

Design and Building of Learning Tutorial Using Multimedia Based E-Learning Techniques

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ABSTRACT

The world of education around the world is experiencing significant development. This development can be seen from the increasingly diverse learning methods used. The method used uses a lot of various media to improve the quality of learning outcomes. The development of various learning media is in line with the increasingly rapid technological advances. The technology that was learned a few years ago has begun to be replaced with new technology, including various conventional ways of learning. The form of information technology development that can be used as a learning medium is to use e-learning. E-learning is an innovation that can be used in the learning process, not only in the delivery of learning material but also changes in the abilities of various competences of students. Through e-learning, students do not only listen to material descriptions from educators but also actively observe, do, demonstrate, and so on. Teaching material can be virtualized in various formats so that it is more interesting and more dynamic so that it can motivate students to go further in the learning process.

Keywords: *Education, E-Learning, Technology*

1. INTRODUCTION

The development of information technology from year to year has always been very rapid. Along with the development of information technology and the demands of the globalization of education and distance learning, various concepts have been developed to replace traditional learning methods, one of which is the concept of e-learning [1]. Technological developments have had a lot of influence on our way of life, one of which is in the field of education with the use of e-learning in learning activities in schools, colleges, course places and many more [2]. E-Learning is an effective learning process that is produced by combining digital material delivery consisting of learning support and services [3]. The impact of the development of information technology that occurs has spurred organizations to continue to exist and to improve the achievements they have made. The role of information technology focuses on managing information systems, besides that information technology can meet organizational needs very quickly, timely, relevant and accurately, one of which is in the field of multimedia-based e-learning [4].

The learning process that occurs in several schools usually still uses traditional methods. Where teaching materials are delivered face-to-face, both verbally and non-verbally. Usually the problems faced by some schools are the lack of interaction between teachers and students in each meeting who have difficulty understanding the subject matter, as well as the teaching and learning process which is limited by time for each meeting between teachers and students [5]. The essence is to develop the potential that is owned by increasing creativity in interacting when learning takes place [6]. Activeness in learning is needed for students, because the learning process is not only how the teacher transfers knowledge to students but from the students themselves, they must also be active in obtaining a change in behavior [7].

This should not happen continuously so that later it will cause lingering problems. According to the observations of researchers in any school, some teachers still use conventional learning methods. This means that it is marked by the presence of the teacher explaining by reading learning material from books or Student

Worksheets, followed by giving assignments carried out in writing. Of course this greatly affects students' insights regarding the level of understanding or deepening of learning material. I think the method, media and learning process carried out by the teacher stimulate student activity and learning outcomes. In addition, it also creates more discomfort for students in participating in learning activities, so that it quickly causes boredom in the minds of students because students only pay attention to what is conveyed by the teacher and occasionally ask questions without improvising learning from students [8].

The use of conventional learning methods is due to the limitations of teachers in mastering new innovations in the world of education such as the use of E-Learning itself, teachers also think that conventional methods are more practical [9]. The use of E-Learning is expected to be able to solve problems regarding learning methods in schools in general [10].

This study only examines the following problems:

1. Designing Web-based E-Learning as a learning resource for students
2. Student activeness as referred to is visual activities, oral activities, listening activities, writing activities, drawing activities, motor activities, mental activities and emotional activities.
3. In the realm of cognitive student learning outcomes, researchers will provide a post test at the end of the lesson [11].

2. METHODOLOGY

2.1 Multimedia Development Methods

To be able to do software development, especially in multimedia, it takes several stages. the multimedia development method consists of six stages, namely: concept, design, material collection, manufacture, testing, distribution. For more details, it can be seen as shown in Figure 2.1 below:

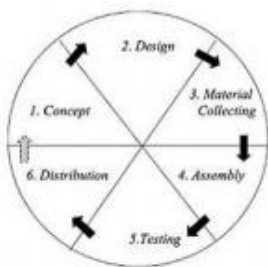


Figure 2.1 Multimedia Development Methods

Explanation of Figure 2.1 multimedia development methods are as follows:

1. Concept
Concept is the initial stage of finding goals and who is the program user or person who watch in the form of

linear multimedia, besides finding a wide range of applications and application purposes.

