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Implementation of Student Management Information Systems in Pondok Pesantren Nurul Haramain Nw Putri Narmada-West Lombok

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Abstract

This study aims to: (1) find out the application of a model of school information processing in the Nurul Haramain Islamic School NW Putri Narmada-West Lombok which includes development procedures, information system planning stages, (2) finding software, hardware, and brainware specifications in accordance with the needs of developing SIP in Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok and (3) knowing the testing phase of the Islamic Boarding Information System (SIP) application. This study uses a qualitative approach with the aim of understanding social phenomena through a holistic picture and increasing in-depth understanding specifically about the Pesantren Information System (SIP). Data collection techniques used interviews, observation and documentation by utilizing primary and secondary data sources. The data analysis technique used in this study is an interactive model analysis technique. The results of this study indicate that the level of effectiveness and maximum efficiency of SIP, as well as the ability of the data generated by some of the main menus it has. Utilization of technology as a basis for management, especially in the student field is a must because students (santriwati) are one of the important factors in the continuation of an education in school.

Keywords: Management Information Systems; Students

Introduction

Technology in Indonesia is increasingly developing and massive in various fields, especially in the world of education. Even today, existing education has entered 21st Century learning that synergizes with Industry 4.0, which can indirectly change the educational setting because of the many innovations gained from digital technology. Therefore, every education provider must be able to utilize and implement and implement various advantages and conveniences possessed by technology in the framework of achieving the quality of education in an educational institution.

But the reality that occurs in education in Indonesia, educational unit institutions are still lacking in terms of the application of technology in various school activities. The conventional methods with manual systems, are still the main choice for education units. Reported by Radio Republik Indonesia in

2019 there were 207 villages in the province of West Nusa Tenggara included in the blank spot category, an area that was untouched by internet signals. Then it can be ascertained that schools in the blank spot area have not implemented information and communication technology in management.

One of the many types of technology utilization in education, Management Information Systems (MIS) are the main choice for an educational institution. Raymond McLeod Jr (1996: 54) suggests that SIM is a computer-based system that provides information for users with similar needs. Meanwhile, according to Gordon B. Davis in the book 'SIM Basic Framework', SIM is a new technology uptake to organizational issues in processing transactions and providing information for organizational interests (Gordon B. Davis, 1985: 23). Information output can be utilized by managers and non managers in the company to make decisions in solving problems while Anggadini (2014) revealed that management is accurate and effective, in fact always related to the term computer based or computer-based information processing.

Management Information Systems (MIS) have a broad scope of management such as student affairs, staffing, finance and others and have different naming based on the background of the specifications for their use. Educational services in educational institutions, especially in the field of student affairs can generally be more targeted and faster when using technology facilities. Student sector is one of the four fields contained in the education unit at the secondary level apart from the curriculum, public relations and infrastructure facilities. The student field is the most central part in a school because it touches directly on all student activities both in intracurricular and extracurricular activities whose aim is to develop the potential and service to students.

Broadly speaking, Asnawir groups student administration into three areas, namely: 1) Pupil Inventory, is a list that describes the data of students who will enter an educational institution or school so that it can function to find a picture of the conditions of students / students who will enter school these, 2) Pupil Accounting, is the compilation of information about the behavior of students / students during school which includes the problems of students who do not go to school, students who leave lessons at school, students who are often late and so on, 3) Pupil Service Personnel, is all services and all efforts undertaken by the school for the progress of students / students. The services and businesses in question are in the form of guidance and counseling for students / students who need them, so that students can find out how the steps of learning and the application of appropriate lessons in their lives.

The use of information technology in organizations can cause changes to the organizational structure and work processes (Turban, 2004). Educational services in educational institutions in particular or services in organizations in general can be more targeted and faster when using information technology facilities. Turban (2004) further states that the application of information technology has a fundamental impact on organizational change including the reporting structure, supervision, substance of work, and division of labor. In addition, the use of information technology can increase the productivity of managers, increase supervision, and reduce the number of middle level managers so that a more uniform organizational structure is obtained. This organizational structure is more horizontal, more decentralized,

The fact that occurred during these student data collection activities despite using a computer, but it is still a manual type input system using Ms. application. Office Exel and Word. With this data collection, documents are only stored in the administration and vice principal field of student affairs. This is certainly more or less difficult for other parts that intersect directly with students, such as Counseling Guidance (BK) where the need for information and data of students is an absolute. Besides updating the latest data, the condition of students is not necessarily done by each of these sections, so that it will cause differences in student data and information from each field.

