



Development of Management Information System Based on Android Application at Al-Anwari High School

Hendra Jaya^{1*}, Yuniarti Hidayah Suyoso Putra²

State Islamic University of Maulana Malik Ibrahim Malang, Indonesia | hendrajaya1010197@gmail.com¹

State Islamic University of Maulana Malik Ibrahim Malang, Indonesia | yuni@akuntansi.uin-malang.ac.id²

Correspondence Author*

Received: 10-12-2023

Reviewed: 15-12-2023

Accepted: 30-12-2023

Abstract

This study aims to portray the development of information systems at SMA al-Anwari Bangkalan based on android applications. The research method uses a descriptive qualitative approach. The results show that the Development of Management Information System (SIM) Based on Android Application at Al-Anwari High School reflects the progressive transformation in the world of education towards the digital era. This article investigates the needs, benefits, and main functions of this application, as well as discussing system integration, security and privacy aspects, and the importance of training and mentoring. The implementation of this app at Al-Anwari High School brings significant benefits to teachers, students, parents and administrative staff by providing easy, quick and integrated access to academic and school management information. The main functions of the application involve schedule management, attendance recording, academic information, parent-teacher communication, and extracurricular management.

Keywords: Management Information System, App, Andoid, Al-Anwari High School

Introduction

Advances in science and technology, especially in the field of computerization, show that these advances can have a positive effect in solving problems in the education management information system process. Law No. 20/2003 on the National Education System of the Republic of Indonesia states that education is a conscious and planned effort to create a learning environment and learning process that aims to enable students to actively develop their potential in the fields of spiritual, religious, self-development, control and personality, intelligence, noble character and skills needed for themselves, society and the state (Law, 2011: 3).

Wahyu Kumorotomo and Subandono Agus Margono state that the purpose of management information systems is to manage an organization to have a reliable system for

managing data as useful information for making management decisions. Therefore, management information systems are considered as systems that provide information and knowledge related to the performance of organizational tasks.

The existence of a training organization information system provides several advantages for training organizations. First is the management of training data and information. Second, the integrity of education data and information is obtained to support the decision-making process. Third, the availability of complete training data and information to all stakeholders in the training field. In relation to achieving the aims and objectives of educational organization activities, the existence of management information systems offers advantages such as the availability of data and education management information systems, the integrity of education data and information to support decision making.

Availability of production processes and complete training data and information to all stakeholders in the training industry. Resource optimization through school empowerment is considered the most appropriate way to achieve independent and better schools. The purpose of empowerment is to provide greater autonomy in solving school problems, this requires changes in education policy based on the principle that management and decision-making are empowered locally according to the demands and needs of each school (Nanang, 2004: 3).

In the field of education, information systems have been widely used to support learning in primary, secondary, and higher education. The utilization of information technology is expected to increase the thinking and creativity of teachers, students and the community (Rochaety, 2006: 74). Information regarding the activity programs of students, teachers and parents is provided by the school administration information system that can be accessed by everyone through computers and smartphones both online and offline. Thus, management information systems can improve the efficiency and effectiveness of schools.

The development of administrative information systems for educational institutions is very important, especially considering the global competition that demands faster, more accurate and convenient information from educational institutions as part of service quality. This makes management information systems have a competitive advantage (Rochaety, 2006: 15).

Al Anwari Tanah Merah Bangkalan High School, as one of the Islamic-based high schools throughout Bangkalan Regency, aims to produce young people who master Science and Technology with an approach to Iman and Taqwa and have an entrepreneurial spirit (wordpress.com). SMA Al Anwari Tanah Merah Bangkalan has implemented an Android application-based management information system in response to changes and developments in the modern era, especially in the world of education and its role in the learning process. One of the reasons for implementing a management information system is to improve the smoothness of the learning process in schools that have adopted modern technology, such as the use of computers and smartphones in learning, as well as the use of technology in management administration. This research will try to further explore the utilization and effectiveness of Android applications as one of the models of management information system development.

Literature Review

Joseph Joseph F. Kelly states that a Management Information System (MIS) is a combination of human resources and other computer resources that lead to the storage, retrieval, communication, and use of information for effective business management and planning (Moekijat, 2005: 14).

Raymond Mc expressed a similar opinion. Leo Jr. who defines SIM as a computer system that provides information to users with similar needs (McLeod, 2005: 14).

Gordon B. Davis explains that SIM is an integrated human-machine system that provides information to support the operational, managerial, and decision-making functions of an organization (Davis, 1999: 39).

George M. Scott adds that SIM is a collection of information systems that communicate with each other to provide information for operational and management purposes (Scott 2009: 73).

In general, it can be concluded that SIM is a system designed to provide information that supports decision making, such as planning, managing, organizing and directing. The application of SIM is not only limited to the business world, but also develops in the world of education. Educational SIM is a combination of human resources and information technology that aims to select, store, process and retrieve information to support decision making in the field of education. The task of information systems is to go through an information management cycle that requires specific components. The data management cycle or information cycle is needed to process data into useful information (Jugiyanto, 2017: 219).

