



Implementation of Integrated Educational Management System at Vocational High Schools (A Study Comparative SMKN 1 and SMKN 2 Lhokseumawe City)

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ABSTRACT

The study investigated the implementation of integrated management systems in SMK 1 and SMK 2 Lhokseumawe. The research aims to identify the application of management systems in the two schools. A qualitative method with a descriptive-analytic approach was used for the study. Data collection techniques included interviews and observation. The study found that several applications such as Google Classroom, WhatsApp, Google Meet, and Teacher Room App can be utilized by SMK 1 and SMK 2. In addition to using applications, both schools also use websites and social media as information platforms for all information management systems.

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INTRODUCTION

A Management Information System (MIS) is a computer-based system that provides information to users that have comparable demands (Yudiyana et al., 2018). SIM card users are frequently formal organizational entities, such as companies or their subsidiary divisions (Tan et al., 2019). The SIM information provides a description of the organization or one of its key systems in terms of what has happened in the past, what is happening now, and what is expected to happen in the future (Islam et al., 2015; Muhammad Ilham & Yuniarti, 2022).

Information system is a computer application to support the operations of an organization, such as the operation, installation, and maintenance of computers, software, and data (Rainer & Prince, 2019; Schell & McLeod, 2014). Management Information System is the key to the field that emphasizes financial and personnel management. Technically, an information system can be defined as a set of interrelated components that collect, process, store, and distribute information to support decision-making and monitoring in an organization (Raadabadi et al., 2018). Information systems can be divided into two categories: manual information systems and computer-based information systems (CBIS) (Farooq et al., 2019). CBIS, which is usually referred to as information systems (IS), is a type of information system that uses computers (Ibharalu et al., 2019).

Management itself includes the processes of planning, organizing, supervising, directing, and others in an organization. Meanwhile, information in an organization is data that is processed in such a way as to have value and meaning for the organization (Drucker, 2012; Kale, 2018). Management Information System (MIS) is a system that processes and organizes data and information that is useful for supporting tasks in an organization (Faisal et al., 2018).

Experts explain that an information system is a structured combination of people, hardware, software, computer networks and data communications, and databases that collect, transform, and disseminate information within an organizational structure (Setyowati et al., 2021).

According to Leitch Rosses, an information system is a system within an organization that meets the daily transaction processing needs, supports the operational, managerial, and strategic activities of an organization, and provides external parties with the required reports (Mohd Salleh et al., 2017). Furthermore, some people say that an information system is data that is collected, grouped, and processed in such a way as to become an interconnected

and interdependent unit of information that provides valuable information to those who receive it (Mudjiyono et al., 2022)

Leaders demand an information network known as a management information system to facilitate and speed planning activities, regulation implementation tasks, and control duties (Bell & Harrison, 2018; Fanani, 2022; Prasetyo & Kifla, 2023). On the other hand, the major goal of the management information system in this case is to assist leaders in their decision-making process (Tan et al., 2019).

It is possible to differentiate (not separate) the process of implementing integrated quality management into two fundamental issues: (1) how integrated quality management works, which can be called the difficult part of integrated quality management; and (2) how to make quality management work, which can be called the easy part of quality management (Mitchell & Sackney, 2016; OECD and Asian Development Bank, 2015; Prasetyo et al., 2022; Tribus, 2010). Both of these concerns are inextricably linked. Because it is made up of objective methodologies, procedures, and tools, the demanding component of integrated quality management is more rational. Because it is related to the human system, the softer component is more difficult to comprehend (Alam, 2021; Prasetyo & Sukatin, 2021).

The advancement of technology and information over time has resulted in significant shifts. These changes can be seen in the systems that humans utilize in their daily lives, such as communication and interaction, as well as other human activities that include both individuals and groups (groups) (Chiware & Becker, 2018). At this moment in time, everyone is obliged to use information media and data processors in order to provide support for all aspects of daily life activities (Alfansyur, 2020; Siregar et al., 2021).

Also, academic and extracurricular parts of education must be under the authority of schools. In Indonesia, technology has been interwoven into all sectors of schooling. This includes online exam systems, online student registration, and a number of additional platforms used to facilitate the learning process (Mendenhall & Bartlett, 2018; Muslina Jamil & Syarifah Rahmah, 2021).

The objective of implementing management information systems in educational institutions is to provide support for management activities, such as planning, organizing, staffing, directing, evaluating, coordinating, and budgeting, in order to achieve the goals and objectives of educational organizations and their operational functions. Moreover, the establishment of

management information systems in educational institutions serves as a tool for external parties involved in inter-organizational information systems to make decisions. This allows educational institutions to communicate with the numerous stakeholders in their domains.

