The Implementation of Information Systems in Facilities and Infrastructure Management at Muhammadiyah Vocational School 2 Salam

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Abstract

Information systems in the current era is use important role in everything. In general, information systems play an important role as a single source of information that is easily accessible and as a material for making decisions regarding educational implementation programs. One aspect that requires the implementation of information systems is facilities and infrastructure. In general, facilities and infrastructure cover everything that is important within the material scope of the school. The aim of this research is to reveal an overview of the efforts of SMK Muhammadiyah 2 Salam in implementing information systems and their functions in managing school facilities and infrastructure. The research method used in this research is qualitative with a case study approach. The data collection technique was carried out by means of in-depth interviews. Data validation uses the member check technique while data analysis uses thematic techniques which include: 1). Reduction; 2). Presentation; 3). Conclusion. The results of the research explain that the implementation of information systems in facilities and infrastructure management efforts at Muhammadiyah 2 Salam Vocational School is still experiencing various obstacles. Some of these obstacles are the budget and organizational communication which is not yet effective.

Abstrak

Sistem informasi di era sekarang berperang penting dalam segala hal, salah satunya pada aspek pendidikan. Secara umum sistem informasi berperan penting sebagai sumber informasi tunggal yang mudah diakses serta sebagai bahan untuk pembuatan keputusan terkait program pelaksanaan pendidikan. Salah satu aspek yang memerlukan penerapan sistem informasi adalah sarana dan prasarana. Secara umum sarana dan prasarana mencakup secara keseluruhan apa saja yang penting dalam lingkup sekolah yang bersifat material. Tujuan dari penelitian ini adalah untuk mengungkap terkait gambaran upaya SMK Muhammadiyah 2 Salam dalam menerapkan sistem informasi serta fungsinya dalam pengelolaan sarana dan prasarana sekolah. Metode penelitian yang digunakan dalam penelitian ini adalah kualitatif dengan pendekatan studi kasus. Adapun teknik pengambilan data dilakukan dengan cara wawancara mendalam. Validasi data menggunakan teknik member check sedangkan analisa data menggunakan teknik tematik yang meliputi: 1).Reduksi; 2).Penyajian: 3).Kesimpulan. Hasil penelitian menjelaskan terkait penerapan sistem informasi pada upaya manajemen sarana dan prasarana pada SMK Muhammadiyah 2 Salam masih mengalami berbagai hambatan. Adapun beberapa hambatan tersebut adalah pada anggaran serta komunikasi organisasi yang kurang belum efektif.

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1. INTRODUCTION

The 4.0 industrial revolution ushered in major changes in all aspects, including the world of education. Specifically, the industrial revolution has led to dynamic changes in the running of the national education system, more towards big data systems and learning tools that make education management activities easier. Heryana, Setiawan and Suhendra(2019)explained that information systems, especially big data, play an important role in guaranteeing and providing various information in decision-making efforts and even creating an independent process system. Mayasari, Supriani, and Arifudin (2021)also revealed that information systems play a very

important role in all aspects of implementing education management, especially in planning, implementation and evaluation of educational programs as a whole.

One area that really needs the role of information systems in the scope of education is facilities and infrastructure. Ellong (2007)explains that facilities and infrastructure in the realm of education start from procurement, inventory, supervision, maintenance to the elimination of educational facilities and infrastructure.

The large amount of inventory and space that supports the implementation of learning activities means that recording and maintaining facilities and infrastructure will not be easy, this is the reason why implementing an information system is very important to make it easy for schools to record, monitor and determine the suitability of each facility and infrastructure. There is. According to Bancin and Lubis (2017)Facilities and infrastructure that can be managed well will make education management, especially school management, good in accordance with existing competency standards. The Minister of Education Regulation No. 24 of 2007 explains more or less the standards of infrastructure that must be met in education, especially schools, as follows: 1. Classrooms; 2. Laboratory; 3. Computer Laboratory; 4. Bathroom; 5. Library; 6. Sports Fields and Facilities; 7. Religious Facilities and Worship Spaces; 8. Arts and Cultural Facilities; 9. Office; 10. Warehouse; 11. Parking; 12. Cafeteria/Canteen; 13. Rest Room; 14. Security Post; 15. Waste Management Site; 16. School Kitchen; 17. UKS room; 18. School Guard House. Based on these facilities and infrastructure standards, it is important for schools to record records in a well-managed data system. Based on these problems, information systems play a very important role, especially as big data in recording, so that it can ultimately be used as a reference for budgeting and decision-making regarding school policies. From this background, the researcher wants to explore and describe the management of information systems as a medium for managing facilities and infrastructure in the school environment.

The researchers have conducted a survey at one of the schools, namely SMK Muhammadiyah 2 Salam, which is a Vocational High School located in the Krakitan area, Salam District, Magelang Regency. The results of a survey conducted by researchers in the form of initial interviews with the Deputy Principal for Facilities and Infrastructure found that the implementation of facilities and infrastructure management had not been fully implemented well. Therefore, researchers want to reveal in depth what things might become obstacles in schools managing facilities and infrastructure as well as the role of information systems in managing these facilities and infrastructure. Based on this background, the researcher wants to conduct research with the title "Implementation of Information Systems in Facilities and Infrastructure Management at Muhammadiyah 2 Salam Vocational School". The aim of this research is to reveal how the school's efforts, especially SMK Muhamamdiyah 2 Salam, are implemented in managing facilities and infrastructure by involving the role of information systems.

