Developing Instructional Media for Vocational School Students

Joulanda A M Rawis[1], Susan N H Jacobus[1], Clay J H Dondokambey[1]*, Stanly F M Sauyai[1], Moh. Qowi[1], Renaldy J Kalesaran[1]

[1]Department of Educational Management, Graduate School of Universitas Negeri Manado, Indonesia

*Corresponding author: claydondokambey@gmail.com

ABSTRACT

Technology in the field of education can now be utilized with the aim of solving various existing problems, including students' learning problems at school. The aim of this research is to develop interactive learning media in network service technology subjects at Christian Vocational School 1 Tomohon as a tool in the learning process. The development method used is the Multimedia Development Life Cycle (MDLC) method. This development method consists of 6 stages, namely: (1) Concept, (2) Design, (3) Material Collecting, (4) Assembly, (5) Testing, (6) Distribution. This learning media testing includes 3 tests, namely compatibility testing by media experts, material suitability testing by material experts, and usability testing by users. Making this learning media itself uses the Adobe Animate application. From the tests that have been carried out, the results show that interactive learning media in the network service technology subject at Christian Vocational School 1 Tomohon has no problems and is suitable for use as a tool for students and teachers in the learning process.

Keywords: android, learning media, MDLC

INTRODUCTION

113

The increasingly rapid development of technology is one of the factors that can influence human lifestyles in carrying out various activities. The use of technology is now popular in every circle, from children to adults due to the demands of current developments. Current developing technology has indeed brought many changes in various fields, including in the field of education. Education can be interpreted as a process for a person to acquire knowledge, understanding, and ways of behaving following needs (Morten et al, 2022). In the current era, education has faced the challenges of globalization which requires everyone to be able to master technology. In advancing the education sector, many efforts can be made, namely by improving the quality of educators, developing educational facilities, and making innovations in the delivery of learning materials.

Schools, which are educational institutions, certainly have an important role in improving the learning process. Students' different levels of understanding in the learning process require teachers to be more creative in delivering material (Novita and Harahap, 2020). There are still several problems and shortcomings in the learning process that often occur today, such as students' lack of attention, modules or learning resources that are not yet fully available, and limited other learning media which makes students easily bored so they just ignore the learning material. given. Good and appropriate use of technology can produce human resources who are skilled, educated, and able to adapt to developments in science and technology. There are many types of learning media that can be selected and applied using technology, including augmented reality, virtual reality, digital video and animation, games, and also interactive learning media. With this media, learning can be done anytime and anywhere without being hindered by time and place (Mandey et al, 2022). Media is a tool that can be used as a useful intermediary to increase effectiveness and efficiency in achieving a goal. Learning media can be obtained in any form, as long as it still contains elements that strengthen students' ability to understand a concept. A learning media that needs to be built is interactive learning media. Interactive means something that provides mutual action, where there is a reciprocal relationship between a media or tool and its user. Interactive classification within the scope of learning media does not lie in the hardware system but rather refers to the learning characteristics of students in responding to the stimuli displayed (Mustika et al, 2017).

From the results of observations that have been made, it can be seen that students are still less interested in the learning being carried out, whereas, during the learning process, they tend to apply more conventional learning methods and are more centered on the teacher while students are only recipients. Christian Vocational School 1 Tomohon is a vocational school that aims to prepare graduates who are skilled and ready to face the world of work and business. Of course, with this aim, Tomohon Christian Vocational School 1 also needs to improve the implementation of the learning process in the school so that it becomes more innovative, effective, and attractive for students so that the learning carried out can achieve the school's goal of producing quality graduates who are equipped with superior knowledge and skills. Based on this discussion, research was conducted with the title Development of Interactive Learning Media in Network Service Technology Subjects at Christian Vocational School 1 Tomohon.

LITERATURE REVIEW

Instructional Media

The word media comes from Latin, namely medius, which means middle, intermediary, or introduction. Media is an intermediary or messenger of messages from the sender to the recipient (Arsyad, 2002). Media is a vehicle for transmitting learning information or transmitting messages(Rusman, 2012). Media can help overcome space and time limitations in communication and dissemination of information. Learning is an activity that involves someone gaining knowledge from various learning sources(Susilana and Riyana, 2007). Learning is a combination of teaching activities and learning activities (Wibawanto, 2017). Teaching activities are the teacher's efforts to convey knowledge and create good communication links between students and teachers, while learning activities are students' activities to gain knowledge.

