



FROM DIGITAL PLATFORMS TO LEARNING QUALITY: A MANAGEMENT MODEL OF LEARNING INFORMATION SYSTEMS IN SECONDARY EDUCATION

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ABSTRACT

This study aims to analyze the management model of the learning information system in improving the quality of learning at SMA Muhammadiyah Mlati. This study employed a qualitative approach with a descriptive research design. The participants consisted of the principal, the vice-principal for curriculum, teachers, and students who were involved in the use of the learning information system. Data were collected through in-depth interviews, classroom observations, and documentation analysis of school records, including schoolwork programs, digital-based lesson plans, and reports on the use of learning platforms. The collected data were analyzed using qualitative data analysis techniques involving data reduction, data display, and conclusion drawing. The findings indicate that the management of the learning information system is implemented through systematic stages of planning, implementation, monitoring, and evaluation. The implementation of the system supports the organization of learning materials, assignments, and assessments more effectively while facilitating communication between teachers and students. In addition, the system increases student engagement and participation in learning activities. Therefore, the management of the learning information system contributes positively to improving the quality of learning.

Keywords: Learning Information System; Learning Quality; Educational Management

1. INTRODUCTION

The rapid development of information and communication technology has significantly influenced many aspects of human life, including the field of education. Educational institutions are increasingly required to adapt to technological advancements in order to improve the effectiveness and efficiency of learning processes [1]. One of the important innovations in modern education is the utilization of information systems that support the management and delivery of learning activities [2]. The use of information systems enables schools to manage academic information, learning materials, and communication between teachers and students more effectively. Information systems are integrated components that collect, process, store, and distribute information to support decision-making and control within organizations, including educational institutions[3].

In the educational context, the implementation of a learning information system plays an important role in supporting the learning process by providing digital platforms that facilitate the management of learning materials, assignments, and evaluations. Through these systems, teachers can organize learning resources more systematically while students can access materials and academic information more flexibly. The integration of technology in learning also allows educational institutions to create more interactive and collaborative learning environments. According to Destini & Tony [4], the use of digital technology in education improves access to learning resources and enhances interaction between teachers and students. Similarly, Sitthiworachart et al. [5] states that technology-supported learning environments enable more dynamic communication and collaboration in the learning process.

Despite the potential benefits of learning information systems, their successful implementation depends greatly on effective management within educational institutions [6], [7], [8]. The management of learning

information systems requires systematic planning, appropriate implementation strategies, and continuous supervision to ensure that the system supports educational goals. Without proper management, the utilization of technology may not produce the expected improvements in learning quality. According to Astiwi et al. [9] and Nugroho et al. [10], management involves a series of activities including planning, organizing, actuating, and controlling to achieve organizational objectives effectively. In addition, Hanma et al. [11] explains that effective management enables organizations to coordinate resources efficiently and achieve desired outcomes.

The quality of learning is one of the key indicators of educational success in schools. High-quality learning is characterized by effective teaching strategies, active student participation, and meaningful learning experiences that lead to the achievement of educational objectives. In modern education, the improvement of learning quality often involves the integration of technology to support innovative teaching practices and diverse learning resources. According to Lerner & Johns [12] and Siswanto [13], effective teaching strategies and active engagement of students significantly influence the success of the learning process. Likewise, [14] and Siswanto & Astiwi [15] found that the use of digital technologies in education can enhance student engagement and support more student-centered learning.

Previous studies also indicate that the use of information technology in learning environments can improve instructional effectiveness when supported by proper management and institutional policies. Research conducted by Purnomo et al. [16] and Weigand et al. [17] highlights that digital learning environments can enhance collaboration and knowledge construction among learners. Furthermore, Ansari et al. [18] and Rochmat et al. [19] emphasizes that the use of digital learning platforms can foster self-regulated learning and promote flexible learning environments that support students' independent learning.

SMA Muhammadiyah Mlati, as one of the secondary education institutions, has attempted to implement a learning information system to support the teaching and learning process. Through the use of digital learning platforms, teachers can distribute learning materials, assign tasks, and conduct evaluations more systematically. At the same time, students benefit from easier access to learning resources and more flexible communication with teachers. However, the effectiveness of this system depends largely on how the school manages the planning, implementation, monitoring, and evaluation of the learning information system. According to Koutsoumanis et al. [20], effective educational management requires clear policies, leadership support, and systematic evaluation processes. Similarly, Mishra & Koehler [21] notes that organizational leadership plays a critical role in ensuring that innovations and technological systems are implemented successfully within institutions.

