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Implementation of School Management Information System in High School State 5 Palopo

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Abstract :*The implementation of Management Information Systems (MIS) supports information management and school administration, but its implementation still faces system access disruptions. This study aims to determine the implementation of MIS and the factors causing server downtime at SMA Negeri 5 Palopo. The study used field research with a qualitative descriptive design and a case study approach. The study did not use a population and sample, but involved informants consisting of the principal, administrative staff, and teachers. The research instrument was the researcher with interview, observation, and documentation guidelines. Data were analyzed using interactive analysis through collection, condensation, data presentation, as well as drawing conclusions and verification. The results showed that MIS implementation was carried out through planning, organizing, leading, and controlling to support the management of grades, attendance, documentation, reporting, and school administration. Server downtime factors included hardware, software, brainware, data and system procedures, internet network, and electricity, with network and electricity disruptions most often related to system access disruptions. In conclusion, the sustainability of MIS requires integrated management of resources, systems, data, and supporting infrastructure.*

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Introduction

The development of information technology in educational management has encouraged schools to utilize Management Information Systems (MIS) to support academic and administrative data

management. School management information systems can help reduce manual administrative work, increase productivity, provide access to educational information, and support data-driven decision-making. The use of MIS can also assist in student and curriculum data management, increase transparency and communication, and support curriculum planning and school resource allocation (Yusuf & Hafidh, 2024; Grepon et al., 2022). In the context of academic activities, the implementation of a management information system can support various school activities, enabling more organized information management (Wijaya & Risdiansyah, 2020). This situation indicates that the implementation of MIS is a crucial part of information management and administration in educational organizations.

The implementation of a management information system (MIS) in schools is not only related to application use but also involves human resources, task allocation, facilities, data, procedures, and organizational support. The application of a management information system (MIS) in educational services can help schools manage various information needed for educational activities (Haq, 2022). At SMA Negeri 5 Palopo, the implementation of the MIS is aimed at supporting information management and school administration. The system's use includes grade management through e-Report cards, attendance input, activity documentation, teacher reporting, administrative services, and the provision of information to support decision-making. This implementation is carried out through planning, organizing, directing, and monitoring functions, involving school parties according to their respective duties and responsibilities.

Although MIS has been used to support school activities, its implementation still faces several challenges. System management is not yet fully integrated, resulting in delays in reporting, decision-making, and communication between work units. Furthermore, system implementation still faces limitations in human resources regarding technology mastery, training needs, and inadequate digital infrastructure. These challenges demonstrate that the success of MIS implementation is determined not only by system availability but also by user readiness and the support of the facilities used to run the system.

Another problem is related to system disruptions that cause server downtime, resulting in system inaccessibility or disruption to its use. Based on the research focus, factors related to this condition include hardware, software, brainware, system data and procedures, internet networks, and electricity. Hardware and software disruptions can hinder system work processes, while limited human resource capabilities can also be a barrier to the use and management of SIM. In addition, errors or inconsistencies in data, system procedures, internet network disruptions, and power outages are also related to disruptions to system access. These conditions demonstrate that the sustainability of SIM requires integration between people, devices, data, procedures, and supporting infrastructure.

This issue is important to study because the implementation of MIS at SMA Negeri 5 Palopo is directly related to information management and school administration, while system disruptions can hinder the use of information in carrying out work. Based on the research conducted, internet network and electricity disruptions are the factors most often associated with system access disruptions. Other technical factors include server conditions, environmental temperature, security threats or viruses in the application, and data errors or inconsistencies. Therefore, this study focuses on the implementation of MIS through the aspects of planning, organizing, leading, and controlling, as well as the factors that cause server downtime in the school management information system at SMA Negeri 5 Palopo.

This study aims to determine the implementation of the School Management Information System at SMA Negeri 5 Palopo and to determine the factors causing server downtime in the system. This study is important to provide an overview of the implementation of MIS in managing school information and administration while identifying factors related to system disruptions. The novelty of the study lies in the study of MIS implementation at SMA Negeri 5 Palopo by connecting management functions including planning, organizing, directing, and supervising with factors causing server downtime including hardware, software, brainware, data and system procedures, internet networks, and electricity. Thus, this study provides an overview of the implementation of MIS and the problems that arise in its application in the context of the school that is the research location.

