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Mobile Web-Based Learning Application

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Abstract*: *Teaching and Learning activities in gotong royong junior high schools are currently conventional only limited to meetings in schools. The time available for teachers and students to meet face to face in the classroom is very limited, in addition, the process of delivering the material is almost completely carried out in the classroom which causes the delivery of the material to be late, when a student does not enter school, the student will later find it difficult to follow the learning process. therefore, a Mobile Web-Based Learning Application was created at Gotong Royong Junior High School, using the Prototype model system development method, the results of this research are a mobile web-based learning application, it can be concluded that the learning application has been designed and implemented with facilities including downloading materials, assignments or online quiz and student scores.

Keywords*: *E-Learning, Mobile Web-Based Learning, Gotong Royong Junior High School

1. INTRODUCTION

1.1 Background to the Problem

In the modern era like today, information technology is developed in accordance with human needs in order to help and facilitate humans in carrying out their activities. One of them is the large number of technologies used in obtaining information. Information technology is now needed in various fields, be it the fields of health, business, education and entertainment. The influence of information and communication technology in the world of education is increasingly felt in line with the shift in learning patterns from conventional face-to-face to more open and mediated education. With the influx of globalization, future education will be more open and two-way, diverse, multidisciplinary, and related to work productivity and competitiveness. Along with the development of internet technology, e-learning began to be developed. The nature of e-learning is a conventional form of learning that is poured in digital format through internet technology. E-learning can be used in distance education or conventional education depending on its importance. Developing an e-learning model does

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not just present the subject matter into the internet but needs to be considered logically and holds the principles of learning. Likewise, the development design is simple, personal, fast, and there is an online evaluation.
The advantage of the *E-learning* learning model is that teachers can convey students' materials, assignments and grades easily through *internet*facilities without being limited by distance, place and time. *E-learning* provides significant support, as it provides access to learning materials that learners can access at anytime and anywhere when needed.

SMP Gotong Royong Gedung Tataan is one of the private schools in Pesawaran Regency that isdeveloping and developing quite rapidly, so that in 2022, it already has a number of students approximately 200 students who are divided into 9 classes**.** Conventional Teaching and Learning Activities (KBM) are only limited to meetings in schools and will not develop the abilities and knowledge possessed by students. The time available for teachers and learners to meet face-to-face in the classroom is very limited *E-learning* is one of the solutions to overcome these obstacles, because *E-learning* can serve a large number of learners, relatively little time is needed, the learning process is flexible, but the material can be absorbed effectively. It is hoped that the existence of a mobile web-based learning model will be a solution to improve the quality of education at SMP Gotong Royong Gedung Tataan.

1.2 Problem Formulation
Based on the background that has been described, the formulation of the problems that are currently occurring at SMP Gotong Royong Gedung Tataan is:
1. How to build a Mobile Web-Based Learning Application at SMP Gotong Royong Gedung Tataan?
2. Is the E-Learning Application at SMP Gotong Royong Worth realizing?

1.3 Research Objectives and Benefits
The purpose of this study will later be to create a Mobile Web-Based Learning application at SMP Gotong Royong Gedung Tataan so that it can facilitate online teaching and learning activities.

2. LITERATURE

2.1 Application Definition
According to jogiyanto HM (in Suhartini (2017), application is the application, storing things, data, problems, work into a means or media that can be used to be applied into a new form. [1]

According to Hasan Abdurahman and Asep Ririh Riswaya (2016), an application is a ready-to-use program that can be used to execute commands from users of the application with the aim of obtaining more accurate results in accordance with the purpose of making the application, the application has the meaning of solving problems that use one of the application data processing techniques that usually race to a desired or expected competency or data processing Expected. The definition of an application in general is an applied tool that

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is specially functioned and integrated according to the capabilities it has, the application is a computer device that is ready to use for users. [2]

From the information or opinions of the experts above about the application, it can be concluded that the application is a transformation of a problem or work in the form of things that are difficult to understand to be simpler, easier and understandable by users. So that with the application, a problem will be helped more quickly and precisely.

2.2 E-learning insights

E-Learning is "the use of Internet technology to deliver a series of solutions that can improve knowledge and skills". (Rosenberg (2009). E-learning or Internet enabled learning combines teaching methods and technology as a means of learning (Hamilton-Jones). From these two experts, it can be concluded that e-learning is the use of Internet technology for the solution of teaching methods and as a means of learning.