The research conducted at SMK 1 and SMK 2 Lhokseumawe schools focuses on the application of integrated educational management information systems that can be implemented, the implementation of integrated management systems in SMK 1 and SMK 2 Lhokseumawe, and the challenges involved in implementing management information systems in SMK 1 and SMK 2 Lhokseumawe schools.

The research on management information systems in SMK 1 and SMK 2 Lhokseumawe aims to determine why integrated educational management systems can be implemented in SMK 1 and SMK 2 Lhokseumawe, how integrated educational management systems are implemented in SMK 1 and SMK 2 Lhokseumawe, and the factors that both hinder and support the implementation of integrated management information systems in SMK 1 and SMK 2 Lhokseumawe.

METHODS

The author of this study employed both qualitative field research and descriptive analytic techniques. Unlike to quantitative research findings, qualitative research findings are not intended to be generalized. Qualitative research focuses on a process, occurrence, or progression. The acquired data during qualitative research are qualitative in character. The objective of the study is to determine the relevance of the event and how it relates to the lives of certain people and places.

Using a descriptive-analytical approach, this study investigates the hows and whys of a phenomenon in order to gain a deeper understanding of it. This study focuses on the instructors and staff members of the SMK 1 and SMK 2 schools in Lhokseumawe. This study's subjects are the schools themselves. Because the researcher wishes to collect data in the form of the opinions of respondents and informants, in-depth accounts, and field observations regarding the implementation of an integrated education management information system in SMK 1 and SMK 2 schools in Lhokseumawe, this type of research has been chosen. Lhokseumawe contains the SMK 1 and SMK 2 schools.

This methodology is used to describe the process of implementing an information system in educational institutions. In addition, an analytical

method is used to acquire a deeper understanding of the implementation of an integrated education management information system at SMK 1 and SMK 2 in Lhokseumawe. On the basis of the collection and analysis of the acquired data, conclusions regarding the subject of the study are reached.

During the analytical phase of the study project, the researcher created a list of interview questions to be asked of informants during data collection interviews. The answers to these questions were then evaluated to determine the information provided by the informants. In November 2022, the researcher conducted interviews with informants directly active in the field, and then analyzed the results of these interviews.

RESULT AND DISCUSSION

Management Information System (MIS) is a crucial aspect of financial and human resource management. From a technical standpoint, an information system is a framework composed of interconnected components that work together to collect, process, store, and disseminate information, thereby facilitating decision-making and monitoring within an organization.

The objective of management information systems is multidimensional. It entails providing decision-makers with relevant data to support effective decision-making, facilitating planning, control, evaluation, and continuous improvement processes, and providing data for cost calculation and management. In today's dynamic business environment, MIS contributes to the overall efficiency, efficacy, and competitiveness of organizations by achieving these goals.

In the context of financial management, an effective MIS enables the efficient handling and analysis of financial data. It includes accounting systems, budgeting tools, and financial reporting mechanisms, among other subsystems that capture and process financial data. A MIS enables financial managers to generate accurate and timely financial reports, monitor budget allocations, track expenses, and make informed decisions regarding resource allocation and investment strategies by integrating these components.

Therefore, these three objectives indicate that managers and other users need to have access to management accounting information and also know how to use it. Management accounting information can help them identify a problem, solve a problem, and evaluate performance (Langfield-Smith et al., 2018).

The purpose of management information systems are:

- a) To provide information for decision-making.
- b) To provide information used in planning, control, evaluation, and continuous improvement.
- c) To provide information used in calculating the cost of products, services, and other purposes desired by management.

The objective of management information systems (MIS) can be broken down into several primary goals. Initially, MIS provides information that facilitates organizational decision-making processes. By accumulating, analyzing, and presenting pertinent data, MIS assists decision-makers in aligning their decisions with the organization's goals and objectives.

MIS plays a crucial function in supporting numerous planning, control, evaluation, and continuous improvement aspects. MIS enables managers to effectively plan and allocate resources, monitor performance, evaluate outcomes, and identify areas for improvement by providing timely and accurate information. This exhaustive data empowers managers to make strategic decisions, optimize operations, and improve organizational performance.

MIS is a useful instrument for cost management and analysis. It provides data that aids management in calculating the cost of products, services, and other purposes. Through the collection of data on expenses, production costs, labor costs, and other cost-related factors, MIS enables businesses to precisely determine the cost structures of their offerings. This information supports prudent financial decision-making by facilitating pricing strategies, budgeting, and financial analysis.

Similarly, a MIS plays a crucial role in personnel management by streamlining human resource processes and enhancing organizational efficiency. Through dedicated subsystems such as payroll management, employee database management, and performance evaluation systems, an MIS assists in automating routine administrative tasks, maintaining employee records, monitoring attendance, and facilitating personnel-related decision-making. This enables human resource professionals to focus on strategic initiatives, such as talent development, succession planning, and employee engagement.

