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DESIGNING A LEARNING INFORMATION SYSTEM BASED ON ANDROID (CASE STUDY OF JUNIOR HIGH SCHOOL 4 OF KOTA BUMI)

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Article Info	Abstract
	SMP Negeri 4 Kota Bumi in the current learning process only occurs in the classroom during the lesson hours that have been set, where the teacher explains and students take notes, so that if the teacher is unable to attend the student does not get the subject matter, and the same thing happens when the teacher is unable to attend. students do not go to school students will not get the material that takes place that day. The system development method used in this research is the Structured Systems Analysis and Design (SSAD) methodology. This methodology has several important steps that must be carried out in designing and building e-learning at SMPN 4 Kota Bumi. The system to be built is intended to carry out learning activities using information technology so that the expected learning process can be produced using centralized data storage that can facilitate distribution activities. materials, doing practice assignments, and assessments outside of school hours. It is hoped that further development of this academic information system has an Android-based interactive facility that can be installed on the smartphones of all concerned users.

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INTRODUCTION

Advances in data technology at this time can be an opportunity for the world of learning to improve the quality of teaching and learning[1]. The world of education also does not want to be outdone by presenting various services for students and for the internal interests of the school itself. One of the targeted media is information media using website technology. For this reason, in building a website, a system or mechanism is needed that facilitates and maintains the website in updating. One of them is by using PHP programming with the database using MySQL.

SMP Negeri 4 Kota Bumi is one of the junior high schools where the research is carried out. In the current learning process, it only occurs in the classroom at predetermined lesson hours, where the teacher explains and the students take notes so that if the teacher is unable to attend the student does not get the subject matter, and the same thing happens when the student does not attend school, the student will not attend. get the material that took place that day. An alternative to improving the existing learning process, the school requires an information technology media that can be used by teachers and students in the learning process, namely by building an E-Learning system that can provide convenience in providing materials and assessments that can be accessed anytime and anywhere.

Some of the studies that have been carried out in connection with e-learning systems are as follows:

First, Seprida Hanum Harahap with the title " Utilization of Lcms Moodle-Based E-Learning as a Learning Media for Accounting Information Systems Courses " explained that the learning process carried out in the classroom always applies a centralized learning system where students always expect resources from teachers only while students, in this case, are not very active in class due to limited time in class. So learning activities are not creative because students are not required to be independent in learning activities.

Through the use of E-learning-based teaching materials, it is expected to be able to overcome the problems of learning activities. Moodle stands for the modular object-oriented dynamic learning environment. This application was built for teaching and learning activities by utilizing the internet network through a website and using the principles of social constructionist pedagogy which can help teachers in the learning process from all points of view.

The method used is descriptive qualitative by using a saturated sample namely the number of population is the same as the number of samples. Data collection techniques using observation, interviews and documentation. The results achieved from this research are the interaction between lecturers and students in the learning process, besides that e-learning also functions as a discussion forum between lecturers and students, and can also be used as an online quiz, so that all learning process activities become very effective[2].

Second, Agustiranda Bagaskara Putra with the title "Design and Development of a Web-Based E-Learning Information System (Case Study at Madrasah Aliyah Kare Madiun)" explained that Madrasah Aliyah Kare is one of the private high schools located in Kare sub-district, Kare district.

Madison. The learning system in MA Kare uses conventional learning techniques which means that the teaching and learning process is in the form of face-to-face and taking notes only. This makes it easy for students to feel bored and learning takes a long time in explaining the material. To support the existing learning system at MA Kare, it is necessary to have a new learning system to support learning using electronic media in the form of computers, namely e-learning. Then,

how to design and build an e-learning system and implement it in MA Kare? In making the system the author uses the PHP language, XAMPP, and control pane version 3.2.2 to provide solutions to the teaching and learning process in MA Kare to make it easier for students and teachers in the learning process can be done any time without limits as provided by the school. So, the method used in this research is the waterfall method which uses a systematic flow in stages, such as planning, modelling, construction and application to existing users on the SDLC (System Development Life Cycle) concept[3].

Third, Risti Ana Diah, Umi Fadlillah with the title " Design and Build a Website and E-Learning at TPQ Al-Fadhillah " explained that the Al-Qur'an Education Park (TPQ) is an informal education place that teaches Islamic religious values based on the Qur'an. 'an and Al-Hadith as the main learning, as well as guiding students to become devout Muslims. One of them is TPQ.