Based on the explanations above, it can be understood that the management of learning information systems is an important factor in improving the quality of learning in schools. Effective management ensures that technology is not only used as an administrative tool but also as a strategic resource that supports the learning process. Therefore, it is necessary to conduct an in-depth study on the management model of learning information systems, particularly in the context of secondary education institutions. This research focuses on examining the management model of the learning information system at SMA Muhammadiyah Mlati and its role in improving the quality of learning. The findings of this study are expected to contribute to the development of effective strategies for managing educational information systems in schools.

2. LITERATURE REVIEW

2.1. Learning Information System

A Learning Information System (LIS) is an information technology-based system designed to support the management and delivery of learning activities in educational institutions. This system integrates various academic functions such as the distribution of learning materials, assignment management, communication between teachers and students, and the evaluation of learning outcomes through digital platforms. The development of learning information systems is closely related to the advancement of digital technology that enables learning processes to be conducted more flexibly and efficiently. According to Hera et al. [22] and Romney & Steinbart [23], information systems serve as integrated components that collect, process, store, and distribute information to support decision-making and organizational control. In the educational context, these systems help institutions manage academic information effectively and support the implementation of technology-based learning.

Furthermore, the utilization of learning information systems in education has expanded the opportunities for interactive and collaborative learning environments. Digital platforms within learning information systems allow students to access learning materials anytime and anywhere, enabling more flexible and personalized learning experiences. According to Hakim et al. [24], the integration of digital technologies in education increases the accessibility of learning resources and enhances interaction between teachers and students through various online learning tools. Similarly, Alamri et al. [25] explains that technology-supported learning systems can improve communication, collaboration, and knowledge construction among learners in digital learning environments. Therefore, the effective use of learning information systems plays an important role in supporting modern educational practices.

2.2. Learning Quality

Learning quality refers to the effectiveness of the teaching and learning process in achieving educational objectives and improving students' knowledge, skills, and attitudes. High-quality learning is characterized by meaningful learning experiences, active student participation, effective instructional strategies, and the achievement of intended learning outcomes. In modern education, the quality of learning is often associated with the ability of teachers to create engaging learning environments that encourage critical thinking, collaboration, and problem-solving skills among students. According to Khormi [26] and Maba et al. [27], the quality of learning is significantly influenced by instructional practices that actively involve students in the learning process and provide continuous feedback to support learning improvement.

In addition, the integration of technology in education has become one of the important factors that can contribute to improving learning quality. Technology-based learning environments enable the use of diverse learning resources, interactive media, and collaborative learning tools that can enrich students' learning experiences. Research conducted by Susetyawati et al. [28] and Kulimbang et al. [29] shows that the use of digital learning technologies can increase student engagement and support more active and student-centered learning processes. Consequently, the quality of learning can be enhanced when educational institutions effectively integrate technology, pedagogy, and learning management strategies to create meaningful and effective learning experiences for students.

2.3. Educational Management

Educational management refers to the process of planning, organizing, implementing, and supervising educational activities to achieve the goals of an educational institution effectively and efficiently [30]. Effective educational management ensures that all resources within the institution, including human resources, facilities, and technological infrastructure, are utilized optimally to support the learning process. According to Afandi et al. [31] and Tarso et al. [32], management consists of four essential functions: planning, organizing, actuating, and controlling, which are necessary to achieve organizational objectives. In the educational context, these management functions play a crucial role in ensuring that teaching and learning activities are conducted systematically and aligned with institutional goals.

Moreover, educational management also plays a strategic role in integrating innovation and technology into the learning process. School leaders and administrators are responsible for developing policies, providing resources, and creating an environment that supports the effective implementation of educational technologies. According to Kintoko et al. [33] and Sutarto [34], effective educational management requires strong leadership, collaborative decision-making, and continuous evaluation to ensure that educational programs and innovations contribute to improved learning outcomes. Therefore, the management of educational systems, including learning information systems, becomes a critical factor in improving the overall quality of education in schools.

