management Information Systems in educational institutions come not only from technological aspects but also relate to

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people, financing, security, and organizational governance. Each barrier is connected to the others, so solutions need to be comprehensive. For example, providing computers will not give optimal results if users do not yet have sufficient skills to operate them. Educational institutions therefore need to first identify their needs and evaluate their digital readiness so that they can set improvement priorities that match their conditions and capabilities.

Strategies for Overcoming Barriers to the Digitalization of Management Information Systems in Educational Institutions

Strategies for overcoming digitalization barriers need to be prepared based on the problems each educational institution faces. A first step is to improve the readiness of technological infrastructure by providing adequate equipment, improving internet connections, and choosing applications that suit the needs of educational management. Technology procurement should follow a scale of priorities so that the budget is used more efficiently. Educational institutions can also use available systems in line with their policies and resources, as long as those systems can meet administrative needs, support data integration, and maintain information security (Jusmila, 2026).

The next strategy is to improve human resource competence through continuous training and assistance. Training can be given to principals, administrative staff, teachers, and others involved in using Management Information Systems. Training materials need to be adapted to each user's tasks, from operating applications, managing data, and preparing digital reports to applying information security procedures. In addition, Sartika (2026) suggests that educational institutions can appoint support staff or officers with technological skills to help users when they encounter difficulties. In this way, all users are expected to adapt to the change in work processes from manual to digital systems.

In implementation, Mandasari et al. (2023) identify several strategies that can be applied to overcome barriers to the digitalization of Management Information Systems, namely:

1. Improving technological infrastructure: providing computers, internet connections, and supporting facilities that match the needs of the educational institution.
2. Human resource training: improving the digital skills of teachers and education staff through training, assistance, and evaluation of user abilities.
3. Effective budget planning: setting financing priorities for the procurement, development, maintenance, and renewal of information systems.
4. Strengthening data security: applying access rights management, strong passwords, regular data backups, and information protection procedures.
5. Regular evaluation and supervision: monitoring system use, identifying obstacles, and making improvements based on user needs and technological developments.

Beyond these strategies, Kristanti and Putra (2025) emphasize that leadership support and organizational policy play an important role in the success of digitalization. Leaders of educational institutions need to give clear direction, assign responsibilities, and encourage all members of the institution to take part in the change process. Open communication is also needed so that users understand the benefits of digitalization and do not see it as merely an added workload. Involving teachers and education staff in selecting and evaluating the system can help the institution learn about real needs in the field. With good organizational support, the use of technology can become part of a work culture that is more orderly, transparent, and oriented toward improving the quality of educational services.

These strategies need to be carried out in stages and on a continuing basis so that their results can be evaluated objectively. Educational institutions can begin digitalization in the administrative area most in need of improvement, then extend it to other areas once the system is running well. Evaluation can consider the speed of service, the accuracy of data, the ease of

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access to information, user ability, and the level of system security. If obstacles are found, the institution needs to adjust the work procedures, facilities, or training programs already in place. With a planned approach, digitalization is not only a change in the tools used but also an ongoing effort to improve educational governance.

The Role of Optimizing the Digitalization of Management Information Systems in Improving the Effectiveness of Educational Management

Optimizing the digitalization of Management Information Systems can contribute to the effectiveness of managing educational institutions. A well-implemented information system allows administrative, academic, financial, and staffing data to be managed in a more structured way. Processes previously done manually can be simplified through electronic recording, centralized storage, and digital reporting (Aminah et al., 2026). This can reduce repetitive work and help education staff allocate time to other, more productive tasks. However, these benefits depend on how well the system fits the institution's needs, the quality of the data entered, and users' consistency in following the established procedures.

In terms of time and cost efficiency, the use of Management Information Systems can help speed up administrative services. Searching for student data, processing grades, preparing reports, and delivering information can be done more practically when the system is properly designed. The use of digital documents also has the potential to reduce the need for printing and storing physical files. In addition, faster access to information can help institutional leaders monitor operational activities and identify problems that require immediate action (Najuba & Nugraha, 2025). Optimizing information systems can thus support more efficient use of resources without neglecting accuracy and service quality.

Digitalization also plays a role in improving the transparency and accountability of educational management. Information stored systematically can support the inspection, monitoring, and reporting of institutional activities. In financial management, for example, a digital system can support transaction recording, report preparation, and document tracing according to the access rights that have been set. In academic management, an information system can make it easier for authorized parties to monitor student progress and access the data they need (Syah, 2026). Even so, transparency must be accompanied by privacy protection so that the personal information of students, teachers, and education staff cannot be accessed by unauthorized parties.

Besides supporting efficiency and transparency, optimizing Management Information Systems can help improve the quality of decision-making. Accurate and timely data give institutional leaders a basis for evaluating programs, identifying needs, and planning educational development. For example, student attendance data can be used to identify patterns of absence, while budget realization reports can help managers assess the match between planning and implementation. However, good decisions depend not only on the availability of digital data but also on leaders' ability to interpret information, check its reliability, and consider real conditions in the educational setting (Rahman & Prabowo, 2025).

Optimizing the digitalization of Management Information Systems should therefore be seen as a continuous process that combines technology, human resource competence, organizational policy, and performance evaluation. Educational institutions need to ensure that the systems they use truly help solve administrative problems and support the achievement of educational goals. Regular evaluation is needed to find out whether implementation has improved the speed of service, reduced recording errors, made information easier to access, and strengthened data security. If this process is carried out consistently, digitalization has the potential to produce educational governance that is more effective, adaptive, transparent, and responsive to community needs. The success of digital transformation is thus measured not only by the use of technology but also by the real benefits it brings to educational management and services.

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CONCLUSION

The digitalization of Management Information Systems in educational institutions is an important step in improving the effectiveness, efficiency, transparency, and quality of educational services. However, its implementation still faces various barriers, such as limited technological infrastructure, low human resource competence, limited budgets, data security risks, and a lack of organizational readiness to face change. These barriers show that the success of digitalization depends not only on the availability of technology but also requires human resource support, appropriate policies, and good governance. Each educational institution therefore needs to identify the problems it faces so that it can determine solutions that fit its needs and capabilities.

Strategies for overcoming digitalization barriers can be carried out by improving technological facilities and infrastructure, training human resources, planning budgets effectively, strengthening data security, and evaluating the system regularly. Leadership support and the involvement of all members of the educational institution are also needed to build a work culture that adapts to technological developments. Implementing these strategies in a planned and sustainable manner is expected to optimize the use of Management Information Systems so that administrative processes become faster, data management more accurate, and decision-making more appropriate. Digitalization thus becomes not only a form of technology use but also a strategic effort to achieve professional, effective, transparent educational management that is oriented toward improving the quality of education.

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