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Implementation of Educational Management Information Systems in Supporting Digital Transformation in Schools

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ABSTRACT

The rapid development of technology demands the implementation of systems that can improve the effectiveness and efficiency of education management. This study aims to analyze the implementation of the educational management information system (SIMDIK) in supporting digital transformation in schools. This implementation serves to make the education management process easier so that management can be faster and more accurate. The method used is a literature study through various scientific sources related to SIMDIK implementation. In analyzing the literature, it is important to pay attention to the validity of previous scientific sources that are trustworthy and relevant to the research. The study results show that the implementation of management information systems plays a role in improving the quality of education management and decision-making. This improvement includes better administration, processing of student data, and financial management. However, the implementation of this educational management information system (SIMDIK) often faces problems such as the quality of human resources, adequate information technology, and the readiness of institutions to deal with current technological developments. Therefore, policies, training, and technology development are important to ensure the information system runs optimally. This research is expected to provide insights for institutions in strengthening digital transformation through effective management of information systems in education.

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1. INTRODUCTION

The development of information and communication technology is pushing educational institutions to change various administrative processes, education management, and decision-making to be more effective and efficient. Managing education manually tends to be slower and prone to errors. Therefore, it's important for educational institutions to transform into digital-based ones. Educational institutions are no longer just providers of learning, but also organizations expected to manage information quickly, accurately, and in an integrated way.

Efforts that can be made to support digital transformation in schools include implementing an Education Management Information System (SIMDIK). This system is designed to integrate various data and information, such as student data, financial data, administrative data, curriculum, and student academic assessments, into one structured platform. With SIMDIK, the process of managing education becomes easier, reduces errors in record-keeping, and ensures transparency. In addition, having this system speeds up the provision of information for all stakeholders. Implementing an education management information system contributes greatly to improving the quality of educational services. It also makes it easier for school principals to supervise and make decisions. Thus, the system not only functions as an administrative tool, but also becomes a strategic instrument in improving the effectiveness of school management.

However, the implementation of education management information systems in various institutions still often faces challenges, some of which include limited human resources, inadequate technology, and a lack of integration of all education management into one unified system, so its utilization is not yet optimal. Therefore, it is important to have a study on the implementation of education management information systems in supporting digital transformation in schools. It is hoped that this study can provide an overview of the implementation process, the benefits obtained, the challenges faced, as well as strategies that can be carried out to optimize the use of information systems as part of educational digital transformation. In addition, it can serve as a reference for schools in developing more effective, efficient, transparent, and adaptive education management in line with current information technology developments.

2. METHODS

The research method used in this writing is library research. By collecting and analyzing information from various sources relevant to the research topic, it is expected to provide an explanation regarding the research topic. The sources of information used include books and journals that have been verified for accuracy. The next step is data processing through content analysis methods. This method aims to explore information in depth related to educational management information systems as a form of education system transformation in today's digital era. The final stage of this research is drawing conclusions and writing them in the form of a journal report.

3. FINDINGS AND DISCUSSION

Educational management information systems are information systems that are used and interconnected in managing educational institutions. The existence of this information system is highly relevant and supports the current educational transformation. According to Nasukah and Wiranti (2021), transformation comes from the word 'transform,' which means (1) to change composition or structure; (2) to change in character or condition; and (3) to change the outward form or appearance. Based on this meaning, transformation is a change in structure, character, or appearance of a condition (Zuliati, 2026:1). This concept not only includes the use of digital tools in the teaching and learning process, but also reflects a change in mindset and a more open approach to innovation (Judijanto et al., 2025:1). The existence of a management information system in education is a form of digital transformation in education. This system consists of several components that are interconnected to help manage education effectively and efficiently. According to Muhammad Akib, et al. (2026), there are several components in the Management Information System, including:

1. Hardware Hardware like computers, servers, data storage, and other devices. These devices work to store and manage educational data quickly, correctly, and accurately. However, this system needs regular maintenance so that the data management process continues to run smoothly.
2. Software Software in the form of applications is used to process and deliver information to users. In education, it can be a learning management system (LMS), administration applications, and learning evaluation applications. These tools make it easy to use with a user-friendly interface and in real time.
3. Data and Database Data is the core of SIMDIK, covering academic, administrative, financial, and school activity information. This data is interconnected and stored on hard drives, then managed using software. It needs to be well-managed so that the information produced is high-quality, storage is efficient, and it's easy to access.
4. Network and Connectivity Computer networks and internet connectivity support data access from various locations and devices. A stable network allows for fast access by both teachers and students. This access can be done in real time and in different places.
5. Users and Operational Procedures Users of the education management information system include teachers, students, principals, and other relevant users. The usage procedures consist of rules and access guidelines for the system. These rules are important so that the system can run smoothly without any problems.