In contrast to other formal education, Islamic boarding schools in services to students are more holistic and complex given the existence of accommodation for students so that the activities they do even for 24 hours are within the scope of Islamic boarding schools, which then affects the diversity of services to students. In addition, the process of monitoring and evaluation of students can be well integrated. (Patmanthara, 2012) the use of information and communication technology (ICT) as a means of managing learning systems in formal education, non-formal education and in schools to support the expansion and equity of education in Indonesia.

Based on the thought that between systems, information and management can be connected to a unity, a management information system is developed in the form of student information systems in the form of Pesantren Information Systems (SIP). SIP was developed based on the needs contained in Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok in the student field which is an integrated and integrated system based on computer technology developed in the internal sphere by utilizing the human resources available in the pesantren environment as the main management of the SIP which include (1) Main Data along with Santriwati's complete biodata, (2) Parenting which includes violations, visitation and licensing, (3) Finance which functions as a data management center for all forms of female student payments, and 4) New Santriwati Reception (PSB). This SIP assists the management of the pondok in matters relating to female students in this case integrated student technology-based computer.

The purpose of this research and development is to (1) find out the application of a model of school information data processing in the Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok which includes development procedures, information system planning stages, (2) finding software, hardware specifications, and brainware that is in accordance with the needs of developing SIP in Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok, and (3) as well as knowing the testing phase of the Pesantren Information System (SIP) application.

Methodology

This research was conducted at Nurul Haramain Islamic Boarding School NW Putri Narmada, West Lombok with the research approach used was a qualitative approach with a case study method. According to Moleong (2018: 31) the qualitative goal is to understand social phenomena through a holistic picture and to deepen understanding. Sources of data in this study are primary data sources and secondary data. Primary data sources were carried out by exploring the original sources of responsiveness which in this case consisted of school principals, teachers, employees (employees) and female students, while secondary data sources were obtained from the words, language and actions of the informants. Data collection techniques used were observation, interviews and documentation.

Data analysis in qualitative research is different from other types of research. Sugiyono (2015: 245) mentions the analysis of qualitative research data and focused data collection during the field process. In this study using Miles and Huberman model data analysis which consists of several stages including data collection (data collection), data reduction (data reduction), data presentation (display data), and conclusions (conclusion drawing / verification).

Management Information System Development Procedure

The system development method used in the development of information systems is a development model SDLC (System Development Life Cycle) which is a software development model that is often used in software engineering. So many cycle pattern models exist but have the same pattern.

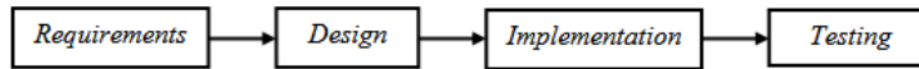


Figure 1. Overview of the SDLC model scheme

Based on the picture above, it appears that each process produces output that is used as input at a later stage. The details of each stage of the SDLC model are as follows:

1. Requirements

At this stage the system requirements from all stakeholders and users are identified. Who uses the system, how to use the system, what data is input to the system, which outputs are usually submitted to obtain the system requirements data. The documentation produced at this stage takes the form of data functionality provided by the system, the data processing flow, the form and type of data used by the system, and the interfaces required by the system.

2. Design

This stage is passed after the requirements phase is completed. At this stage the detailed system design that is made is described, including hardware, software, communication, and software design.

3. Implementation

At this stage the coding is done, and this stage is the longest stage carried out in the development of a system, at this stage overlap is also likely to occur frequently.