The one in Kartasura, namely TPQ Al-Fadhillah, is one of the TPQs that requires a website as well as e-learning. The TPQ Al-Fadhillah website is expected to make it easier to communicate and find and get information. While e-learning is a solution to provide a different and interesting learning atmosphere and the teaching and learning process becomes easier to follow because there is learning material. This is done to provide new ways of learning and getting to know technology to students, especially at TPQ Al-Fadhillah.

Simple website design equipped with PHP and MySQL, Microsoft Windows 7, Macromedia Dreamweaver, Mozilla Firefox to display system results, and Macromedia Flash to make e-learning more attractive. The existence of a website and e-learning at TPQ Al-Fadhillah is expected to help and facilitate administrators in managing TPQ Al-Fadhillah, both from teacher data, students, lesson schedules, and subject matter as well as e-learning that can help the teaching and learning process[4].

Fourth, Dina Maulina, Bernadhed with the title "Designing an E-Learning Information System at Smk Syubbanul Wathon Tegalrejo Magelang" explained that many ways have been developed to improve teaching systems that are still conventional, namely Teaching

and Learning Activities that are only carried out in the classroom. However, several schools have implemented a developing system, namely through e-learning (online learning).

E-learning can help teachers distribute materials to teach them without having to be in class and can also maximize the time of teaching and learning activities by using internet services. This Website-based E-learning information system is expected to help the process of teaching and learning activities at SMK Syubbanul Wathon Tegalrejo to be more optimal. This method makes it easier for teachers to be able to deliver subject matter, give online quizzes, provide school info more quickly, collect student assignments online, and conduct consultations with students anytime and anywhere without space and time limits[5].

Fifth, Ariyono Setiawan, Luthfiyah Nurlaela, Supari Muslim, Eppy Yundra with the title "Development of E-Learning as a Vocational Education Learning Media" explained that the current development of Information Technology (IT) has changed the order of the conventional learning process towards a learning model that can be carried out without geographical boundaries. with the term E-learning.

E-learning offers a learning concept that does not recognize place and time, where students can access it anytime and anywhere. This study aims to analyze how electronic learning is and aims to conduct a study on the use of e-learning at the State University of Surabaya for Vocational Education students. This study uses quantitative and qualitative descriptive research to measure e-learning user satisfaction. This study aims to test whether the implementation of e-learning-based learning media can affect motivation and student learning outcomes of Vocational Education The population in this study were Vocational Education Elearning users consisting of lecturers and students. In addition, it was found that electronic learning has a positive and significant effect on the quality of conventional learning in the classroom[6].

Sixth, La Hadisi and Wa Muna with the title "Management of Information Technology in Creating Learning Innovation Models (E-Learning)" explained that the use of Information Technology in the world of education is an extraordinary breakthrough. This information technology support is expected to be an innovation in learning by involving many components of information technology in it.

Information technology is closely related to the system, information technology promises efficiency, speed of information delivery, global reach, flexible in use. Therefore, in the era of globalization, the education sector cannot escape its reach, namely by involving technology in it, it can produce an education system. This paper discusses the educational model that involves information technology which is part of learning innovation using information technology, namely E-Learning.

Includes the understanding of E-Learning, functions, benefits, some of the advantages and disadvantages of E-Learning, as well as E-Learning programs and processes. Thus, it is clear that the E-Learning learning system is a learning system that can increase innovation in learning in this era of current globalization, where learning or interaction between teachers or lecturers and students as well as students is no longer hindered by distance, space and time[7].

Seventh, Hilmi Fuad, Zainul Hakim, and Pramana Anwas Panchadria with the title "Design of a Web-Based E-Learning Information System at SMK Negeri 1 Tangerang" explained that the development of information and communication technology has a very big role in the formation and progress of the quality of education. Along with these developments, learning methods have also changed.

E-learning is an innovation in the development of information technology in the world of education. Based on this, research was conducted to create a web-based E-learning Information System at SMK Negeri 1 Tangerang, to support the learning process to be more optimal. This information system is made using the PHP programming language and MySQL database. For web servers using XAMPP.