Method

This research is a field study with a qualitative descriptive design and uses a case study approach.

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The research is aimed at understanding the implementation of the Management Information System at SMA Negeri 5 Palopo and identifying obstacles that arise in its implementation, particularly the factors that cause server downtime. The case study approach was used because the research focuses intensively on one institution, namely SMA Negeri 5 Palopo, in the context of implementing a management information system to support educational operations. The research focuses on the implementation of MIS through planning, organizing, leading, and controlling, as well as the factors causing server downtime, including hardware, software, brainware, data and system procedures, internet network, and electricity. This research was conducted at SMA Negeri 5 Palopo because the school is the location for the implementation of MIS in information management and school administration (Ansar & Makbul, 2021).

In qualitative research, the primary research instrument is the researcher themselves. Complementary instruments used include interview guidelines, observation guidelines or field notes, and documentation formats. Data collection was conducted through interviews, observations, and documentation studies. Interviews were used to obtain descriptive information regarding the implementation of the SIM and the factors that caused server downtime. Observations were conducted through direct observation of the SIM implementation and conditions related to system disruptions using field notes, cameras, and diaries. Documentation studies were used to obtain documents or archives related to the SIM implementation and as supporting data and triangulation to strengthen the results of interviews and observations.

Data analysis used interactive analysis, referring to Miles, Huberman, and Saldana, through four stages: data collection, data condensation, data presentation, and conclusion drawing and verification. Data collection was carried out on field notes, recordings, and documents obtained through interviews, observations, and documentation studies. Data condensation was carried out through sorting, focusing, summarizing, and simplifying the data. Next, the data was presented systematically so that the information obtained was easy to understand and could be used in drawing conclusions. The final stage was carried out by drawing conclusions based on evidence found in the field and conducting verification by comparing the results of interviews, observations, and documentation (Tanzeh, 2018).

This qualitative research does not use a population and sample in the sense of quantitative research, but uses informants and data sources directly related to the implementation of the Management Information System at SMA Negeri 5 Palopo. Research informants consist of parties involved in the management and use of MIS, namely the principal, administrative staff, and teachers. Primary data was obtained through in-depth interviews with parties directly involved in system management, observations of MIS use in the school environment, and documentation of system activities and conditions. Secondary data was obtained from internal school documents related to the implementation of the MIS and relevant scientific literature.

The research procedure was carried out through the stages of data collection, data analysis, and verification of research results. The initial stage was carried out by identifying the implementation of MIS at SMA Negeri 5 Palopo based on the functions of planning, organizing, directing, and monitoring. Next, the researcher conducted interviews with informants, observations of system usage and its supporting conditions, and collected documents related to MIS implementation and factors causing server downtime. The obtained data were then processed through the processes of collection, condensation, presentation, drawing conclusions and verification. The validity of the data was checked through credibility, transferability, dependability, and confirmability, including the use of triangulation to strengthen the suitability of information obtained from various data collection techniques. With these procedures, the research was directed to obtain an overview of MIS implementation at SMA Negeri 5 Palopo and factors related to the occurrence of server downtime.

Results and Discussion

Implementation of Management Information System at State Senior High School 5 Palopo

Based on the results of interviews and observations, the implementation of the Management Information System (MIS) at SMA Negeri 5 Palopo was carried out through planning, organizing, directing or leading, and monitoring (controlling). Data were obtained through interviews with the Vice Principal for Curriculum, Vice Principal for Student Affairs, Administrative staff, teachers, and ICT

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teachers. The MIS is used to support online information management and school administration with access tailored to each user's tasks.

1. Planning of Management Information Systems at State Senior High School 5 Palopo

SIM planning is carried out based on the school's work program, taking into account needs analysis, availability of facilities and infrastructure, involved parties, and human resource readiness. Ms. Dian Novita Sari, Vice Principal for Curriculum, explained that SIM implementation planning is carried out based on the school's work program. Before implementation, the school conducts a needs analysis, compiles a work program, assesses the availability of facilities and infrastructure, and determines the team or parties involved in SIM implementation and management.

The implementation of MIS aims to make data management in schools more effective and efficient, and to produce more accurate data and information. The compiled data can then be used as a basis for decision-making or school policy-making.