The essence of an MIS lies in its ability to integrate and harmonize various components, ensuring seamless information flow across departments and

enabling decision-makers to access accurate and relevant data. By utilizing the capabilities of a MIS, organizations can increase their operational efficiency, optimize resource utilization, and promote well-informed decision-making at all levels. It offers a comprehensive solution for information processing and decision support within an organizational context and serves as a crucial instrument for navigating the complexities of financial and personnel management.

Integrated Management Information System of SMK 1 Lhokseumawe

Based on the results of observations and interviews at SMK 1 Lhokseumawe, it was found that all teaching and learning processes at the school use Google Classroom, supported by WhatsApp, Google Meet, and the Ruang Guru application. In order to increase the number of students at the school each year, it depends on the number of students who register and operational assistance. In addition, teachers and education staff need records or documents such as education calendars, annual programs, semester programs, syllabus analysis, and learning program planning in implementing the integrated management information system (SIM) every year.

The role of teachers in preparing the integrated education management information system at SMK 1 Lhokseumawe is to provide training on how to use the learning application for teachers and education staff before the start of the new academic year. This is to ensure that the goals of the learning process are achieved. In addition, the school provides information to every teacher and education staff through the school website. Teachers are equipped with in-house training to prepare them for the implementation of the integrated management information system.

When the online learning system is implemented, the readiness of students to face the increasingly advanced integrated management information system can support the learning process. This includes using e-books and other applications such as the blog-guru application for teaching and learning. However, online learning is not as effective as face-to-face formal learning in traditional classrooms

Integrated Management Information System of SMK 2 Lhokseumawe

The research results at SMK 2 Lhokseumawe School show that they use a management information system related to the school's website, social media,

and the Dapodik school system created by the Ministry of Education and Culture. All of these information systems are used by the school to support and facilitate activities in the school. One of the uses of this information system is for the admission of new students and can assist teachers in accessing their teaching and academic activities.

The school's operator is responsible for holding the Dapodik school system. SMK 2 Lhokseumawe School has not yet used a specific system for management information in other work, such as correspondence, which still uses computer applications. The school distributes various information through social media.

In the learning process, SMK 2 Lhokseumawe School does not use any systems, except during the final exam for grade XII, where they apply competency union, namely ANBK (computer-based national assessment), which is part of the process of mapping the quality of the education system (schools, madrasahs, and equivalence programs for elementary and secondary levels) that can be done more practically. ANBK is used as a substitute for Computer-Based National Examination (UNBK).

SMK 2 also uses an application created by the Ministry of Education and Culture, namely the Merdeka Mengajar (PMM) application, where all teachers use the application, which has been implemented for 2 years. However, it is not yet fixed in its use because the application is still under repair.

The school itself has difficulties in implementing the Merdeka Mengajar application, such as downloading modules and other things that are still basic, because the application from the Ministry of Education and Culture is not yet complete for use. However, if used for teaching, all the features for independent teaching training are complete and can be used.

In implementing the Merdeka Mengajar curriculum, there are many things that must be prepared by SMK 2 school, including socialization, in-house training, and given the ability to make assessment scores, modules, and other things. This guidance is conveyed for the first 10 days of the semester to all teachers.

Among the students of SMK 2, there are not many who have downloaded the Merdeka Mengajar application, and mostly only teachers use the application. The preparation for teachers in using the Merdeka Mengajar application starts with installing the application, then being given an account, and then being able to access all the features available in Merdeka Mengajar.

Comparison of Integrated Management Information Systems between SMK 1 and SMK 2 in Lhokseumawe

The integration of information systems in educational institutions has revolutionized the way teaching and learning are conducted. This study focuses on SMK 1 and SMK 2 schools in Lhokseumawe, which have adopted several digital platforms to enhance their management and academic processes. By utilizing Google Classroom, WhatsApp, Google Meet, and the Ruang Guru application, along with websites and social media, these schools aim to provide teachers with efficient access to teaching materials and academic resources.

Preliminary findings indicate that the integration of various information systems has significantly improved the accessibility and availability of teaching resources for teachers. Google Classroom serves as a central platform for organizing course materials, assignments, and assessments. WhatsApp enables seamless communication among teachers, facilitating collaboration and sharing of resources. Google Meet facilitates virtual meetings and online classes, allowing for synchronous learning experiences. The Ruang Guru application offers a vast array of educational content and interactive learning materials. Furthermore, the utilization of websites and social media enhances the dissemination of information and serves as additional sources for academic resources.

