Development of Multimedia-Based Learning Media for Multimedia Courses

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ABSTRACT

This research is research into the development of learning media which aims to produce learning media for Multimedia courses which is expected to help lecturers in the teaching and learning process. This research is research into developing the Multimedia Development Life Cycle (MDLC). In this method there are 6 (six) stages, namely: (1) Concept, (2) Design, (3) Obtaining Content Material, (4) Assembly, (5), Testing, (6) Distribution. In this testing phase, there are four testing forms: Developer Tests, Media Experts, Material Experts, and End -End-user tests. The research obtained good results, and from these results, the research concluded that the application of multimedia learning media.

INTRODUCTION

Current technological developments cover all aspects of human life, with No exception aspect Education. In development, technology has influence Which big in process learning. Institutionalized Education Technology Information Communication must continue to maximize existing developments by utilizing them in the learning process. One of them is in learning Program Studies PTIK, which utilises development technology Which There is can create creative and innovative learning following

technological developments. Advances in information technology have had many positive impacts on progress education Which offer And choice for world education to support the learning process. Such as technological developments that have contributed to changing learning styles, especially the use of learning media (Budiyono, 2020). With existing development technology naturally will make it easier learning process, as well as give learning following development.

Learning as a process is a system that involves various parts such as educators, students, teaching materials, learning resources, learning media, And methods. Success learning very determined if This learning can develop the potential of students so that students can gain direct benefits learning process. The obstacles that lecturers often encounter in learning activities are choosing or determining teaching materials (media) or materials appropriate lectures to help students achieve competency. Based on the Semester Learning Plan (RPS), the learning process for the Multimedia course consists of theory and practicum which discusses or provides an introduction to various types of media (text, images, graphics, audio, video, and animation). It is appropriate to continue developing teaching materials so that learning does not seem monotonous and conventional.

There are two important elements in the teaching and learning process. These two aspects are interrelated, namely educational methods and media. Insufficient use of media and presentation of material can affect the learning process. Multimedia courses are not only limited to multimedia concentrations but have become general courses for all concentrations in the Department of Information and Communication Technology Education, Faculty of Engineering, UNIMA. Many learning media can be used to present material, not just books. With the continued development of technology, learning media continues to be innovated to fulfill the teaching and learning process (Anggita, 2020). Insufficient use of media and presentation of material can affect the learning process. Multimedia technology can represent what educators are less able to say through certain words or sentences. For this reason, it is very necessary to use media and present interesting material so that students can digest the material presented.

The use of modern media or tools is not intended to replace good teaching methods, but rather to complement or assist lecturers in conveying material or information, such as using learning media. Learning media can also be interpreted as a useful tool to facilitate the teaching and learning process (Jatiningtias, 2017). Using learning media can make it easier for lecturers and students to communicate effectively. The purpose of learning media is to help teachers convey messages or lesson material to students so that students can easily understand the lesson. Presentation of material using this learning media, which contains multimedia components that can make it easier for students to understand the material provided. In this Multimedia course, the delivery of the material is good, especially when the material is delivered, it always shows several examples related to the material being presented. However, in developing learning media in this course so that it is always interesting, contents will be added to complete the presentation of the material, for example in delivering the material in the form of a video explaining the material. Learning media is created using Adobe Flash as interactive media.

One of the learning media for making learning videos that can be used in Multimedia courses is Powtoon. Powtoon is a web-based application I.T. Which can used as a medium of learning inside there are interesting features such as features for creating presentations or animated videos that can be used with ease and interest (Ernalida, 2018). Through media, It is hoped that Powtoon can make it easier for

educators to create visible learning material interesting And creative. Besides making it easier for educators in matters This that as teachers, Powtoon is also expected to make students more enthusiastic in listening to the material presented by the teacher. Powtoon learning media has the advantage of having numerous feature animations with various - types as well as effects that make presentation or video learning seen as interesting. Besides That, the line Which there is in Powtoon can also be used easily compared to other applications similar to his. Adobe Flash is software that can create interactive learning media expected can create media learning Which interactive And innovative.