Human resource readiness is also part of the planning. Mr. Saharuddin La Isa, Vice Principal for Student Affairs, explained that the school provides attention and guidance through in-house training activities. Several teachers are also given the opportunity to participate in training outside of school, either as participants or facilitators in activities related to management information systems. This training provides teachers with knowledge and experience in using the systems implemented in the school.

SIM usage is done online, with access allocated according to each user's responsibilities. Mr. Husni, an ICT teacher, explained that each user is assigned a username and password to access the application, depending on their duties and responsibilities. SIM application settings are also linked to a system established by the provincial government through the Education Office.

Thus, the SIM planning at SMA Negeri 5 Palopo includes the school's work program, needs analysis, availability of facilities and infrastructure, determination of the parties involved, data management objectives, access sharing, and human resource readiness.

2. Organizing Management Information Systems at State Senior High School 5 Palopo

The organization of the MIS relates to the division of tasks, responsibilities, authority, and access among the involved parties. Ms. Ria, an administrative staff member, explained that the division of MIS management tasks has been adjusted to reflect each party's respective duties and responsibilities. Each party has a specific role and function in supporting the management of the MIS.

Mr. Husni, an ICT teacher, explained that the parties involved in SIM management include the Principal, Vice Principal for Curriculum, Vice Principal for Student Affairs, Student Council Advisor, school operators, and administrative staff. System management is also carried out based on the allocation of access according to user responsibilities.

The division of tasks is evident in the application's use. Teachers input grades through e-Rapor, while attendance is recorded by administrative staff. Before using e-Rapor, teachers receive training to understand its use. Input can be done at school, such as in the computer lab, and some teachers can also do it from home.

Thus, the organization of SIM at SMA Negeri 5 Palopo is carried out through the division of tasks, responsibilities, and access to the Principal, Vice Principal of Curriculum, Vice Principal of Student Affairs, OSIS Advisor, school operators, Administrative staff, and teachers according to their respective needs.

3. Direction/Leadership in the Implementation of Management Information Systems

Guidance relates to providing direction to teachers and staff so they can implement the SIM according to their duties. Based on an interview with Ms. Dian Novita Sari, the Vice Principal for Curriculum, guidance was provided through socialization, mentoring, and training. Before the system was deployed, teachers and staff were provided with an understanding of how to use and implement the SIM. Guidance was also provided so users could operate the system according to their individual needs and tasks.

The human resources involved in operating the MIS are already capable of supporting the system's implementation. However, if any teachers or team members require further competency

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development, the school provides training. The school also provides training and mentoring to help users operate the system effectively and to evaluate the system's management process.

Mr. Saharuddin La Isa, Vice Principal for Student Affairs, explained that the school provides guidance through in-house training. Several teachers also have the opportunity to participate in training outside of school, either as participants or facilitators. The routine training helps teachers understand how to use the SIM. Teachers receive training before inputting the e-Reports.

Based on observations, teachers and staff use the system according to their assigned responsibilities. Therefore, guidance on MIS implementation is provided through outreach, training, mentoring, and in-house training to support teachers and staff in using the system.

4. Supervision (Controlling) of the Implementation of Management Information Systems at State Senior High School 5 Palopo

Monitoring is conducted to determine how the system is operating and areas that require improvement. According to an interview with Ms. Dian Novita Sari, SIM monitoring is conducted by school leaders and relevant parties, particularly school operators. The monitoring results are discussed in meetings and evaluation activities.

Evaluations are conducted through evaluation and coordination meetings to discuss SIM usage and areas that need improvement. If network or data issues are identified, the school conducts checks and coordinates to ensure data management can resume.

Based on an interview with Ms. Ria, an administrative staff member, administrative services are carried out according to procedures and respective duties. Meanwhile, Mr. Husni explained that the SIM helps teachers document and report various activities and performance. Mr. Saharuddin La Isa also explained that the use of SIM helps with learning administration, including the use of e-Reports for managing grades and inputting attendance by administrative staff.

Based on observations, the use of the information system in administrative activities is carried out in accordance with user tasks. Therefore, MIS implementation is monitored through leadership supervision, system checks, coordination, evaluation meetings, and joint discussions on areas requiring improvement.