3. METHOD

This study employed a qualitative approach with a descriptive research design to analyze the management model of the learning information system in improving the quality of learning at SMA Muhammadiyah Mlati. The research participants consisted of the principal, the vice principal for curriculum, several teachers, and students who were involved in the use of the learning information system. Data were collected through in-depth interviews, direct classroom observations, and documentation analysis of school records such as school work programs, digital-based lesson plans, reports on the use of learning platforms, and records of student learning activities. Interviews were conducted to obtain comprehensive information regarding the planning, implementation, monitoring, and impact of the learning information system management, while observations were carried out to examine directly how the system was utilized during the teaching and learning process. Documentation was used to support and validate the findings through written evidence related to school

policies and the practical use of the learning information system [35]. The collected data were analyzed using qualitative data analysis techniques, including data reduction, data display, and conclusion drawing to obtain a comprehensive understanding of the management of the learning information system in the school context. This qualitative analysis process follows the framework proposed by Naufal et al. [36] and Sugiyono [37] who emphasize systematic stages of qualitative data analysis to ensure the validity and credibility of research findings.

4. RESULTS AND DISCUSSION

4.1. Planning for the Management of the Learning Information System

The results of interviews with the principal, the vice principal for curriculum, and several teachers indicate that the planning of the learning information system management at SMA Muhammadiyah Mlati is carried out systematically through the development of programs integrated with technology-based learning needs. The school designs the use of digital learning platforms as a means to manage learning materials, assignments, and student assessments more effectively and in an organized manner. In the planning process, the school considers teachers' readiness, the availability of technological facilities, and students' ability to access the learning information system. This planning process is also conducted through coordination meetings involving the school management team and teachers to ensure that the utilization of the information system can optimally support the learning process.

Based on the results of observations and document analysis, the planning of learning information system management is reflected in various official school documents, such as the school work program, digital-based lesson plans, and guidelines for the use of learning platforms for teachers and students. These documents demonstrate that the school has incorporated the utilization of information technology as part of its strategy to improve the quality of learning. In addition, school policies encourage teachers to utilize the learning information system in daily instructional activities. With well-structured and comprehensive planning, the implementation of the learning information system can run more effectively and support the creation of innovative and adaptive learning processes in response to technological developments [38].

4.2. Implementation of the Learning Information System in the Learning Process

Interviews with teachers and students revealed that the learning information system has been utilized as a medium to support teaching and learning activities at SMA Muhammadiyah Mlati. Teachers use the system to upload learning materials, assign tasks, deliver academic announcements, and conduct online learning evaluations. The use of the learning information system also enables teachers to monitor students' learning progress through various available features, such as assignment submission, discussion forums, and digital-based assessment tools. Meanwhile, students stated that the system facilitates access to learning materials at any time and helps them organize the assignments given by teachers.

Based on observations conducted during the learning process, teachers combine face-to-face instruction with the use of the learning information system as a supporting medium. In several learning activities, teachers utilize the system to distribute teaching materials, provide practice exercises, and conduct learning reflections with students. Furthermore, documentation results show the existence of archived learning materials, records of student assignment submissions, and discussion activities stored within the learning information system. This indicates that the implementation of the learning information system is not merely administrative but also functions as a tool that supports a more interactive and structured learning process.

4.3. Monitoring and Evaluation of the Use of the Learning Information System

Based on interviews with the principal and the school management team, monitoring of the use of the learning information system is conducted regularly to ensure that the system is utilized optimally by teachers and students. The school monitors digital learning activities through platform usage reports that indicate the level of participation of teachers and students in learning activities. In addition, monitoring is conducted through discussions and coordination with teachers to identify challenges encountered during the implementation of the learning information system.

Documentation results reveal the existence of reports on the use of the learning information system as well as evaluation notes used as a basis for improvements and future system development. Meanwhile, observational findings indicate that the school actively supports teachers in enhancing the use of learning technology through training and mentoring programs. The evaluation process is also carried out through

learning evaluation meetings that discuss the effectiveness of the information system in supporting the teaching and learning process. Through continuous monitoring and evaluation, the school ensures that the learning information system contributes to improving the quality of learning.

4.4. The Impact of Learning Information System Management on Learning Quality

Interviews with teachers and students revealed that the management of the learning information system has a positive impact on the quality of learning at SMA Muhammadiyah Mlati. Teachers stated that the system helps them manage learning materials, assignments, and student assessments in a more structured and efficient manner. In addition, the system facilitates academic communication between teachers and students beyond classroom learning hours. For students, the presence of the learning information system provides easier access to learning materials, information on assignment schedules, and quicker feedback from teachers.

Observational findings also show that the use of the learning information system increases student engagement in learning activities. Students appear more active in accessing materials, completing online assignments, and participating in discussions through digital platforms. Furthermore, documentation in the form of student activity data and learning outcome reports indicates an increase in student participation in the learning process. Therefore, the management of the learning information system at SMA Muhammadiyah Mlati not only functions as an academic administrative tool but also plays an important role in creating a more effective, interactive, and quality-oriented learning process.