The ideal picture of an educational information system in Indonesia is the ability of educational decision makers to easily obtain information as a basis for decision making, such as human resource needs in the field of education, types and levels of schools, curriculum implementation and development. Educational institutions at local, regional, national and even international levels (Gibson, 1987: 103). Planning, organizing, managing and controlling management activities is essentially a decision-making process that requires information. This information is obtained regularly from the management information system which is the basis for monitoring and evaluating operational results (Effendy, 1989: 87). Concepts such as information, the role of people as information managers, systems, management organizations, decision making and the value of information are important in understanding and planning the development of management information systems. Enterprise information systems are also considered as systems that interact with an open environment, whose input data comes from the surrounding environment and provides insight for managers to make decisions.

Research Method

This research uses a qualitative approach with an in-depth objective to thoroughly understand the development of an Android Application-Based Management Information System at Al-Anwari High School. The qualitative method was chosen because it provides

space for researchers to explore and understand the broader context and dynamics of interaction between stakeholders in the school environment.

The research design applied is a case study. Case studies provide an opportunity to gain in-depth insight into how the implementation of an Android application-based Management Information System can affect the management process at Al-Anwari High School. The research subjects involved teaching staff, students, and administrators at Al-Anwari High School. Participants were selected based on considerations relevant to the development of information systems and school management.

Data collection is done through in-depth interviews using structured interview guidelines. The interviews will focus on stakeholders' views, experiences and expectations regarding the development of information systems. In addition, direct observation will be conducted to understand more about the needs, management processes and dynamics in the school environment. The use of documentation such as meeting notes, reports and other relevant documents will also support data collection.

Result and Discussion

The development of information and communication technology has had a major impact on education, fundamentally changing the paradigm. The implementation of information technology, such as TV, radio, computers and the internet, contributes significantly to the learning process. In Indonesia, the utilization of information technology in education, especially with the School Management Information System (SIM Sekolah), helps to improve the quality of learning.

In an effort to modernize school management, more and more educational institutions are adopting integrated School Management Information Systems, such as Integrated School Information System (I-SIS). I-SIS utilizes information technology to automate processes, improve efficiency, accuracy, speed, and system comprehensiveness. (James, 1989:19) One of the schools that builds an application-based I-SIS independently is SMA Al-Anwari Bangkalan.

Development of Management Information System Based on Android Application at Al-Anwari High School



Picture 1: SMA AL ANAWARI Application Front View

In the ever-evolving digital era, the use of information technology is a must, especially in the context of education. Al-Anwari High School, as an educational institution, realizes the importance of adapting to technological developments to improve the efficiency and effectiveness of school management. Therefore, the development of an Android application-based Management Information System (SIM) is a progressive step to align with the demands of the times. This article will further elaborate on the needs, benefits, main functions, system integration, security and privacy, as well as training and mentoring aspects related to the development of such applications. (Zulkifli, 2001: 453)

1. Need and Reason for Development

It is important to understand that the development of an Android-based SIM at Al-Anwari High School is not about following trends, but rather responding to real needs in the modern world of education. The limitations of conventional systems in terms of accessibility, speed, and efficiency drive the need for transformation. This application aims to overcome these barriers by providing an integrated platform that simplifies and accelerates the school management process, from schedule planning to student performance monitoring. Al-Anwari High School as a modern educational institution must also respond to society's increasing demands for information transparency and active participation of parents in their children's education. With Android-based SIM, relevant information can be accessed quickly and easily, increasing parental involvement in supporting their children's educational development. (Sarlito, 2010:139)

2. Benefits for Stakeholders

This application provides a number of benefits for various parties involved in the Al-Anwari High School education environment.

a. Teachers

Teachers can easily manage their lesson schedules, record student attendance, and monitor academic progress. Focus can be shifted from administration to teaching and mentoring aspects.

b. Students

Students can access their academic information, such as grades, assignments, and achievements, more quickly and accurately. This allows them to take more responsibility for their own learning process.

c. Parents

Parents have direct access to their children's academic information. They can follow their children's progress in real-time and communicate with teachers efficiently through the app.

d. Administrative Staff

School administrative staff can manage student data, schedules and school activities more efficiently. Automated reports help reduce administrative workload. (Nugroho, 2011:91)

3. Main Functions of the Application

The app is designed with various main functions designed to meet the unique needs of schools. These functions can be seen from several menus presented in the application: (Jogiyanto, 2017)



Picture II: Menu in the App

Development of Management Information System Based on Android Application at Al-Anwari High School