Factors Causing Server Downtime in the School Management Information System at SMA Negeri 5 Palopo

Based on the interview results, factors related to server downtime in the Management Information System at SMA Negeri 5 Palopo include hardware, software, brainware, data and system procedures, as well as internet and electricity network disruptions.

***1. Hardware*(Hardware)**

The hardware supporting SIM operations includes routers and network devices that allow devices to connect to applications. Mr. Husni, an ICT teacher, explained that because the system operates online, network conditions significantly impact application access. When a power outage occurs, the network can experience disruptions, preventing applications from connecting properly.

Server downtime isn't always caused by user error, but can be related to power outages, network disruptions, environmental conditions, and excessive heat. Ms. Ria explained that while she hasn't directly experienced server downtime due to hardware failure, network and power outages can impact the system. For network or server outages, the school coordinates with the Education Office, and to anticipate power outages, the school provides a generator.

Thus, the hardware generally supports the implementation of SIM, but disruptions to the network, power supply, and environmental conditions can affect system access.

***2. Software*(Software)**

Commonly used software or applications support administrative tasks. However, based on interviews with Mr. Husni, software use can still experience issues related to network issues, viruses, and system security. These issues can impact data within the application, including the appearance of inconsistent data or errors in parent identity and data.

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Ms. Ria also explained that the software used has supported administrative tasks. While the software has met the school's needs, network disruptions, viruses, and system security issues can still impact its use.

3. Brainware(Human Resources)

SIM management involves several parties, each with their own duties and responsibilities. Mr. Husni explained that the division of tasks is based on user access and responsibilities. Because the system is online, each user is assigned a username and password to access the application.

The parties involved in SIM management include the Principal, Vice Principal for Curriculum, Vice Principal for Student Affairs, Student Council Advisor, school operators, and administrative staff. Ms. Ria also explained that system management involves the Administrative staff in collaboration with the Principal and Vice Principal for Curriculum.

Based on interviews, human resource management was implemented through the allocation of tasks and access. User error was not found to be the primary factor causing the server downtime, according to informants.

4. System Data and Procedures

Based on an interview with Mr. Husni, challenges in data management primarily relate to the network and errors or inconsistencies in data received from the Education Office. When network or data issues occur, the school conducts checks and coordinates to restore data management.

The division of tasks in SIM management is carried out according to the access and responsibilities of each user. Application settings are also related to the system established by the provincial government through the Education Office. Ms. Ria explained that system management involves the Administration team in collaboration with the Principal and the Vice Principal for Curriculum.

Thus, constraints on data and system procedures are related to data inconsistencies and the need for checking and coordination when problems occur.

5. Internet and Power Outages

Internet and power outages are the most common factors associated with system access disruptions. Mr. Husni explained that the system sometimes experiences disruptions related to the internet network and power outages, making it temporarily unusable.

Because the system runs online, network conditions significantly impact application access. Power outages can also cause network disruptions, preventing applications from connecting properly. Interruptions can also be related to server conditions and ambient temperature.

To anticipate power outages, the school provides a generator. Meanwhile, if the disruption originates from the network or server, the school coordinates and confirms with the Education Office.

Thus, factors related to server downtime at SIM SMA Negeri 5 Palopo include hardware, software, brainware, system data and procedures, as well as internet and electricity networks. Based on interviews, internet and electricity network disruptions were the most common factors associated with system access disruptions. Other factors include server conditions, environmental temperature, security breaches or viruses in the application, and data errors or inconsistencies. User error was not found to be a major factor causing server downtime, according to informants.

Discussion

Implementation of Management Information System at State Senior High School 5 Palopo

The results of the study indicate that the implementation of the Management Information System at SMA Negeri 5 Palopo was carried out through several stages, including planning, organizing, directing or leading, and monitoring. These four stages are interrelated in the process of managing the information system at the school. The implementation of the MIS involved the Principal, Administrative staff, teachers, ICT teachers, school operators, and several other parties according to their respective duties and responsibilities. The system used is also online so that users can access the application according to their needs and authority.

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The implementation of MIS at SMA Negeri 5 Palopo is used to support information management and school administration. System use is not only related to the availability of technology, but also how the school plans needs, allocates tasks, provides guidance to users, and monitors its use. Therefore, MIS implementation can be seen through the following stages.