2.3 SMP Gotong Royong Pesawaran

SMP Gotong Royong Pesawaran is one of the Private Junior High Schools under the auspices of the Ministry of Education located in the Subdistrict of Gedung Tataan, Pesawaran Regency, Gotong Royong Junior High School located on Jl. PTPN VII, Cipadang Kec Tataan Building Pesawaran Regency.SMP Gotong Royong has been accredited B with NPSN:10800436

3. METHODOLOGY

3.1 Data Collection

3.1.1 Observation Methods

Observation is a data collection technique in which researchers directly communicate or look for data to the research site or research object so that the information obtained as material and research reference can be accounted for both bilaterally and technically this observation whether carried out directly or indirectly if done indirectly, the researcher only records and writes whatever he knows without having to communicate and interact directly with the object of research As for if the technique of collecting data directly, the researcher directly communicates with the parties who are the source of information [9].

Researchers conduct a survey directly to the location of the research object by visiting and digging for information at Gotong Royong Junior High School, by looking at the way business transactions have been carried out so far, in addition, the researcher also studied the ongoing activities, then the researcher discussed designing a new information system as a means of informationsystems that are more effective and efficient.

3.1.2 Literature Methods

Library studies are a stage of data collection based on references and books that have been published by previous researchers and then reviewed by current researchers to become references and sources of information which will later become a discussion in this study As for obtaining a study of the literature study.

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3.1.3 Interview Methods

The interview method of researchers conducting information searches directly to informant sources or what is often referred to as resource persons with the existence of these sources respondents as information centers can be easily reviewed and reviewed information and then stated in a study As for the parties who are resource persons can be from entrepreneurs and consumers who have felt the services of the event who are in the show. Interviews were conducted directly to the board members of SMP Gotong Royong.

3.2 Design Model

In designing this system, the author uses the *prototype* method with this *prototype*method will be produced by the prototype system as an intermediary for developers and users so that they can interact in the process of information system development activities. In order for this prototype creation process to work well is to define the rules at the initial stage, namely that developers and users must have one understanding that the prototype is built to define the initial needs. Here is an image of the prototype method:

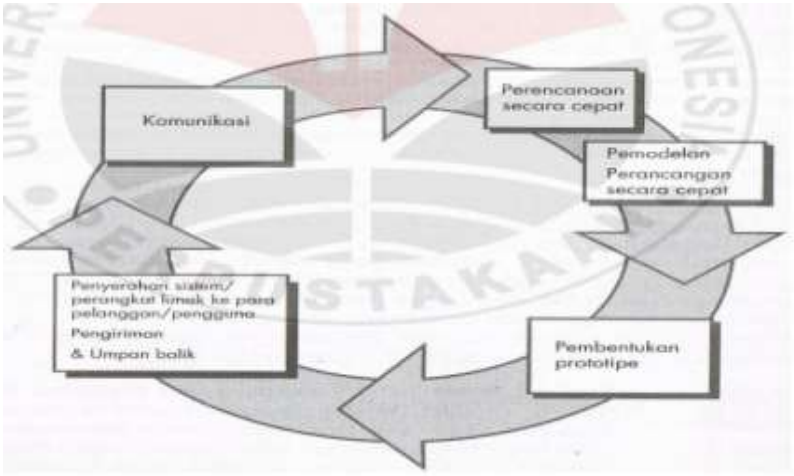


Figure 1. Methods Prototype

The stages of development of prototype models according to Roger S . Pressman (2012) is :

1. Communication and initial data collection, that is, analysis of the needs of the user (in this case it is the learner)
2. Quick design(quick design), that is, the creation of a design in general to be further developed again.
3. The formation of prototypes, namely the manufacture of prototype devices including testing and refinement.
4. Evaluation of prototypes, namely evaluating prototypes and smoothing out the analysis of user needs.
5. Prototype improvement, which is the manufacture of the actual type based on the results of the prototype evaluation.
6. Final production, which is to produce the device correctly so that it can be used by the user.

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3.2.1 Data Analysis

Work on the learning system of SMP Gotong Royong. Where in learning that takes a long time and is less efficient because the use of computerization and analysis is still not optimally carried out manually. With the E-Learning application of SMP Gotong Royong based on this mobile web, all activities will be computerized in the form of a database

4. RESULT AND DISCUSSION

The design of a learning application at gotong royong junior high school based on a mobile web will be managed by school staff appointed by the principal as an admin to manage the application. As for the design of the system that can be created first using the Activity Diagram Admin data flow diagram of the database design and the design of the mobile webview.

4.1 Design Model

4.1.1 Flowchart

The proposed admin flowchart of the learning application at the mobile web-based Gotong Royong Junior High School illustrates the whole.