4.5. Discussion

The planning of learning information system management at SMA Muhammadiyah Mlati is carried out systematically through the preparation of programs integrated with technology-based learning needs. The planning process involves school management and teachers in designing the use of digital platforms as tools for managing learning materials, assignments, and student assessments. This finding indicates that the success of implementing a learning information system is strongly influenced by well-structured and comprehensive planning. From the perspective of educational management, planning is the initial step that determines the success of a program because through planning an organization can determine objectives, strategies, and the resources required to achieve its goals [39], [40], [41]. In addition, according to Phakamach et al. [42] and Pisiwati et al. [43], information systems that are carefully planned can support decision-making processes and improve the efficiency of information management in educational organizations. Therefore, the planning of learning information system management at SMA Muhammadiyah Mlati reflects the institution's awareness of the importance of integrating technology to enhance the quality of learning.

The findings of this study are also consistent with previous studies which indicate that effective planning is a crucial factor in the successful implementation of educational information systems. Research by (Carvalho & Santos [44], Feng & Yao [45] and Astuti et al. [46] explains that the success of implementing learning technology is largely influenced by organizational readiness, including the readiness of human resources and technological infrastructure. Similarly, research conducted by Shigematsu et al. [47] and Alqasa & Arshad [48] found that planning the use of technology in learning can improve instructional effectiveness when supported by clear policies and guidelines for teachers. In this study, the existence of school work program documents, digital-based lesson plans, and guidelines for using learning platforms indicates that the school has established a clear framework for managing the learning information system. This strengthens the finding that systematic planning serves as an essential foundation for integrating information technology into educational practices in schools.

Furthermore, the results of the study show that the implementation of the learning information system at SMA Muhammadiyah Mlati has been utilized by both teachers and students to support the teaching and learning process. Teachers use the system to upload learning materials, assign tasks, and conduct online evaluations, while students use it to access materials and manage assignments more flexibly. These findings indicate that the learning information system does not merely function as a storage platform for information but also serves as an interactive learning medium that supports more effective learning processes. According to Anwar [49] and Egara & Mosimege [50], the use of information technology in learning can improve the accessibility of learning materials, learning flexibility, and interaction between teachers and students. In addition, Siswanto et al. [51] and Setianingrum et al. [52] explains that integrating technology into learning can create a more collaborative and interactive learning environment through the use of various digital features available in online learning systems.

The study also reveals that the school conducts regular monitoring and evaluation of the use of the learning information system through platform activity monitoring and evaluation meetings with teachers. This finding

indicates that the management of the learning information system does not stop at the implementation stage but requires continuous supervision and evaluation processes. In educational management theory, supervision is an essential function aimed at ensuring that activities are carried out according to the established plans [53], [54]. Previous research by Limori et al. [55] also shows that the success of technology use in education is strongly influenced by continuous evaluation that enables educational institutions to improve the systems being used. Therefore, the monitoring and evaluation practices implemented at SMA Muhammadiyah Mlati demonstrate a systematic effort to ensure that the learning information system is optimally utilized by all members of the school community.

Furthermore, the findings indicate that the management of the learning information system has a positive impact on the quality of learning, particularly in increasing student engagement and improving the effectiveness of learning management by teachers. Teachers find it easier to organize learning materials and assignments, while students benefit from easier access to learning materials and faster feedback from teachers. These findings are consistent with the study conducted by Rawlings et al. [56], Husna et al. [57] and Pulungan et al. [58] which found that the use of learning technology can increase student participation and support more active, student-centered learning processes. In addition, research by Diva et al. [59] and Suryani et al. [60] demonstrates that the use of digital learning systems can enhance students' self-regulated learning and create more flexible learning environments. Therefore, the management of the learning information system at SMA Muhammadiyah Mlati not only functions as a supporting tool for academic administration but also serves as an innovative strategy to improve the overall quality of the learning process.

5. CONCLUSIONS

The study concludes that the learning information system management at SMA Muhammadiyah Mlati is implemented through systematic stages of planning, implementation, monitoring, and evaluation. This management contributes positively to learning quality, improving teachers' instructional effectiveness and increasing student engagement and participation. The school is encouraged to strengthen digital competencies, provide adequate technological infrastructure, and reinforce supportive policies for technology integration. Continuous training and mentoring are essential to optimize and innovate system utilization. Future research should further investigate its impact on student learning outcomes and develop more comprehensive and effective management models for broader educational contexts and long term sustainability efforts.

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