LITERATURE REVIEW

Media Learning

The word media comes from the Latin medius which in the dictionary is "middle", "intermediary" or "introduction". Gerlach and Ely emphasize that media if understood broadly, are people, materials, or events that create conditions that make students able to acquire skills and attitudes. knowledge. Media are educators, textbooks, and the school environment. Graphic, photo, or electronic tools for capturing, executing, and reconstructing visual or verbal information constitute the definition of media in learning activities more specifically (Arsyad, 2016). Apart from being a delivery or introductory system, media is often replaced by the word mediator, with the term media mediator indicating its function or role, namely managing an effective relationship between the two main parties in the learning process, namely students and lesson content. In short, media is a tool that conveys or delivers teaching messages.

Learning is a process of interaction between educators with participants' education and learning resources in the learning environment (Rusman, 2016). Learning media can be understood as media used in the learning process and objectives. In essence, the learning process is also communication, so learning media can be understood as the communication media used in the communication process, learning media has an important role as a means to convey learning messages. The use of media in the learning process will influence a pleasant learning atmosphere because it can build a desire for new knowledge and interests, arouse motivation stimulate learning activities, and even have a psychological influence on students and the application of learning media (Supriyadi, 2017). Learning objectives can be achieved if, in the learning process, educators can utilize, And develop media learning in a way creative and efficient, because learning media is one of the intermediary tools for educators in conveying material to students in the learning process (Nur Aida, et al. 2020).

From the definitions above, it can be concluded that learning media is a tool that is very helpful in the learning process where it can convey messages creatively, interestingly, and easily understood, thereby generating interest in the recipient.

Multi-Media

The path to mastering multimedia must start with a definition of multimedia. Multimedia comes from the words multi and media (Munir, 2012). Multi- comes from Latin, which means many or various kinds, while the word media comes from Latin, viz medium which means an intermediary or

something used to deliver, deliver or carry something." The word medium in the American Heritage Electronic Dictionary (in Munir, 2012) is defined as a tool for distributing and presenting information. Based on that, multimedia is a combination of various media (file formats) in the form of text, images (vector or bitmap), graphics, sound, animation, video, interaction, etc. which have been packaged into digital files (computerized), used for convey or deliver a message to the public.

Multimedia is defined as the combination of various digital media types such as text, images, sound, and videos, into an integrated multisensory interactive application or presentation to convey a message or information to an audience (Neo & Neo, 2004). Multimedia is also defined as a combination of many media or at least consisting of more than one media (Warsita, 2008). In line with the two previous opinions, multimedia is media that combines two or more media elements consisting of text, graphics, images, photos, audio, video, and animation in an integrated manner (Ahmadi et al, 2011). Multimedia is divided into two categories, namely: linear multimedia and interactive multimedia. Linear multimedia is multimedia that is not equipped with any controller that can be operated by the user. This multimedia runs sequentially, for example: TV and films. defines multimedia as a collection of computer-based media and communication systems that have the role of building, storing, delivering, and receiving information in the form of text, graphics, audio, video, and so on (Sutopo, 2012). Multimedia is also defined as a union of two things or more communication media such as text, graphics, animation, audio, and video with characteristics of computer interactivity to produce an interesting presentation (Munir, 2012).

Function Multimedia

Learning multimedia extracted from Ahmadi et al (2011) has the following functions:
1) Capable of strengthening response user as soon as possible And often Possible.
2) Able to provide opportunities for students to control their own learning pace.
3) Observe that students follow a coherent and controlled sequence.
4) Able to provide opportunities for participation from users in the form of responses, in the form of answers, choices, decisions, trials, and so on, etc.

METHODS

Research for application design will be carried out in the Department of Information and Communication Technology Education, Faculty of Engineering, Manado State University.

Tool And Material
a. Device Hard (Hardware)
    1) Laptops MOBILE PHONE Processor Intel(R) Cores i3-6006U CPU @ 2.00GHz, 1.99 GHz
    2) RAM 4.00 GB (3.89 GB usable
    3) Mouse
b. Device Soft (Software)
    1) Adobe Flash CS6

4

2) Adobe PhotoShop CS6
3) Powtoon

Stage Which Done in Application Media Learning
1. Draft

The concept stage is the initial stage in the MDLC cycle. The concept stage starts with determining the purpose of creating the application determining the users of the application and determining the concept of the application content. Apart from that, this stage will also determine the application page (presentation, interactive, etc.) and the purpose of the application (entertainment, training, learning, etc.). Basic rules in design are also determined at this stage, for example, application size, targets, etc.