1. Planning of Management Information Systems at State Senior High School 5 Palopo

Planning is the initial stage in implementing a Management Information System at SMA Negeri 5 Palopo. Based on research findings, the school first identified the needs related to MIS use, prepared a program, considered available facilities and infrastructure, and identified the parties involved in implementing and managing the system. This planning process was conducted based on the school's work program and began with a needs analysis.

Interviews with the Vice Principal for Curriculum revealed that the implementation of the SIM was prepared based on the school's needs, the availability of facilities, and the readiness of those who would implement it. This suggests that schools do not immediately implement the system without prior preparation. The system's needs, available facilities, and the parties who will implement it are all considered before implementing the SIM.

Furthermore, the planning of MIS implementation is also related to the desired objectives. Based on the research results, the use of MIS is directed towards more effective and efficient data management in schools. The system is also expected to help generate more accurate data and information that can be used as a basis for decision-making and determining school policies. In this regard, the management theory proposed by Taufiq (2013) explains that management is a process related to planning, organizing, directing, and controlling to achieve organizational goals. This concept aligns with the planning carried out by SMA Negeri 5 Palopo because the school first determines the needs, objectives, facilities, and parties involved before implementing MIS.

Planning is not only related to the facilities and systems used, but also includes human resource readiness. Based on research results, schools pay attention to teachers' ability to use the system through in-house training and training outside of school. These activities provide teachers with knowledge and experience in using the information systems implemented in schools. In this regard, the concept of Management Information Systems proposed by Taufiq (2013) places data, processing, and information as interrelated parts of a system. Data originating from various sources becomes the raw material, which is then processed to produce information that can be used by users. Based on this concept, human resource readiness is crucial because users play a role in running the system and managing the information contained within it.

The research results also show that the system used at SMA Negeri 5 Palopo is online. Each user is given a username and password to access the application according to their responsibilities. These access settings are related to the system established by the provincial government through the Education Office. This situation shows that the planning of the MIS at SMA Negeri 5 Palopo includes several interrelated factors, namely school needs, the purpose of using the system, the availability of facilities and infrastructure, human resource readiness, and user access settings. With these preparations, the system implementation can be tailored to the work and needs of each user.

Thus, the planning of the Management Information System at SMA Negeri 5 Palopo was carried out through needs analysis, alignment with the school's work program, provision of facilities, identification of involved parties, and preparation of human resources. This planning served as the basis for the implementation of the MIS, enabling the system to assist in managing school data and information.

2. Organizing Management Information Systems at State Senior High School 5 Palopo

The organization in the implementation of the Management Information System at SMA Negeri 5 Palopo is evident in the division of tasks, responsibilities, authorities, and the involvement of several parties in system management. Based on the research results, the management of the MIS is not carried out by a single party, but involves several school elements according to their respective duties and responsibilities. The Administrative Staff explained that the division of tasks in MIS management has been adjusted to the duties and responsibilities of each. Meanwhile, the ICT Teacher stated that the

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parties involved include the Principal, the Vice Principal for Curriculum, the Vice Principal for Student Affairs, the OSIS Advisor, the school operator, and the Administrative staff. The involvement of these several parties indicates that the management of the information system is related to various information needs in the school.

The division of tasks is also evident in the application's use. Teachers input grades through e-Rapor, while attendance is recorded by administrative staff. Teachers also receive training before using e-Rapor. Furthermore, each user is granted access according to their responsibilities through a username and password. In this regard, Taufiq's (2013) organizational theory explains that organization is concerned with creating relationships between functions, personnel, and physical factors so that activities can be directed toward achieving common goals. Organization is also related to the division of labor, authority, responsibility, and reporting.

This concept can be seen in the implementation of MIS at SMA Negeri 5 Palopo, where work is divided among different parties with their respective responsibilities. Teachers handle tasks related to grade management, administrative staff handle specific administrative tasks, and operators are responsible for system management.

With this division, SIM usage is not centralized in one party, but is implemented collaboratively according to each party's respective divisions. Organization is also evident in the user access settings. Each user does not receive free access, but is adjusted according to their duties and authorities. This helps provide clarity regarding who uses the system and the information related to their work. Thus, the organization of SIM at SMA Negeri 5 Palopo is carried out through the division of tasks, responsibilities, authorities, and access to the parties involved. This division helps implement information management so that each user can carry out their work according to their duties.