4. Testing

During the testing process, the application system or software is tested. Unit tests and systems or acceptance tests are carried out at this stage. Unit tests function to see the functionality of system components, while the system or acceptance test tests the system as a whole from the system flow that is made.

Result and Discussion

⁷ Management Information System (SIM) is a human or machine system that is integrated to present information to support the operations and management functions of decision making in an organization. Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok developed its own Management Information System (SIM) named the Pesantren Information System (SIP) which starts from a good plan that can be used as a foundation for further activities, so the planning needs to be arranged well and measured. In an implementation of Management Information Systems generally need to be planned well because planning is the initial foundation so that the objectives set can be achieved.

In exploring the data and facts of this study so as to obtain a complete picture of the application of the Pesantren Information System (SIP), researchers found that the application was created by Nurul Hardam himself. This certainly is a distinct advantage for researchers, because the data and facts obtained come directly from sources developing the application. So far what has happened is that very rarely schools or educational units create their own applications for both internal and external needs. Most of these schools get applications with the purchase system or get them for free.

But keep in mind, the 'free' system has very limited features. Although schools sometimes buy management information system applications there are also several obstacles that occur such as the difficulty of communication between developers and buyers (users) considering that most application developers are from Java. This causes a 'gap' of user communication originating from outside Java if the user experiences problems and difficulties in using the application product. Therefore, researchers in this case can explore the widest possible information regarding the use of the Pesantren Information System (SIP) implemented by Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok.

Islamic Boarding School Information System (SIP) Nurul Haramain Boarding School NW Putri Narmada-West Lombok has fully utilized ICT. This can be seen from the organization of hardware (hardware) and software (software) for the development of the Pesantren Information System (SIP) itself. In terms of organizing users (brainware) who will operate the SIP, the use of ICT is more visible in the competencies of the respective users, where each user is skilled and proficient in operating the Pesantren Information System (SIP).

The implementation of quality in the form of pesantren information system (SIP) at Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok starting from the facilities for PSB, Visitation, Licensing and Finance has been based on ICT in all activities carried out.

Every organization in the initial step of carrying out all activities in its organization must be preceded through a planning process. Good planning can be used as a foundation for further activities, so planning needs to be arranged well and measured. All the planning about things that are done are planned in the work meeting conducted at the beginning of the school year, while the planning process for implementing the Pesantren Information System (SIP) at Nurul Islamic Boarding School Pesantren Information System (SIP) has been started since 2013 and continues to improve and be used until currently.

Student Data Collection System

The student data collection system is carried out when a female student registers for a new female student acceptance. The data is divided into two namely, manual data and digital data which will be the database (database) of the Pesantren Information System (SIP). Data updating can be done at any time so as to produce valid data that can be used at any time. With a data collection system like this, documents are stored and utilized in several places, namely in the administration section, vice principals in the field of student affairs, deputy head of school curriculum and BK.

Requirements

SIP is carried out by compiling a one-year work program which is divided into two, namely the semester 1 work program and the semester 2 work program. This is important to see to what extent the annual program can be implemented, which is measured once every 6 months. Next is the formation of the KMI (Kulliyatul Mu'allimin Al-Islamiyyah) whose task is to take care of all student activities related

to teaching and learning activities, student discipline, curriculum, school sarpras, etc. This relates to the Pesantren Information System (SIP) because it is in the hands of KMI that the application is operational.

It is no less important in the application of the Pesantren Information System (SIP), namely the organization of supporting facilities and infrastructure in the form of hardware, software and users (brainware). Hardware here is in the form of computer devices such as CPUs, hard drives, printers, and others, while software is a program created for special purposes which is composed of programs that determine what must be done by computers in the form of system software and programming language software.

Design

SIP design is a system developed to facilitate the management of Islamic boarding schools to manage student data and financial transactions so as to produce supporting information which consists of several main menus, namely 1) Parent Data along with Santriwati's complete biodata, 2) Parenting which includes violations, visitations and licensing, 3) Finance 4) PSB. In addition to the four main menus, there are several submenus that are integrated in a centralized database system and connected through a local area network (LAN) or wireless (wifi) and internet network in the boarding school environment so as to provide fast, up-to-date information.