2. Design
Design is the stage of making specifications regarding program architecture, style, appearance and material or material requirements for the program, such as storyboards or scenes.
3. Material Collection
The stages where the collection of materials is in accordance with the needs needed. This stage can be done in parallel with the assembly stage. In some cases, the material collection stage and the assembly stage will be carried out linearly, not parallel.
4. Making
The manufacturing stage is the stage where all multimedia objects or materials are made. The application development is based on the design stage, such as in linear multimedia where all the collected materials are arranged for editing in an attractive visual video form.
5. Testing
Testing is carried out after the completion of the manufacturing stage by running the application or program and seeing whether there are errors or not. This stage is also called the alpha testing stage where the tester is carried out by the manufacturer or the manufacturing environment itself. In linear multimedia, edited video forms for review before going through the distribution stage.
6. Distribution
Stages where the application is stored in a storage medium. At this stage, if the storage media is not sufficient to accommodate the application, then the application is compressed.

2.2 Multimedia Development Tools

In developing the design of this tutorial, supporting tools are needed during the design process. The device used by the author is the Storyboard.

2.2.1 Storyboard



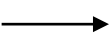
To design a multimedia application product, a storyboard must be made. Storyboard is a series of sketches that present the story line. Storyboards also function as planning and design tools in the process of creating multimedia products that combine narrative and visuals.

Based on the description above, it can be concluded that the Storyboard is a collection of panels, plots, subplots or scenes from sketches that have been planned and arranged sequentially. Storyboard This is useful for depicting scenes, animation, or motion graphics be it in making movies, video games or other interactive media.

2.2.2 Use Case Diagrams

In describing the use case should not be confused with the features of the system, a use case may relate to one or more system features, a feature may be related to one or more use cases.

Table 2.1 Use Case

Symbol	Description
	Actor External entity that interacts With the system being built.
	Use Case The highest level of parts functional that will be provided by the system.
	Interaction Tool when communicating between actors, use cases, and boundaries
<<include>>	Include Used to describe a use case is entirely the functionality of other use cases.
<<extend>>	Extend Used to indicate a use case is a functional addition to other use cases if certain conditions or conditions have been met.

3. ANALYSIS SYSTEM

3.1 Current System The

Current learning method still uses conventional methods, which means that the teacher explains in the classroom and the students listen to the lessons given. In this method the teacher talks more all the time. Most teachers explain to students in oral, written and body language
If when the teacher or teacher is explaining in front of a student, and there are students who are not listening well, then the student does not understand what the teacher or instructor is explaining. this makes the teacher or teaching repeat again explain to students with the aim that students can understand the whole what was described by a teacher or instructor.

3.1.1 Scenario Old System

1. teachers teach the material that will be given to students in accordance with what will be taught.
2. If material given that students do not understand, then the teacher / teacher h flow repeats the material presented again.

3.1.2 Weaknesses of the Old System The

1. teacher explained all the time so it was boring for the students.
2. The teacher / teacher does not focus on paying attention to students who are not listening well.
3. The teacher is more tired in class giving material.

3.1.3 Results of Old System Analysis

After understanding and analyzing and identifying the above problems, it can be concluded that there is a need for information media that can make it easier for teachers or teachers to deliver material interactively and make students feel happy with different learning methods.

3.2 Analysis of the New System

The main functions of learning media with multimedia-based E-Learning techniques include:

1. making it easier for students to learn well because they use more attractive media.
2. Make students pay more attention to the material presented by the teacher / teacher because it is delivered using multimedia-based media / devices.
3. Make teachers / teachers more able to pay attention to students who are not listening well.

3.2.1 New System Scenarios

Based on the results of the new system analysis conducted by the author, the authors try to provide the results of the new system analysis as follows:

1. Teachers or teachers' pay more attention to students who do not listen to the material
2. Students find it easier to get material provided by the teacher / teaching through multimedia-based applications.
3. Students do not feel bored in getting the material provided by the teacher / teacher.
4. The interaction between students and the system can be mediated by the teacher / teacher through the question and answer method.