3. Leading in the Implementation of Management Information Systems at State Senior High School 5 Palopo

Guidance is a component of the program designed to assist teachers and staff in implementing the Management Information System (MIS) in accordance with their duties. Based on the research findings, the Principal provided guidance through outreach, mentoring, and training. This guidance was provided before and during system use to ensure teachers and staff understood how to use the MIS and were able to implement it appropriately. Interviews indicated that the human resources involved in the MIS operation were generally competent in operating the system. However, if any users needed to improve their competency, the school provided training and mentoring. Teachers also received guidance through in-house training and opportunities to participate in training outside of school.

Guidance is also provided in the use of specific applications. Before using e-Rapor, teachers first receive training to understand how to use it. Thus, guidance is not only given in general terms but also tailored to the application and the work performed by the user. In this regard, the theory of leading proposed by Taufiq (2013) explains that direction is an effort to ensure that something that has been planned and organized can be implemented. Direction relates to providing understanding, guidance, motivation, and creating cooperation between the directing party and the directed party.

This concept is evident in the implementation of MIS at SMA Negeri 5 Palopo, through the principal's role in providing guidance to teachers and staff. Users are not only given access to the system but also provided with an understanding of how to use it. Training and mentoring serve as a form of guidance that helps users adapt the system's use to their assigned tasks. Regular training also provides opportunities for teachers and staff to improve their skills in using the system. This demonstrates that guidance in MIS implementation is not only in the form of instructions, but also includes support so that users can operate the system.

Observations indicate that users operate the system in accordance with their assigned responsibilities. This finding aligns with interviews, which indicated the presence of socialization, training, mentoring, and in-house training in the implementation of MIS. Therefore, guidance in the implementation of MIS at SMA Negeri 5 Palopo is provided through socialization, mentoring, training, in-house training, and opportunities for teachers to participate in training outside of school. This guidance helps users understand the system's use and carry out information management tasks according to their respective responsibilities.

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4. Supervision (Controlling) of the Implementation of Management Information Systems at State Senior High School 5 Palopo

Supervision is conducted to determine how the Management Information System is operating and identify areas that still need improvement. Based on research results, supervision of MIS usage is carried out by school leaders together with parties involved in system management, particularly school operators. The results of the supervision are then discussed in meetings or evaluation activities. Supervision is carried out through monitoring system usage and examining emerging issues. If problems are encountered, the school conducts checks and coordination. Evaluations are also conducted through meetings and coordination to discuss areas that still need improvement and determine next steps.

During implementation, one of the obstacles encountered was related to the network, and sometimes errors or inconsistencies in data received from the Education Office occurred. When these problems occurred, the school conducted checks and coordinated to ensure data management could resume. In this regard, the theory of supervision (control) proposed by Taufiq (2013) explains that supervision is an effort to provide guidance to implementers to ensure activities continue according to plan. Supervision includes setting standards, checking activities, comparing results with standards, and taking corrective action on areas requiring improvement.

This concept is evident in the implementation of the SIM at SMA Negeri 5 Palopo through monitoring, checking, coordination, and evaluation. Supervision is conducted not only to determine whether the system is being used, but also to determine the condition of system use and any problems that arise. When network or data problems are encountered, the school conducts checks and coordination as a form of follow-up. Supervision is also related to school administrative services. Based on research results, administrative services are still carried out in accordance with procedures and the division of tasks. SIM helps teachers document and report activities and performance. In addition, the use of e-Rapor facilitates administrative work related to learning, while attendance input is handled by the Administration staff.

This demonstrates that supervision goes hand in hand with coordination and evaluation. The results of the supervision can be used to identify areas that still need improvement. Thus, supervision helps schools ensure that the use of the SIM remains in line with established needs and tasks. Based on the description, supervision of SIM implementation at SMA Negeri 5 Palopo is carried out through monitoring, checking, coordination, evaluation meetings, and joint discussions. This supervision helps the school understand the condition of system use and take follow-up action on any problems identified.