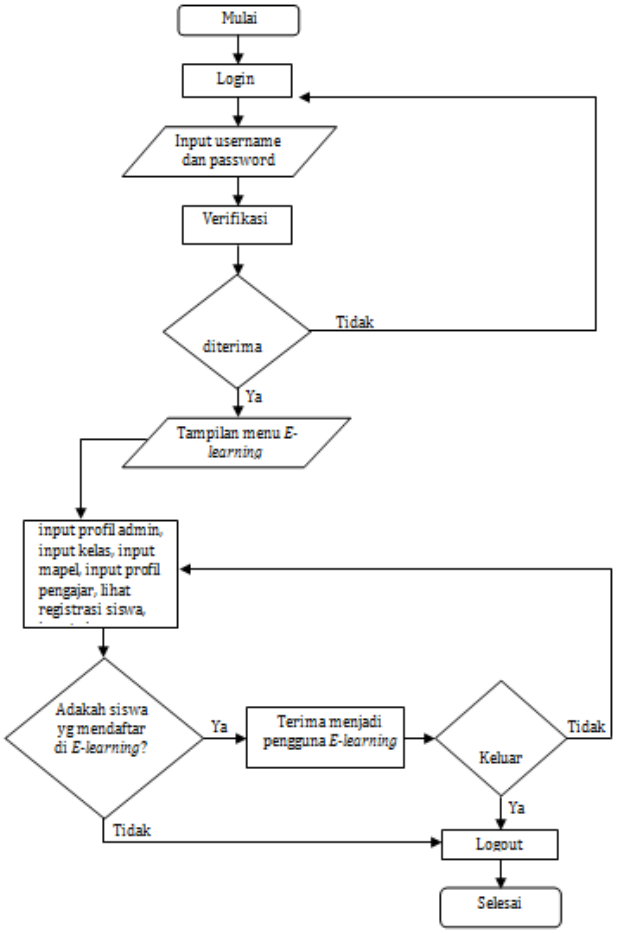


Figure 2. System Flowchart

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4.2 Implementation

In this section, draw the results of the design that has been made using a flowchart for a mobile web-based learning application. The main function to see the results of the system design that has been listed has the following objectives, namely:

1. Make all the designs that have been built into falid data, look for new information and data for system updates so that the existing information of the system is more uptodate.
2. Create a coding scrib to run a set of command instructions given by the admin so that it can be seen that the system can run properly or an error occurs.
3. Provide explanations to users in order to be able to use the information system as well as possible.

Here is the appearance of the learning application at SMP Gotong Royong based on the mobile web.

4.2.1 Login Page

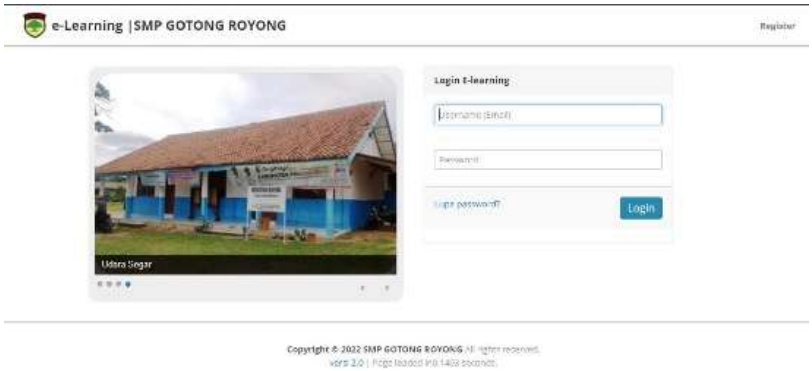


Figure 3. Login View

To open this page, students enter a link and students will automatically be directed to the student login page then students enter their username and password and click the login button to enter the learning application.

4.2.2 Student Home Page View



Figure 4. Student Home Page View

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After the student enters the correct username and password, the student will enter the home page. On this home page, there is a main menu on the left, namely the home menu, messages, course schedules, assignments, materials, my comments, teacher filters, student filters, and Logout. In the upper right corner of the homepage there is a scrol menu containing profiles & login accounts, log logins, and Logouts from learning applications at SMP Gotong Royong

4.2.3 Message Page View

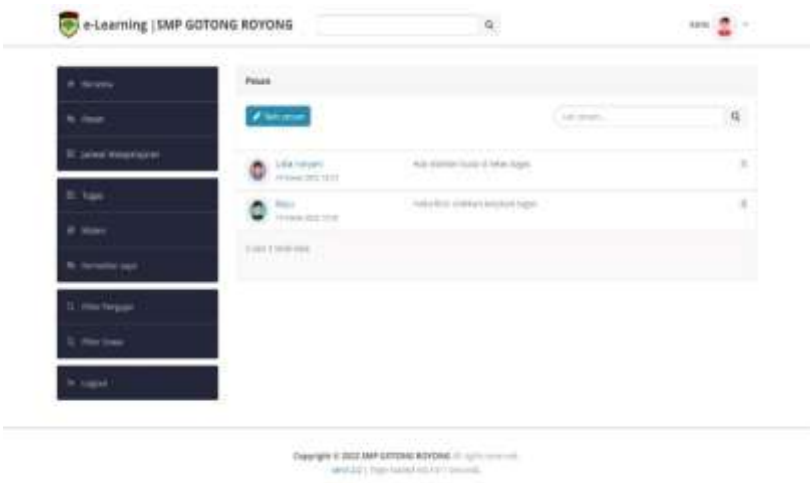


Figure 5. Message Page View

When students select the message menu, the student will enter a page containing messages sent or received by students.