Educational management information systems can be used by all members of the academic community in education, both in administration and the teaching and learning process. Here are some implementations of information systems in education:

1. Administrative Process

Education administration in a broad sense is a field that studies the organization of various resources to achieve educational goals as a whole. Organization here means managing, arranging, and administrating resources including people, leadership, facilities, curriculum, and learning resources (Qurtubi, 2019:241). In this context, there are educational staff whose job is to provide services in education. Etymologically, the term service comes from the word 'layan,' which means helping to prepare something needed by someone (Malik et al., 2024). In general, Information Management Systems (IMS) in administrative services include three main components: data collection, data processing, and data storage.

Data collection is done by gathering both internal and external data. Internal data comes from various school work units, like student affairs, curriculum, public relations, as well as facilities and infrastructure. Meanwhile, external data is obtained from outside the school according to the institution's needs. The collected data is then classified into several groups and used for decision-making. This classification is based on the type of data and the time it was collected. Data processing is the process of turning raw data into meaningful, accurate, and easy-to-understand information. In education, data is collected through data input and then forwarded to the main education data system (Dapodik). The processed data includes information on schools, students, and education staff, handled centrally and in real time.

Data storage aims to keep information safe, complete, and available so it can be used again when needed. With the Dapodik system, every school, student, and teacher has a unique identity that supports data validity. Data stored in digital media makes access easier, safer, and helps smooth out administrative services.

2. Student Data Management

Student data is a collection of information or complete records about students managed by educational institutions. This data includes personal or demographic information, academic data, family data, and health data. According to Barmawi and Arifin (2017), core student data not only serves an administrative function but is also a strategic tool for mapping education quality (Kadfi, et al., 2025:35). With valid data, schools can monitor students' backgrounds and achievements, as well as

determine learning programs to improve students' academic development according to their characteristics.

There are several implementations of student information systems, such as student data collection and registration. Technology has made a big contribution to education, showing the impact of digital transformation today. For example, registering new students used to involve filling out and submitting forms manually, but now there are systems that work quickly and reduce errors. In addition, the system also helps in maintaining student data that can be integrated centrally. This data includes information about student identities, such as name, date of birth, address, and parents' contact details. According to Bauder (2021), school information systems also record students' health history, including allergies, medical history, and other health notes that are important for school staff in providing special attention to students (Elfrianto et al., 2024:163). In the teaching and learning process, the information system is used to monitor student attendance and assist in academic assessment. Likewise, when reporting grades to students' parents, technology also allows schools to monitor students' behavior records at school. For example, schools can use special applications to record student behavior, such as tardiness, disciplinary violations, or academic achievements (Elfrianto et al., 2024:165).

3. Financial Management

Educational finance refers to all activities related to managing funds, budgeting, and financing to achieve effective and efficient educational goals. Financial management includes the planned implementation such as fund allocation, asset and liability management, as well as investment and funding decisions (Siregar, 2025:24). The goal is to ensure financial resources are used properly and correctly. However, it also needs to involve risk management to anticipate market fluctuations and economic uncertainties. In financial management, information systems play a role in handling the processes of receipts, expenditures, transaction recording, report creation, and cash flow analysis (Nurkholis et al., 2026:167). An example of an application used is Ibad Pay, which is connected to academic and other management systems.

4. CONCLUSION

The development of information and communication technology encourages educational institutions to change various administrative processes, education management, and decision-making to become more effective and efficient. The presence of a management information system in educational institutions provides many benefits, both in terms of administration and the teaching and learning process at school. An Educational Management Information System is a combination of human resources and information technology applications to select, store, process, and retrieve data in order to support decision-making in the field of education. This data consists of empirical data or actual data/facts that really exist and whose accuracy can be accounted for. Having a management information system in educational institutions provides many benefits, both in terms of administration and the teaching and learning process at school. The components of a management information system in education include hardware, software, database, networks and connectivity, as well as users. The educational management information system can be used by the entire academic community for both administration and teaching and learning processes. There are several implementations of information systems in education, such as administrative processes, student data management, and educational financial management.

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