In designing this system, object-based system design methods are used, namely the prototype method and the UML tool. The prototype method can be used to connect users' misunderstandings about technical matters and clarify the specifications of the

user's desired needs to software developers. This information system will create an organized learning process, making it easier to access and search data and deliver information[8].

METHOD

The system development method used in this research is the Structured Systems Analysis and Design (SSAD) methodology. This methodology has several important steps that must be carried out in designing and building e-learning at SMPN 4 Kota Bumi. The process stages that will be used include the following:
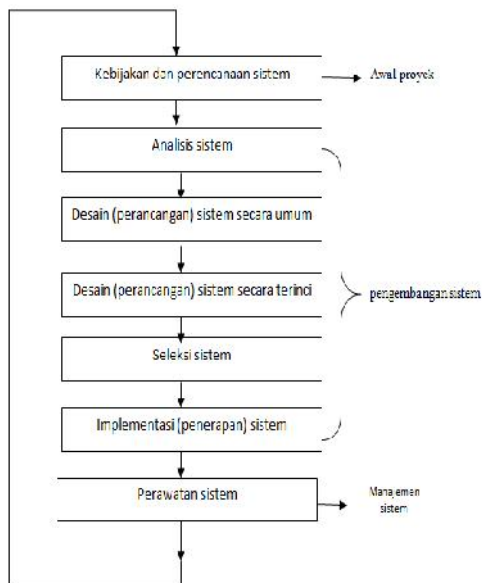

Figure 1 SSAD

System Policy and Planning.

Policy and system planning is carried out to request research approval and to determine the object of research[9] at SMPN 4 Kota Bumi. This stage is carried out for the process of collecting the necessary data such as the process of providing materials, assignments and assessments at SMPN 4 Kota Bumi.

b. System Analysis

System analysis was carried out to identify problems in the system of giving materials, assignments and assessments that are currently running at SMPN 4 Kota Bumi.
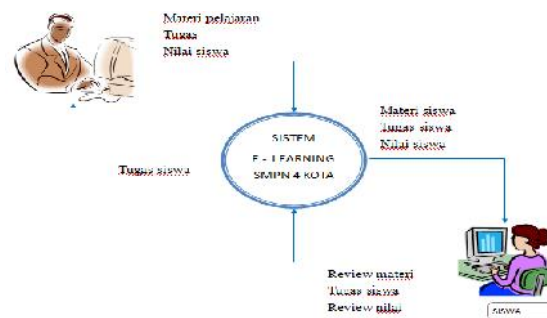

Figure 2 Analysis of the Running System

the proposed system design

The following is a proposed system model of e-learning which is designed to overcome the problems that exist in the learning process[10] at SMPN 4 Kota Bumi including the mechanism of the process of providing materials, assignments and assessments. System flow The proposed e-learning is displayed in the form of context diagrams and data flow diagrams.
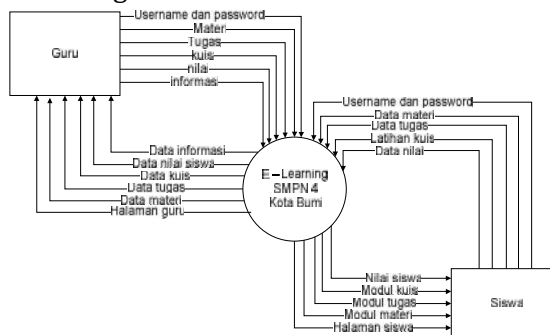

Figure 3 Context Diagram Proposed System

RESULTS AND DISCUSSION

a) Main page

The image below is the main page of the system. The display index / main page can be seen in Figure 4.

Figure 4 Main Page.

b) Manage Teacher Data

Displaying teacher data managed by the admin can be seen in Figure 5

Figure 5 Manage Teacher Data

c) Manage Material Data
Displaying material data managed by the teacher can be seen in Figure 6

Figure 6. Manage Material Data

d) Question Bank
Showing the question bank done by students can be seen in Figure 7.

Figure 7. Question Bank

e) Student scores
Displaying student scores accessed by students can be seen in Figure 8.

Figure 8. Student Grades.

CONCLUSION

The system to be built is intended to carry out learning activities using information technology so that the learning process can be generated. This is expected by using a centralized data storage that can facilitate the distribution of materials, doing practice assignments, and assessments outside of school hours. With access rights services for teachers and students, teachers can provide materials and practice questions and can check students' final grades.

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