Factors Causing Server Downtime in the School Management Information System at SMA Negeri 5 Palopo

Based on the research focus on the factors causing server downtime in the School Management Information System at SMA Negeri 5 Palopo, several aspects are of concern, namely hardware, software, human resources (brainware), system data and procedures, and internet and power outages. These five aspects are interrelated because an information system is a unit consisting of various components that work in an integrated manner. In this study, these factors serve as the basis for examining the causes of disruptions in the school management information system.

1. Hardware Factors

Hardware is one of the factors that can influence the smooth operation of a school Management Information System. Servers, computers, input and output devices, communication networks, and other supporting devices are crucial for running an information system. If any of these devices is damaged or unable to function optimally, it can hinder system access and services. This aligns with the information system component theory, which explains that hardware is the physical infrastructure that supports information system operations, including servers, computers, input/output devices, communication networks, and other supporting devices (Nitami et al., 2021).

Thus, hardware condition has a direct relationship with the continuity of the system because the server is one of the main devices where the processing and provision of information takes place. Based on this, if hardware is found to be experiencing problems, limited capacity, damage, or not receiving optimal maintenance, then this condition can be one of the causes of disruption to the Management

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Information System at SMA Negeri 5 Palopo. Hardware problems not only impact the device itself, but can also cause users to experience difficulties in accessing the system.

2. Software Factors

Besides hardware, software is also a factor that can disrupt management information systems. Software functions as instructions and programs that regulate how hardware operates and how data is processed. Therefore, disruptions to applications, operating systems, or database management systems can impact overall system performance.

This aligns with the theory of information system components, which explains that software consists of instructions and programs that regulate hardware operations and data processing. Software consists of system software and application software, each of which has a function in supporting information system operations (Nitami et al., 2021). Therefore, if a system error, application disruption, configuration error, or problem with the software in use occurs, it can result in the system not functioning properly. This condition can ultimately result in the Management Information System service being inaccessible or experiencing server downtime.

3. Human Resources Factors (Brainware)

Human resources are a crucial component in the operation of a Management Information System. A good system will not function optimally if its users or administrators lack adequate skills in using and managing the system. System users include those involved in the operation, management, maintenance, and development of the information system.

This aligns with the information system component theory, which explains that humans are one of the main components in an information system, including end users, system analysts, software developers, network administrators, and other parties involved in the development, management, and use of information systems (Nitami et al., 2021). Humans are also the most dynamic component and are vulnerable to the risk of error. Based on this theory, the ability and accuracy of human resources in operating a Management Information System are crucial. Errors in the operation, management, or maintenance of the system can cause system disruption. Therefore, user readiness and competence are essential to ensure optimal system use and minimize disruptions caused by human error.

4. Data Factors and System Procedures

Data is a crucial component of a Management Information System because it serves as the source that is then processed into information. In addition to data, procedures are also needed to regulate how data is collected, processed, stored, and distributed. Irregularities in data management or poorly implemented procedures can impact information system performance. This aligns with the theory of information system components, which explains that data is a resource that is processed into useful information, while procedures are the rules and methods that govern the collection, processing, storage, and distribution of data. Procedures also reflect the business processes and operational standards implemented within an organization (Nitami et al., 2021).

Thus, poor data management and inadequate procedures can hinder the performance of a Management Information System. Poorly managed data can disrupt information processing, while unclear procedures can lead to errors in system use and management. Therefore, regular data management and the implementation of procedures are necessary to maintain the system's smooth operation.

5. Internet Network and Electricity Disruption Factors

Internet and electricity networks are crucial supporting factors in running a technology-based Management Information System. Systems requiring a network connection cannot be used optimally if the internet connection is interrupted. Similarly, power outages can cause devices and servers to stop operating properly.

This aligns with information systems theory, which explains that an information system is a network of interacting components that collect, process, store, and distribute information to support decision-making and management (Ismanto, 2024). Therefore, the sustainability of the system is highly dependent on the connectivity and cooperation between the components that support the system's

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operation. Internet network disruptions can prevent users from accessing services available in the system, while power outages can temporarily stop the devices used to run the system. Therefore, internet network stability and electricity availability are supporting factors that need to be considered in maintaining the sustainability of the Management Information System at SMA Negeri 5 Palopo.