2. Design (Planning)

A mature concept will make it easier to describe what must be done. The goal of the design stage is to create detailed specifications regarding the architecture of the application, appearance, application requirements, and style. At this stage, specifications are made as detailed as possible so that the next stage is Obtaining Content Material and Assembly making new decisions is no longer needed, just use what has been determined at this stage. At this stage using Hierarchical structure and storyboard to describe the story plan or description of each scene.

3. Obtaining Content Material (Collection data)

Obtaining Content Material is the stage of collecting appropriate materials with needs. Material collected accordingly needed by interview with lecturers who teach courses related to the material that will be included in the application. Other materials needed include images, photos, animation, video, audio, and text, either ready-made or still needing to be modified according to the requirements. existing needs. These materials can be obtained free of charge or by ordering from other parties according to the plans made in the previous stage.

4. Assembly (Making)

Assembly is the stage of creating the entire multimedia material. Application to be created based on the design stage, such as structure navigation and storyboards. At this stage, researchers used Adobe Photoshop CS6 and Adobe Flash CS6 software to create projects and other software to create video material.

5. Testing

Testing is carried out to ensure that the results of creating multimedia applications are following the plan. There are two types of testing used, namely alpha testing (Alpha test) and beta testing. Alpha testing is the testing carried out by the creator or the creator's environment, such as displaying each page, button functions, and the sound produced. If there is a malfunction, the application will be repaired immediately. If it has passed alpha testing then it will continue with beta testing involving end users) will do.

6. Distribution

This stage is the last in the multimedia development cycle. Distribution can be done after the application is declared fit for use. At this stage, the application will be stored on a storage medium. If

the storage media is not sufficient to accommodate the application, compression of the application will do.

RESULTS AND DISCUSSION

Concept (Draft)
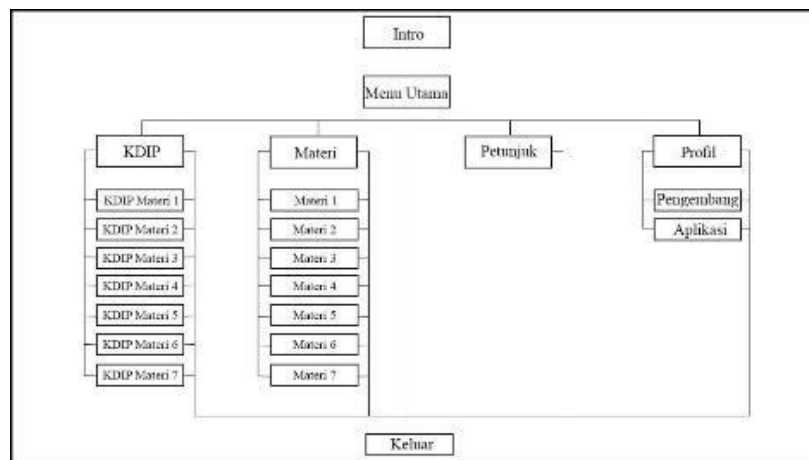
Structure hierarchy can be seen in Figure 1.

Figure 1. Structure Hierarchy

Design (Planning)