Table 1 SIP Software Specifications

Detail Name	Information
Name	Pesantren Information System (SIP)
Type	Management Information System (SIM)
Router	DHCP server, bandwidth management, FTP, DLL Sharing
Server	Rack Mount
Local Area Network (LAN)	Router one network segment
Internet Network	Indihome 100Mbps and 40Mbps
Database	MySQL with development to postgresql
Programming language	Microsoft access and visual basic with databased MySQL

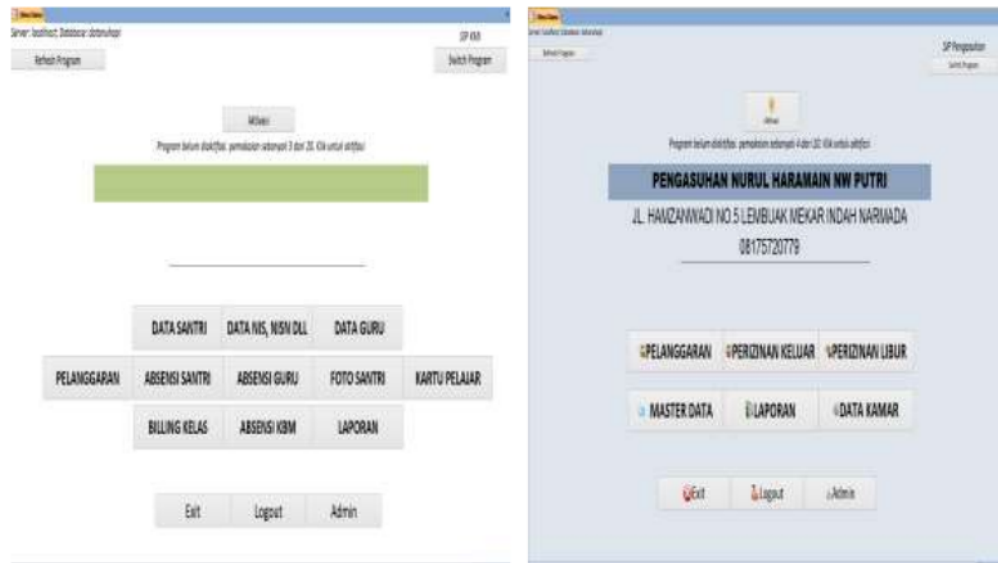


Figure 2. Display of SIP Application

Implementation

For the admission of new students (PSB), the Pesantren Information System (SIP) is used as the initial database of prospective female students who will register at the Nurul Haramain Islamic Boarding School NW Putri Narmada-Lombok, where the data will be recorded even until the female student has completed his education has implemented an online system. New female students will automatically have a parent number that will be a calling number in all forms of service to each student (student). Not only that, SIP also plays a role in the arrangement of students' rooms, both new and old.

For the finance department, the recorded data comes from the database input on the admission of new students (PSB) but is added to the input regarding the amount of contributions that are borne by female students per month. The system will recapitulate the sum of all contributions and arrears of female students, which are automatically connected to the cell phone of each female guardian as a form of broadcast system notification. The female guardian who makes the payment, there is a process of interaction between the operator and the female guardian who will make the payment by taking it from the database, then the payment process is carried out and the output in the form of a valid receipt of proof of payment. The same thing also applies to the licensing department, although the rooms and operators operate differently, but the implementation process is relatively the same.

Data on female students who conduct licenses will automatically be recorded in the system, as well as directly record the number of licenses conducted by female students, so that the results of the recapitulation can be used as material for decision to provide licensing recommendations for female students. The initial step of licensing is the guardian of the santri submitting a permit application to Riayah, then followed up by Riayah by processing on the SIP application, all licensing requirements are completed in the SIP data and then Riayah will issue a permit to leave the hut for the female student in the form of a triple green paper, in which one sheet will be handed over to the security department, one sheet for mudhabiroh who is in the hostel and another sheet to be taken by the guardian of the santri.