At SMK 1, there are several differences compared to SMK 2. In the process of learning, the educators still use several features to support the learning process, such as using Google Classroom, which is supported by WhatsApp, Google Meet, and the Ruang Guru application. SMK 1 has not yet implemented the independent teaching curriculum (*Kurikulum Merdeka Mengajar*). On the other hand, SMK 1 has some differences with SMK 2.

The educators in the learning process still use several features to support the learning process, namely Google Classroom, supported by WhatsApp, Google Meet, and the Ruang Guru application. SMK 1 has not yet implemented the independent learning curriculum. In contrast, SMK 1 has implemented the independent learning curriculum for two years. Meanwhile, SMK 2 Lhokseumawe uses a management information system related to the school's website, social media, and the Kemdikbud-created school's Dapodik system.

The implementation of the independent learning curriculum goes through a cycle that involves the following three stages,

1. Asesmen diagnostic

Teachers conduct an initial assessment to recognize the potential, characteristics, needs, developmental stages, and learning achievements of students. Assessment is generally carried out at the beginning of the academic year, so that the results can be used for further planning related to the learning methods that should be used.

2. Planning

The teacher designs the learning process based on the diagnostic assessment results and groups the students according to their level of ability.

3. Learning Process

During the learning process, teachers will conduct periodic formative assessments to track the progress of student learning and make adjustments to teaching methods if necessary. At the end of the learning process, teachers may also conduct a summative assessment as an evaluation of the achievement of learning objectives.

Table 1.1 Effectiveness of SIM Implementation on Teachers

School	Providing information	Data storage	Data entry
SMK 1	✓	✓	✓
SMK 2	✓	✓	✓

Based on the presentation of the table above, the implementation of SIM on teachers in the process of data entry, data storage, and information provision in both schools is very effective. In addition, the increased efficiency of resources can also be felt by teachers. Therefore, the system is very helpful for the role of teachers in implementing the Management Information System.

In the domain of school management, it is essential to recognize that while not all teachers may initially possess a high level of competency, they frequently demonstrate a willingness to invest time and effort in their professional development. Consequently, educational leaders should design and implement a series of comprehensive programs and support systems intended at enhancing teachers' learning competency.

By fostering an environment conducive to professional development, school administrators can enable teachers to acquire new knowledge, hone their skills, and remain abreast of the most recent educational practices. This can be accomplished through various means, including the provision of targeted

seminars, training sessions, and opportunities for collaborative learning. In addition, mentoring programs and peer observation initiatives can encourage a culture of continuous improvement and facilitate the sharing of best practices.

Based on the findings of this study, effective communication arises as a crucial element in the development of a robust organizational culture in schools. Both vertically and horizontally open and transparent communication channels facilitate the free passage of information, ideas, and feedback. Leaders in schools should prioritize cultivating a culture of effective communication by promoting active listening, encouraging constructive dialogue, and embracing diverse points of view.

In addition, communication is a potent instrument for aligning objectives, disseminating values, and developing a shared sense of purpose among all stakeholders. By clearly articulating the school's mission, vision, and fundamental values, leaders can foster a cohesive and positive organizational culture.

Effective school management necessitates recognizing teachers' eagerness to learn and developing comprehensive programs to support their professional development. By fostering a culture of continuous learning, schools can foster the competencies of instructors and improve their overall effectiveness. In addition, communication emerges as a crucial factor in establishing a robust organizational culture, fostering collaboration, and aligning the entire school community with shared goals. School leaders can foster an environment conducive to growth, collaboration, and achievement by prioritizing effective communication strategies.

The integration of information systems in SMK 1 and SMK 2 schools has resulted in several benefits. Teachers have reported increased convenience in accessing teaching materials, improved collaboration with colleagues, and enhanced pedagogical practices. The use of these systems has also promoted student engagement and participation. However, challenges such as connectivity issues and the need for continuous training and support have been identified, which require ongoing attention to ensure the effective utilization of these systems.

The findings suggest that the integrated information systems used in SMK 1 and SMK 2 schools in Lhokseumawe have positively impacted teaching and academic resource accessibility. The adoption of Google Classroom, WhatsApp, Google Meet, the Ruang Guru application, websites, and social media has

facilitated seamless access to resources, improved collaboration, and enhanced pedagogical practices. Continuous support and training, along with addressing technological challenges, are crucial for sustaining and maximizing the benefits of these information systems in the long run.

CONCLUSION

In implementing the integrated management information system in SMK 1 and SMK 2 Lhokseumawe, there are several features used by the schools, including Google Classroom, WhatsApp, Google Meet, and the Ruang Guru application. In addition to using applications, SMK 1 and SMK 2 schools also use websites and social media as sources of information. All of these information systems are utilized by the schools to support and facilitate activities in the school, and to facilitate access to teaching and academic resources for the teachers.

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