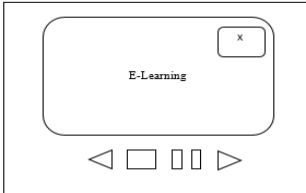
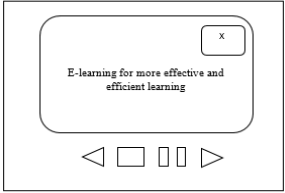
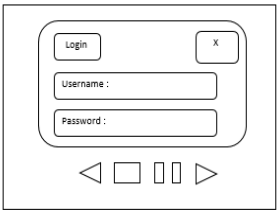
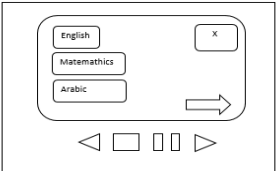
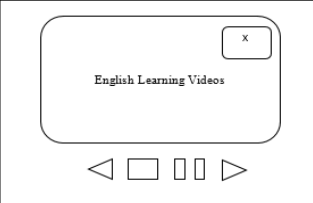
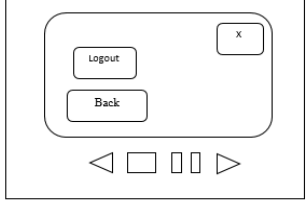
3.2.2 Needs Analysis Requirements

analysis is software requirements when implemented, be it software, hardware, or the characteristics of the hardware users.

4. DISCUSSION

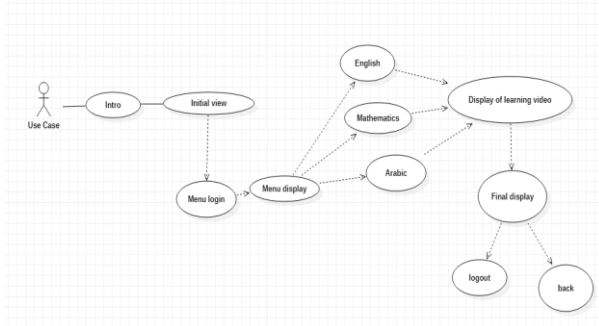
4.1 Storyboard The

following is a video tutorial design for learning with multimedia-based e-learning techniques, as follows:

Name	Sketch	Description
Intro		<ul style="list-style-type: none"> ● Visual: Displays video intro with logo ● Text: tutorial e-learning video tutorial for learning ● Sound: Besabriyaan music ● Duration : 10 Seconds ● Animation: Looping ● Annauncer: -
Initial view		<ul style="list-style-type: none"> ● Visual: Displays the initial view ● Text: E-learning for more effective and efficient learning ● Sound: Great music ● duration: - ● Animation: Fade In ● Annauncer: -
Views login menu		<ul style="list-style-type: none"> ● Visual: Displays the intro video with logo ● Text: video tutorial for tutorial learning e-learning ● Sound: Besabriyaan music ● Duration: - ● Animation: Fade In ● Annauncer: Please fill in the login menu with okul username and password
lesson menu display		<ul style="list-style-type: none"> ● Visual: Display video lesson menu with ● Text: video tutorial learning tutorial e-learning ● Sound: Besabriyaan music ● Length: - ● Animation: Fade In ● Annauncer: Please m choose the subjects you want.
The learning video		<ul style="list-style-type: none"> ● Visual: Displays the selected learning video ● Text: English Learning Videos ● shown Sound: Besabriyaan music ● Duration: - ● Animation: Fade In ● Annauncer: -
final display		<ul style="list-style-type: none"> ● Visual: Displays the logout menu and returns ● Text: logout & Return To The Lesson Menu ● Sound: Besabriyaan music ● Duration: - ● Animation: Looping ● Annauncer: click logout if you want to exit all menus and click back to return to the lesson menu.

4.2 Storyboard

Here is a diagram use case draft design tutorial learning multimedia-based e-learning, as follows:



Picture 4.1 Use case Diagram

5. CONCLUSION

Based on the work of this journal, it can be concluded from wake designing tutorials to learn the techniques of multimedia based E-Learning, namely:

1. Can designing learning tutorials with multimedia-based e-learning techniques.
2. Can make innovations, namely by making a more varied picture concept in designing learning tutorials with multimedia-based e-learning techniques.

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