2. METHOD

In this research, the researcher wants to conduct research in the Muhammadiyah 2 Salam Vocational School environment and specifically use the Deputy Principal of the Facilities and Infrastructure Section (K) as the main resource person. The most appropriate method used in this research is a qualitative research method with a constructivist paradigm. In this research, the researcher wants to use a case study approach as the type of approach. Qualitative research is research that emphasizes the constructivist paradigm point of view where a person's various subjective interpretations of a case can be explored as data.(Creswell 2015). Meanwhile, the case study approach is an approach that explores an issue or problem so that it can give rise to a detailed understanding Creswell (2021). The data collection technique is in the form of in-depth interviews, according to Yona (2006)In-depth interviews are a technique used to dig deeper into a phenomenon being researched. The questions asked were open questions that were unstructured in nature with the aim of allowing researchers to develop questions and create an interview atmosphere that did not seem stiff. Meanwhile, for data validation, the author uses the Member check technique. Member check is a data checking process carried out directly at the data source.

This is done with the aim that the information obtained in the research report is in accordance with what was intended by the data source or informant(Mekarisce 2020). Meanwhile, data analysis was carried out using thematic techniques which included: 1). Data reduction; 2). Data Presentation; 3). Conclusion(Heriyanto. 2018).

3. RESULTSANDDISCUSSION

The researchers present the results data related to the existing facilities and infrastructure at the Muhammadiyah 2 Salam Vocational School, including the following:

NO	TYPES OF SARPRAS	STATUS	FREQUENCY
1.	Classroom	Available	9
2.	Vocational Laboratory	Available	2
3.	Computer lab	Available	1
4.	Bathroom	Available	6
5.	Library	Available	1
6.	Sports Fields and Facilities	Not yet available	0
7.	Religious Facilities and Worship Spaces	Available	1
8.	Arts and Culture Facilities	Available	1
9.	Office	Available	6
10.	Warehouse	Available	2
11.	Parking	Available	2
12.	Cafeteria	Available	1
13.	Rest Room	Not yet available	0
14.	Security posts	Not yet available	0

15.	Waste Management Site	Available	1
16.	School Kitchen	Not yet available	0
17.	UKS room	Available	1
18.	School Guard House	Available	1

Table 1. List of Facilities and Infrastructure Availability at Muhamamdiyah Vocational School 2 Salam

Based on table 1. It is known that in terms of reference to Minister of Education Regulation No. 24 of the Year2007Regarding the eighteen standards for school facilities and infrastructure, SMK Muhammadiyah 2 Salam has fulfilled fourteen aspects so that there are four aspects that have not been fulfilled, namely Sports Fields and Facilities, Rest Room, Security Post and School Kitchen.

Basically, management of facilities and infrastructure can be interpreted as an activity that regulates the preparation of all material equipment for the implementation of the educational process in schools.(Ananda and Banuera, 2017). The general results of the interview have explained that the description of the facilities and infrastructure according to the interviewee's point of view (K) is that they are not fully in accordance with standards because there are still many deficiencies in several aspects.

Overall, Muhammadiyah 2 Salam Vocational School has met approximately fourteen out of a total of eighteen standards for school facilities and infrastructure. There are several shortcomings in four aspects, namely not having sports fields and facilities that meet standards, not having a rest room for both school residents and school guests, not having a security post and not having a school kitchen. Specifically, this data was obtained based on the efforts of SMK Muhammadiyah 2 Salam in utilizing various tools to help collect data on school facilities and infrastructure so that this is closely related to the information system. In general, all data collection activities related to schools, including facilities and infrastructure for SMK Muhamamdiyah 2 Salam, still depend entirely on the Dapodik application. In general, the school fully uses the Dapodik application in data collection efforts, especially regarding recording and recording inventory of school facilities and infrastructure. The role of Dapodik is as the main data source which in several fields is used as reference data in the school's efforts to procure goods using assistance from the government.

"…Later we will share a link like that, or we will share a infrastructure data collection sheet. Then we give it to each section, after that in the data, once the data is complete, we enter the data into something called Dapodik. Dapodik is complete with regard to infrastructure, land, buildings, rooms, plus all the equipment..." (K)

Meanwhile, in the school's efforts to obtain data internally, the facilities and infrastructure always collaborate with the person in charge of each room. The efforts made by the Head of Facilities and Infrastructure are to utilize the Google Form application with the aim of making it easier for each person in charge of the room to collect data. However, so far the communication and cooperation that has taken place has only been limited to communication between the head of facilities and infrastructure and those in charge of laboratories and workshops. Jaya, Susilowati, and Akhdiyat (2023)in his research on the management of laboratory facilities and infrastructure at the University of Mataram, he explained that the use of the Google Form application is effective and can be used in efforts

to inventory and record borrowing and use of tools in certain environments. However, the data results found at SMK Muhammadiyah 2 Salam were different, namely that the use of Google Forms did not run smoothly due to human resource management factors at the school.

