

The development of mobile learning in the southeast Minahasa district vocational high school

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Abstract

This research is motivated by the lack of interesting learning media innovations in computer and network engineering learning, especially operating systems and the difficulties of some students in understanding the material and practice as well as the lack of student interest in learning operating systems. This research has the aim of developing learning media in the form of an Operating System Learning Media application with the introduction of open source and open source operating systems for students at SMK 1 Touluan. This research is a research and development (R&D) that uses the MDLC development model. The stages have 6 stages, namely: Concept (Conception), Design (Design), Obtaining Content Material (material collection), Assembly (manufacture), Testing (Testing), and Distribution (Distribution), but at this stage it is only carried out until the fifth stage., namely Testing. The results of the research obtained are the creation of mobile and website-based learning media products in SMK in Southeast Minahasa district in this case at SMK N 1 Touluan.

Keywords: learning media, android, website, MDLC

Introduction

The world of education cannot be separated from the learning process which includes teachers, students, and the learning environment that influence each other in order to achieve learning objectives. Media is one of the factors supporting the achievement of learning objectives. This is related to the use of appropriate and varied media in the learning process can increase learning motivation and can reduce students' passive attitude (Deni Hardianto, 2005:102). The media serves as a source of information on learning materials and as a source of practice questions. The quality of learning is also influenced by individual differences of students, both differences in learning styles, differences in cognitive abilities, differences in learning speed, and differences in background. The teaching and learning process is often faced with abstract material and in reality the teacher explains using only textbooks and lecture methods even though the facilities and infrastructure in schools are available but are not used optimally, so this material is difficult for students to understand. The implication is that students have difficulty due to lack of attention and tend to be passive so they need to repeat during practice time, of course this becomes ineffective and efficient (JPVTM 2016: 2).

Research Methods

This study uses an R&D (Research and Development) approach, which aims to develop mobile learning-based learning media for operating system subjects with the Multimedia Development Life Cycle (MDLC) development model. According to Sutopo A.H, (2012) MDCL is the use and combination of images, videos, and sounds in multimedia that is interesting and arouses the interest of students or students to learn. Multimedia is also able to facilitate the delivery of certain materials to students compared to other ways of delivering material.

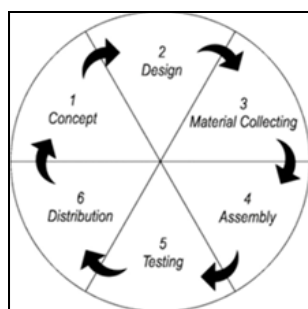


Fig 1: MDLC Model

The reasons for developing this method are:

O Model Sutopo A.H, (2012) is a development model that is specifically intended for multimedia developers, so that the stages of development are in accordance with the process of making multimedia. By using this model, developers can use it directly without using other development model modifications to suit the multimedia product that will be made.

O The Sutopo A.H., (2012) model can help solve the problems being researched, and there is a match between the names of the stages in the method and what is being done at those stages so as to facilitate and understand how the development of multimedia devices will be carried out.

O The Sutopo A.H. (2012) model was carried out so that producers could more easily provide information to end users in a more interactive, interesting, and communicative way.

Results and Discussion

The scope of this mobile-based learning media is:

1. To find information about the use of this system both among students and teachers.
2. To analyze how this application can run and identify problems and solutions that may arise.
3. To design android-based learning media.
4. To develop and test whether this learning media can be used properly
5. Features to be built:
 - a. Basic Competency Features
 - b. Material Features
 - c. Tutorial Features
 - d. Evaluation Features
 - e. Developer Profile Features
 - f. Animation Features

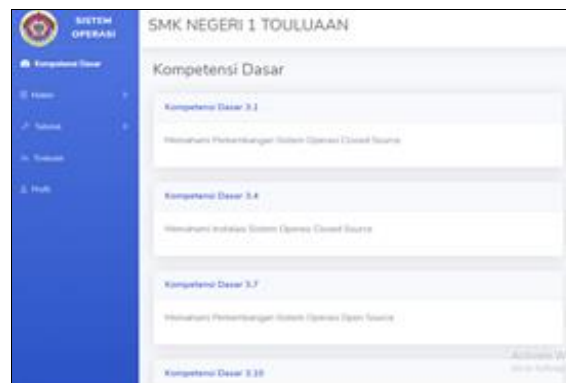


Fig 2: Basic competency features



Fig 3: Materials Features



Fig 4: Tutorial Features

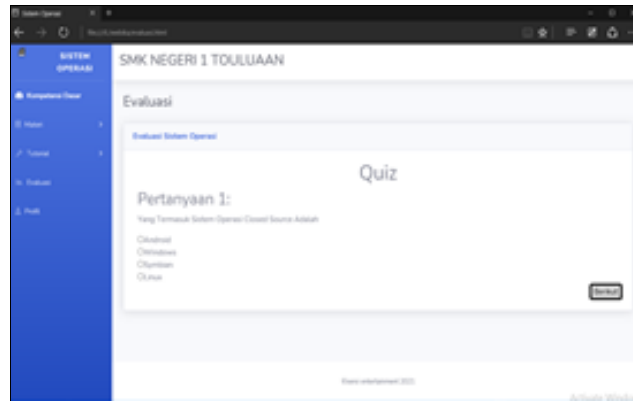


Fig 5: Evaluation Features

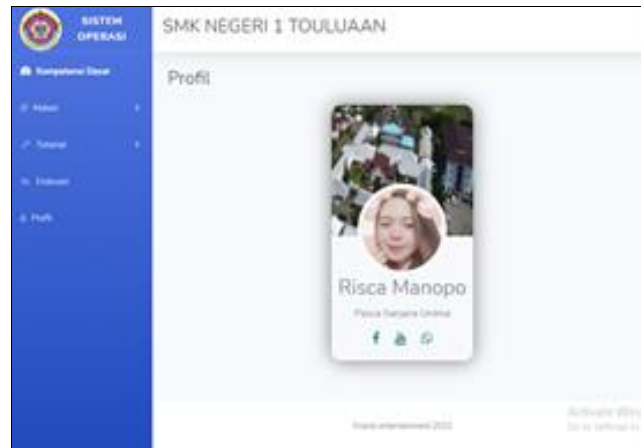


Fig 6: Profile Features

Conclusion

From the results of this research and development, it can be concluded several things as follows:

1. The results of this development research are learning media products based on mobile learning on the subject of Operating Systems.
2. By looking at the final results of each trial conducted on mobile learning-based learning media, it can be concluded that mobile learning-based learning media on Operating System subjects are suitable for use as learning media at SMK N 1 Touluuan.

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