Overall, the factors causing server downtime in a school's Management Information System are not limited to a single aspect, but can be related to hardware, software, human resources, data and procedures, as well as the internet and electrical networks. This aligns with Management Information Systems theory, which explains that a Management Information System is an integrated system of people and machines that provides information to support operations, management, and decision-making functions within an organization (Taufiq, 2013).

Thus, the sustainability of the Management Information System at SMA Negeri 5 Palopo requires integration between people, devices, data, procedures, and supporting infrastructure. If any one element experiences a disruption, it can impact the performance of the entire system. Therefore, efforts to maintain devices, update and monitor software, improve user capabilities, manage data and procedures effectively, and provide a stable internet connection and electricity are essential to reducing server downtime and ensuring the Management Information System can effectively support administrative activities and educational services.

Conclusion

This study shows that the implementation of the Management Information System at SMA Negeri 5 Palopo is carried out through the functions of planning, organizing, directing (leading), and monitoring (controlling). MIS is used to support the management of school information and administration, including the management of grades through e-Reports, attendance, documentation, reporting, and administrative services. The implementation involves the principal, vice principal, teachers, administrative staff, operators, and ICT teachers according to their respective duties and authorities. The study also found that factors related to server downtime include hardware, software, brainware, data and system procedures, internet network, and electricity. Internet network and electricity disruptions are the factors most often associated with system access disruptions, while other factors include server conditions, environmental temperature, security or virus disruptions in applications, and data inconsistencies.

The limitations of this study lie in its focus on a single school using a qualitative descriptive approach, resulting in the results describing the implementation of SIM in the context of SMA Negeri 5 Palopo and not being able to describe the conditions of other schools more broadly. Future research could expand the research location, involve more informants, and combine qualitative and quantitative approaches to obtain a broader picture of the effectiveness and reliability of SIM. Practically, the research results can provide material for schools to strengthen planning, task allocation, user training, system monitoring, data management, and maintenance of supporting devices and infrastructure. Provision of a stable internet network, backup power sources, and coordination with relevant parties are also necessary to maintain the continuity of SIM access.

Bibliography

Ansar, A., & Makbul, M. (2021). Implementasi sistem informasi manajemen di SMA Negeri 17 Makassar. *Bacaka: Jurnal Pendidikan Agama Islam, 1*, 13–21.

Grepon, B. G., Baran, N., Gumonan, K. M. V., Martinez, A. L., & Lacsa, M. L. (2022). Designing and implementing e-school systems: An information systems approach to school management of a community college in Northern Mindanao, Philippines. *International Journal of Computing Sciences Research, 6*, 792–808. https://doi.org/10.25147/ijcsr.2017.001.1.74

Haq, M. S. (2022). Implementasi sistem informasi manajemen dalam meningkatkan pelayanan pendidikan sekolah di masa pandemi COVID-19. *Jurnal Inspirasi Manajemen Pendidikan, 9*, 1221–1235.

Ismanto, J. (2024). *Sistem informasi manajemen* (U. T. Arsa, Ed.). PT Adab Indonesia.

Masrizal, M. D. N., & Munthe, A. A. (2021). Sistem informasi reservasi Hotel Rantauprapat berbasis web dengan framework CodeIgniter. *1*, 7–17.

https://doi.org/10.61536/ambidextrous.v5i03.922
This open-access article is distributed under a Creative Commons Attribution (CC-BY-SA) 4.0 license

Tanzeh, H. A. (2018). *Penelitian kualitatif*. Akademia Pustaka.

Taufiq, R. (2013). *Sistem informasi manajemen: Konsep dasar, analisis dan metode pengembangan* (Ed. 1). Graha Ilmu.

Wijaya, W. M., & Risdiansyah, D. (2020). Dampak implementasi sistem informasi manajemen pendidikan pada kegiatan akademik di sekolah: The impact of the implementation of education management information systems on academic activities in schools. *Jurnal Penelitian Pendidikan, 20*, 129–135.

Yusuf, I. A. W., & Hafidh, Z. (2024). Analisis penggunaan sistem informasi manajemen bidang kurikulum di SMA PGII 1 Bandung. *Jurnal Tata Kelola Pendidikan, 6*, 1–14.

https://doi.org/10.61536/ambidextrous.v5i03.922
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