"...Sometimes there are those who say that collecting data using the G-form link feels complicated, so now data collection is often done manually using a filling sheet..." (K)

Several obstacles experienced by the head of facilities and infrastructure in efforts to implement information system management in schools. One of these obstacles is the implementation of the recap which is felt to be complicated because there is an obligation to carry out the recap twice on different websites, namely on Dapodik and SIMAM. SIMAM is a Muhammadiyah program related to efforts to collect inventory data, assess, optimize and develop assets from property owned by Muhammadiyah(Luthfi and Hartini, 2022). However, the data found was that SMK Muhammadiyah 2 Salam experienced difficulties in recapping the data which was carried out twice because the information system owned by SIMAM was not yet synchronized with Dapodik which is the main website as the sole source of school data, especially inventory.

"…there is a website called the SIMAM website. So, because of the data collection, schools have to work twice as hard. The problem is that SIMAM data at Muhammadiyah is sometimes not in sync with data at Dapodik. So, we have to fill in Dapodik and we also have to fill in SIMAM. So, it's double..." (K)

Apart from that, obstacles were also found in the internal management of facilities and infrastructure within the Muhamamdiyah 2 Salam Vocational School. The management problems can be seen in the miscommunication between the head of facilities and infrastructure and the person in charge of the workshop, such as efforts to add goods that are directly used without recording them in a clean warehouse by the head of facilities and infrastructure. Issues related to organizational communication are very important to be designed and implemented well because they affect the success of management efforts in any field, including management of facilities and infrastructure. Daniin his research at the Bunga Bangsa Islamic School in Samarinda, he found results in the form of a significant relationship between organizational communication and management behavior, which means that the better organizational communication efforts are carried out, the more this will influence the quality of management behavior in an organization.

"Yes, sometimes it's like the infrastructure department and the workshop section, the laboratory section, sometimes they buy equipment but don't go through a clean warehouse, so the infrastructure department doesn't keep inventory records..." (K)

From these various obstacles, participants have an understanding of ideal solutions that can be implemented in an effort to overcome obstacles in efforts to manage facilities and infrastructure in order to make the information system in the school run well. From this, the implementation of the Room PIC program is an initial effort that can be made in dealing with organizational communication problems between the person in charge of the room and the head of facilities and infrastructure. PIC in general is an effort to hand over the entire process of implementing the procurement of material goods in full within certain scope limits(Citra and Dhamiri 2020). If related, then the meaning of room PIC is the giving of full responsibility from superiors such as the school principal or head of infrastructure to those who have PIC authority in a particular room or environment. In other words, all conditions and situations related to the existence of each material item contained in detail are the responsibility of the PIC position holder.

"…for each room there should be an activated PIC or person in charge of each room in the school. So the PIC is fully responsible for the room, starting from collecting data on items, maintenance and so on. So, if there is damage or equipment is missing, then you have to report it to the Infrastructure Agency for data. "Apart from that, if any goods come in or out, they

have to go through what is called a clean warehouse to be recorded by the infrastructure and input into the school inventory data." (K)

Apart from the management evaluation, the budget is also a factor that influences the success of implementing information systems in facilities and infrastructure management. Siregar (2019)in his research explains that budget quality significantly influences the quality of management information systems in an organization.

"... there is a RAB but the school's finances don't exist, which means there won't be any procurement." (K)

"So actually, the biggest problem is the budget, the budget and management which has so far hampered the management of infrastructure." (K)

In general, budget and organizational communication are important factors in creating good facilities and infrastructure management efforts. This will affect the quality of the implementation of the information system in the school environment so that it can be implemented well.

4. CONCLUSION

From the data analysis that has been carried out, the researchers draw conclusions regarding the implementation of the information system at Muhammadiyah 2 Salam Vocational School in general has not been fully implemented optimally. This is proven by the fact that several obstacles are still found which prevent the implementation of management of facilities and infrastructure and the use of information systems from running as they should. Obstacles in the form of problems related to limited school budgets and ineffective implementation of organizational communication have resulted in obstacles to data collection on facilities and infrastructure so that the implementation of information systems as a single data recap and master data function has not been fully implemented well. Ideally, if various obstacles can be resolved well then this makes it possible for management and implementation of information system functions to run well. When the information system can be neatly organized, it can make it easier to find information about anything related to the school in question, especially information related to facilities and infrastructure.

5. SUGGESTION

From the conclusions that have been described, the researcher provides suggestions for future researchers to be able to create an information system that specifically aims to be website or mobile app based in its application to the management of facilities and infrastructure, especially in educational institutions under the Muhammadiyah foundation which is directly tied to the SIMAM information system as variables or research topics that can be addressed in subsequent research. Obtaining in-depth information related to SIMAM can make literature related to information systems, especially for education under Muhammadiyah, richer and more complementary to each other.

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