The design of application development instructional Media Which made can be seen in Figure 2.
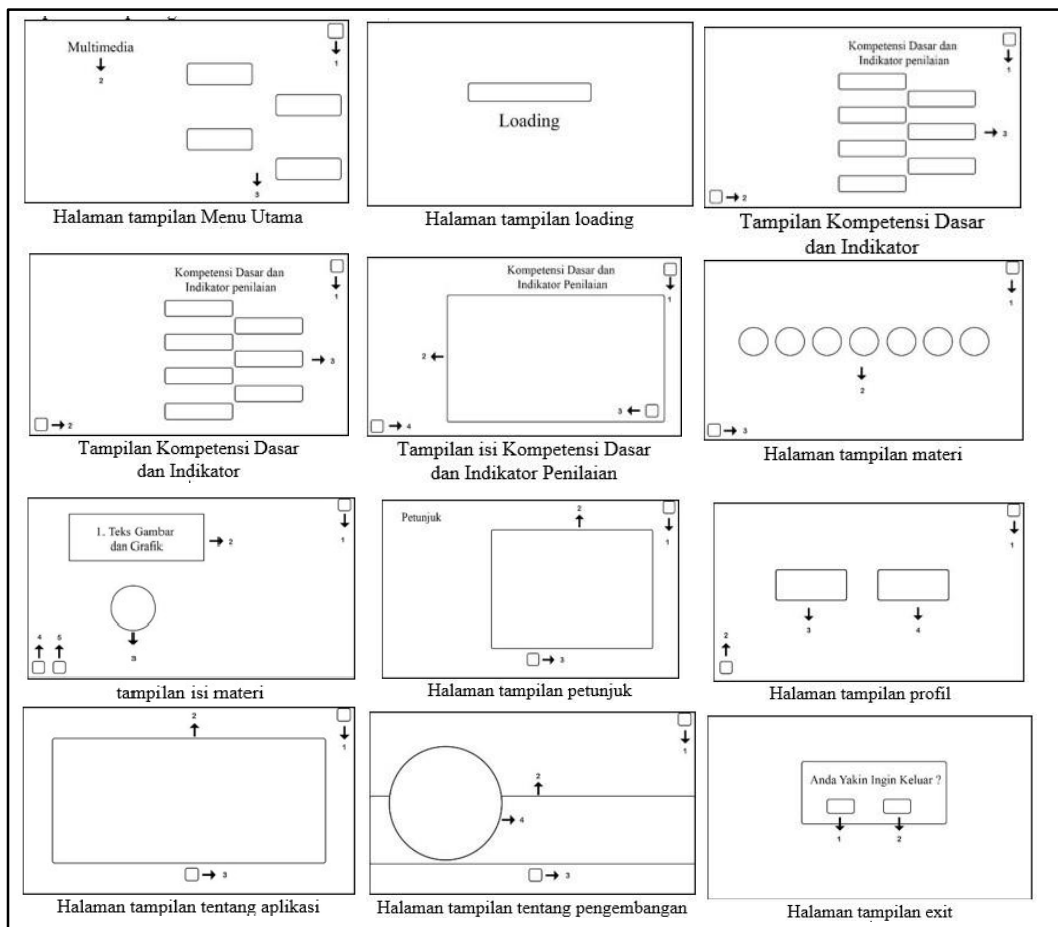
Figure 2. Design Appearance Application

Obtaining Content Material (Collection Material)

Material used in the making application Multimedia learning media in the form of buttons and icons taken from the internet and designed directly through the Adobe Photoshop CS6 application.

Assembly (Making)