Slightly different from the visitation section, the operation was carried out entirely by senior female students who were in the OSNH (Santriwati Nurul Haramain Organization), but received supervision from KMI. Through OSNH guardians of students who want to visit, are recorded by relying on the initial database, then then call the students concerned through loudspeakers. The summons of female students in this case uses three languages namely English, Arabic and Indonesian.

Testing

The trial process to produce a final product in the form of a Pesantren Information System (SIP) requires feedback in the form of a questionnaire response from users who are respon to determine various revisions and application development. After going through trials, a product field test is carried out, the application of which is applied directly to the cottage environment activities that are tailored to their individual needs.

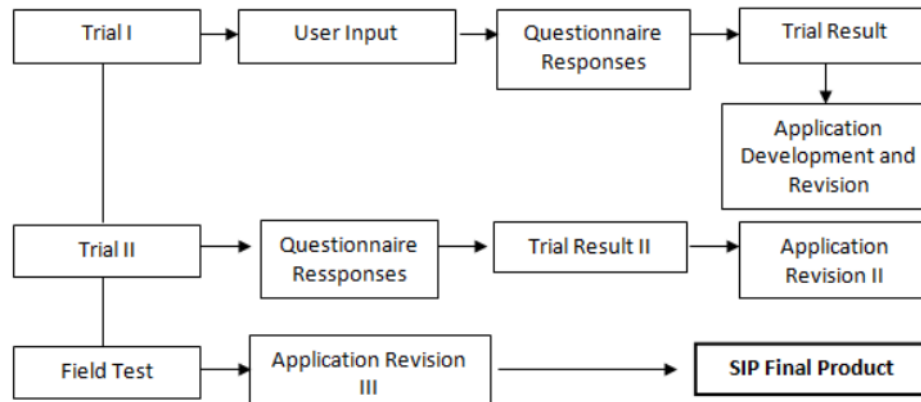


Figure 3. Schema of the Islamic Boarding School Information System Application (SIP)

Conclusion

The pesantren information system (SIP) is a development of the Management Information System (MIS) especially in the student field. SIP facilitates the management of Islamic Boarding School Nurul Haramain NW Putri Narmada-West Lombok in facilitating female students, where the activities of female students for 24 hours occur in a boarding school environment with a number that is not small. Decision making is based on outputs obtained from the Pesantren Information System (SIP) such as a recapitulation of visitation and the number of licenses conducted by female students and from these results are used as benchmarks for subsequent decision making.

The pesantren information system (SIP) was developed on its own in the Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok by utilizing the superior quality of skilled human resources owned by the SDLC (System Development Life Cycle) development model. This is in accordance with the opinion of Morphet (Morphet, Johns & Reller, 1982) that to ensure the achievement of the goals set, every organization must have the ability to make decisions. Decision making is the main activity in the organization. The importance of decision making in an organization is evident in the

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opinion of Horold and Cyril O'Donnell said that decision making is the choice between alternatives regarding a way of acting that is the core of planning.

SIP consists of four main modules, namely (1) Parent Data along with Santriwati's complete biodata, (2) Parenting which includes violations, visitation and licensing, (3) Finance which functions as a data management center for all forms of student payment, and 4) New Santriwati Reception (PSB). The basic source of information systems according to McLeod (2006) is the integration of hardware, software, brainware, and data sources that are managed / regulated through supporting resources and directed at providing precise, accurate, fast, and reliable information.

Not many formal and informal education units are able to create and develop applications as the basis of management in their respective schools, but Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok has been able to develop Pesantren Information Systems (SIP) as part of the Management Information System (SIM)). Therefore, it is necessary to transfer and openness from Nurul Haramain Islamic Boarding School NW Putri Narmada-West Lombok to other schools to be able to create and develop their own applications which will later be tailored to the needs of their respective schools.

Next the Pesantren Information System (SIP) needs to be developed as a whole into a more complete integrated application system to meet the scope of the National Education Standards, including content standards, process standards, graduate competency standards, teacher and education personnel standards, facilities and infrastructure standards, management standards, financing standards, and education assessment standards.

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