4.2.4 Eye Schedule Page View



Figure 6. Eye Schedule Page View

When students select the Course Schedule menu, students will enter a page containing information about the Course Schedule that is followed, according to the day, class entry time, and teaching teacher.

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4.2.5 Task/QuisPage View

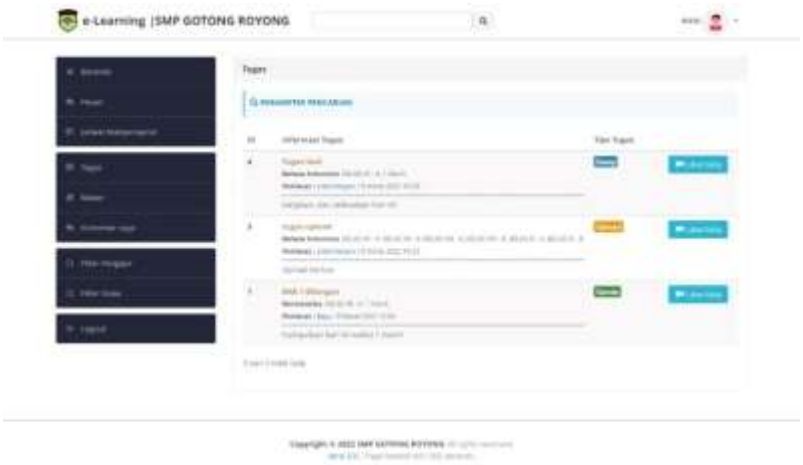


Figure 10. Task/QuisPage View

When students select the assignment menu, students will enter a page containing the tasks given by the teacher according to the subject, such as essay and multiple choice assignments.

4.2.6 Material Page Views

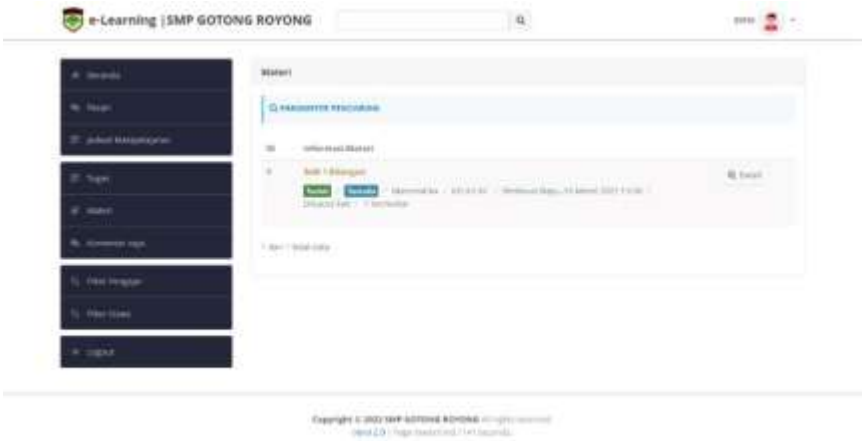


Figure 8. Material Page View

When students select the material menu, students will enter a page containing material uploaded by the teacher according

5. CONCLUSION

Based on the analysis and discussion of problems that exist in the ongoing system and the results of the implementation of a mobile web-based learning application on smp gotong royong, it can be concluded that

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1. The mobile web-based learning application on smp gotong royong is built using the PHP programming language and uses HTML markup, and uses the Mysql DBMS (Database Management System), and this learning application can be accessed via pc or smartphone and has been designed responsively so that users are comfortable in using this application, and teachers will be easier in providing learning materials.
2. The learning application at SMP Gotong Royong is very worthy of realization because this learning application can make it easier for educators and students in teaching and learning activities because this school e-leraning can be accessed via Android and can be used wherever you are so that it is not limited

Suggestion

From the system that has been analyzed and discussed further, there are several suggestions that can be used as input for researchers who will develop this system. The suggestions in question are:

1 In order for the learning function to be better, it is necessary to add *Synchronous E-Learning* / live / live online learning features, namely video *conference* and chat room features so that learning becomes more interactive.
2 In order for students to more easily access learning through cellphones that have internet features that currently have a fairly affordable price for students, learning needs to be developed again.

In order for learning to always be *updated*, a professional web administrator is needed who understands the basics of a mobile web-based information system who is in charge of updating learning content and changing administrator passwords regularly so that the system is not easily damaged by others who are not entitled to enter the system.

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