- a. **Schedule Management**
The schedule management facility allows teachers to quickly create and update lesson schedules. Necessary schedule changes can be efficiently socialized to all relevant stakeholders.
 - b. **Attendance Recording**
An automated attendance recording system not only saves teachers time but also provides more accurate attendance data. Reports can be generated quickly and used to monitor student attendance levels.
 - c. **Academic Information**
This module presents students' academic information, such as test scores, assignments, and tests. Students and parents can access this data anytime and anywhere.
 - d. **Parent-Teacher Communication**
The app provides a platform for two-way communication between parents and teachers. A smooth exchange of information can enhance understanding and support of students' academic development.
 - e. **Extracurricular Management**
This facility allows monitoring and management of extracurricular activities. Information regarding students' participation in these activities can be integrated with their academic data.
4. **Integration with School System**
The key to the success of an Android-based SIM application is its integration with the school's existing management system. This ensures that the data entered or generated by the app is directly linked to the school's main database. Thus, the app is not just an additional tool but an integral part of the school management ecosystem. Such integration not only increases efficiency but also reduces the risk of human error that may occur when data has to be manually entered into multiple systems. Centralized data management allows all departments and stakeholders to have access to up-to-date information, creating a solid information base for decision-making.(Rochaety, et al, 2009:75-76)
 5. **Security and Privacy**
Data security and privacy aspects are very important in the development and use of this application. Given that the app will contain students' personal information and academic data, data protection measures must be carefully implemented.
 - a. **Authentication System**
A strong authentication system must be implemented to ensure that only authorized parties can access the app. This may include the use of strong passwords, two-factor authentication, or other security methods.
 - b. **Limited Access Rights**
Access rights should be set up in such a way that each user can only access information that is relevant to his or her role. For example, a teacher may have access rights to manage his class data but not have access to other class data.
 - c. **Data Encryption**

Information stored and transmitted through the application should be encrypted to protect the data from unauthorized access. This ensures that even if the data is stolen, it is difficult to access or use in an unauthorized manner.

d. Security Monitoring

A security monitoring system should be implemented to detect and respond to security threats quickly. This involves monitoring activities within the application as well as the security layer at the infrastructure level.

e. Privacy Policy

Al-Anwari High School needs to design and communicate a clear privacy policy to all stakeholders. This includes how data will be used, stored, and shared, as well as the rights of parents and students regarding the privacy of their information.

6. Training and Mentoring

App development is not the end of the journey, but rather the beginning of a successful implementation. It is therefore important to include a comprehensive training program for app users, especially teachers and administrative staff. This training covers the technical aspects of using the app, as well as the principles of good data and information management.

Teachers and administrative staff need to be given in-depth training on how to use each feature of the app. This involves hands-on training sessions, tutorials and resources that can be accessed at any time. It is also important to provide training related to good data management. This includes how to enter data correctly, keep data current, and understand the reports and analysis generated by the app.

A technical support system should be in place after the launch of the app. This can be in the form of an online help center, discussion forums, or a live support team that can be contacted with any problems or questions.

The implementation of the Android Application-Based Management Information System at Al-Anwari High School is a proactive step in bringing the digital revolution to the world of education. With its successful integration, guaranteed data security, and effective post-implementation support, SMA Al-Anwari is transformed into a modern, efficient, and responsive educational institution. All of this is a strong foundation towards improving the overall quality of education.

Conclusion

The development of an Android App-Based Management Information System at Al-Anwari High School is an important milestone in improving the quality of education and school management. By aligning itself with advances in information technology, Al-Anwari High School not only gains operational efficiency but also creates a more open and engaged environment for the entire educational community. In facing future challenges, the implementation of this technology can be a strong foundation to provide a better educational

Development of Management Information System Based on Android Application at Al-Anwari High School

experience for students, increase teacher productivity, and strengthen the relationship between schools, students and parents. In addition, awareness of security aspects and good training are key to a successful implementation, ensuring that this application is not just a tool, but an integrated and sustainable solution to the educational needs of Al-Anwari High School.

References

- Amsyah, Z. (2001). *Manajemen Sistem Informasi cet III*. Jakarta: Gramedia Pustaka Utama.
- Davis, G. B. (1999). *Kerangka Dasar Sistem Informasi Manajemen*. Jakarta: Pustaka Binaman Pressindo.
- dkk, E. R. (2006). *Sistem Informasi Manajemen Pendidikan Cet 2*. Jakarta: Bumi Aksara.
- Effendy, O. U. (1989). *Sistem Informasi Manajemen Cey ke-3*. Bandung: Mandar Maju.
- Hidayanto, D. N. (2011). *Pemikiran Pendidikan dari Filsafat ke Ruang Kelas cet III*. Samarinda: Spirit Grafindo.
- James L Gibson, d. (1987). *Organisasi Dan Manajemen* . Jakarta: Erlangga.
- Jogiyanto, H. (2017). *Analisis dan Desain (Sistem dan Informasi Pendekatan Terstruktur Teori dan Praktek Aplikasi Bisnis*. Yogyakarta: Andi.
- McLeod Jr, R. S. (2005). *Sistem Informasi Manejemen Edisi 8*. Jakarta: Indeks.
- Moekijat. (2005). *Pengantar Sistem Informasi Manajemen Cet ke-9* . Bandung: CV Mandar Maju.
- Nanang, F. (2004). *Prinsip-Prinsip Manajemen* . Jakarta: Bina Aksara.
- Sarwono, S. W. (2010). *Psikologi Remaja cet XIII*. Jakarta: Raja Grafindo.
- Scott, G. M. (2001). *Prinsip-Prinsip Sistem Informasi Manajemen*. Jakarta: Raja Grafindo.