The following is a display of the process of creating a multimedia learning media development application which can be seen in figure 3 and the results of creating the application which can be seen in figure 4.
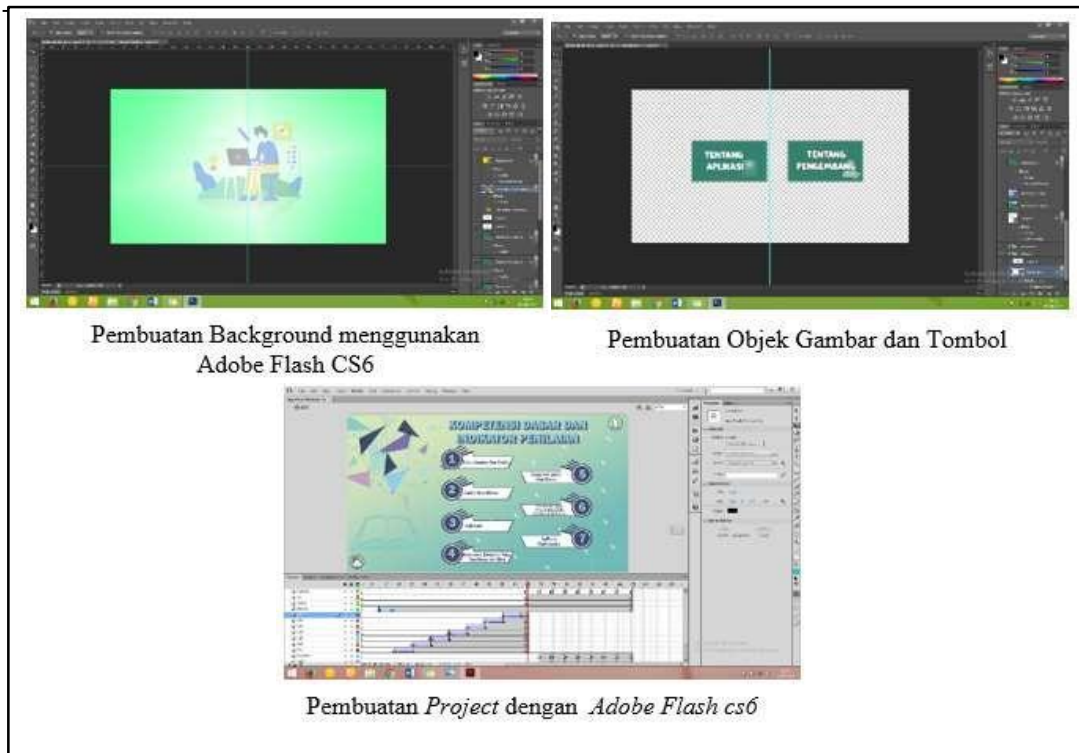
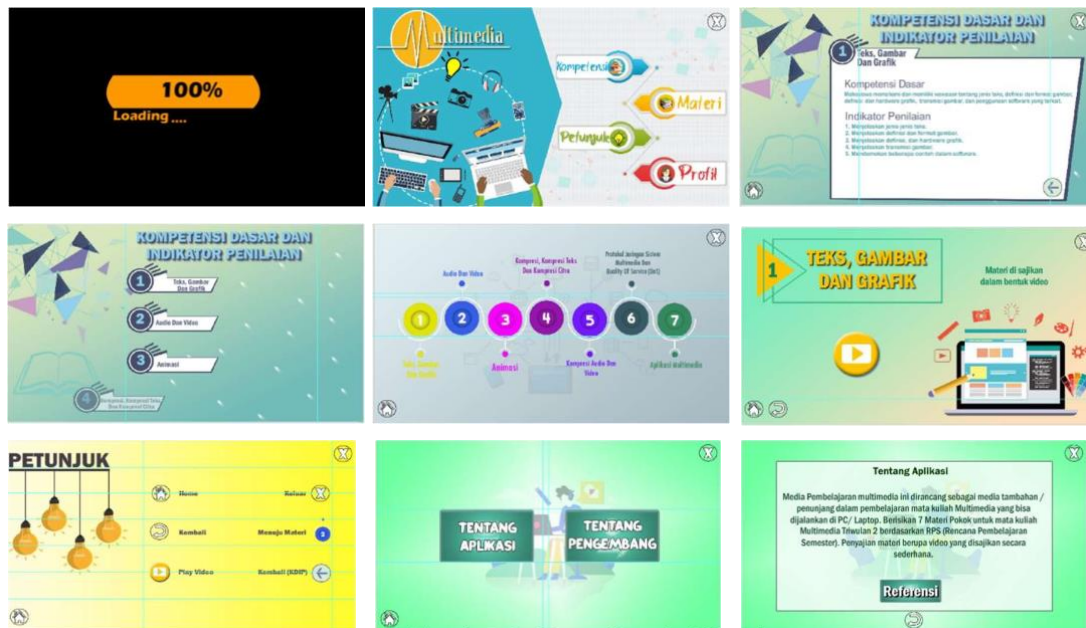**Figure 3**. Process Making Application

Figure 4. Appearance Application

Testing

After the application has been created, the next step is to carry out system testing and trials where testing of this system aims to find out whether the learning media application is following what was planned and functions as a whole or not. The testing stage is carried out after the manufacturing stage and all materials have been entered. Testing is carried out using black box testing. Blackbox Method This is program testing to ensure that the application that has been created is following what was previously designed.

Distribution

After the testing stage has been carried out on the application, the final stage will be a distribution of the application in. exe so that it can be run on a computer device. The following is the Publish display application on Adobe Flash CS6 Software.

CONCLUSION

Based on the results of the research and discussion, it can be concluded that a Multimedia Learning Media Development application has been made in the PTIK Department, Faculty of Engineering, UNIMA using the Multimedia Development Life Cycle method. (MDLC) which consists of six stages.

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