Instructional media has an important role in the field of education(Sanaky, 2013). Learning media are educational facilities or tools that can be used to increase effectiveness and efficiency in achieving learning goals. Learning media is a form of equipment that functions as a conductor or tool used to convey messages in educational activities (Setiawan, 2017; Pratasik and Ahyar, 2022; Maun et al, 2022). Learning media is anything that can be used to channel messages from the sender to the recipient of the message so that it can stimulate students' thoughts, feelings, attention, and interest to improve the teaching and learning process(Sadiman, 2011). Interactive media is a delivery media system that presents video material, and computer-controlled recordings to viewers (students) who not only hear and see the video and sound but also provide an active response and that response determines the speed and sequence of presentation(Arsyad, 2009). Interactive learning media is multimedia that is equipped with a controller that can be operated by the user so that the user can choose what they want for the next process, ask questions, and get answers that influence the computer to carry out its functions(Sutopo, 2003).

Adobe Animate CC

Adobe Animate CC is software or computer software designed by Adobe Systems. Adobe Animate CC is a development of Adobe Flash Professional CC with several additions to its features (Prastyo and Hartono, 2020). Adobe Animate CC is a professional software used to create various types of projects including animation, interactive media, games, smartphone applications, and others(Labrecque, 2016). Animate CC is an application for creating sophisticated animations and interactive applications that are rich in media and can be published on various platforms(Chun, 2017).

METHODS

This research uses the Multimedia Development Life Cycle (MDLC) development method. This development method has 6 stages, namely Concept, Design, Material Collecting, Assembly, Testing, and Distribution.

Concept

115

This concept stage is the initial stage in media development. The activities carried out at this stage are determining the objectives of the learning media, the concept of the content of the learning media, and who the users of the media are (audience identification).

Design

This design stage includes creating specifications regarding program architecture, style, and appearance. In this stage, we design the material that will be included in the learning media, create a flowchart to describe the flow from one scene to another and create a storyboard to illustrate the description of each scene by including all the multimedia objects.

Material Collecting

In this stage, the materials needed to build learning media are collected, such as the teaching materials that will be presented in the form of text, images, animation, audio, video, and other media.

Assembly (Manufacture)

The creation stage is the stage of implementing various materials and media that have been collected previously into interactive media. This manufacturing stage is based on the design stage that has been designed.

Testing

The testing stage is the stage carried out after the creation of the system or application is complete. Testing will be carried out to see if the system or application can be used or still has errors. The testing phase carried out includes 3 stages, namely compatibility testing by media experts, material compatibility testing by material experts, and usability testing by users, namely students.

Distribution (Distribution)

The final stage is the distribution stage, the stage where the media will be published into an application and then distributed to be used as a tool in the learning process.

In this research, 2 devices were used, namely:
1. Hardware (Hardware)
   - Laptop with specifications: Intel Core i3-5005u CPU @ 2.0 GHz, 4GB RAM, 500GB hard disk
   - Modem / Wifi
2. Software (Software)
   - Windows 10 Operating System
   - Adobe Animate CC

Data Analysis

Data analysis is carried out to determine the value of the products that have been made. Data was obtained from questionnaires filled out by media experts, material experts, and students. To calculate the percent feasibility of a learning media product, the following calculation formula is used:

$$\text{Eligibility Percentage} = \frac{\text{Total obtain score}}{\text{Total maximum score}} \times 100 \qquad (1)$$

RESULTS AND DISCUSSION

Concept

Network service technology learning media was created for class XI TKJ students at Christian Vocational School 1 Tomohon. The learning media created aims to help the learning process and is expected to increase students' interest in the learning process. The content of the learning material refers to the 2013 curriculum syllabus used and contains learning material about data communication. This learning media application has several features, namely a competency menu, materials, videos, evaluations, and profiles. The final result of this learning media product will be in an application format that can be run on an Android device.

Design

The process carried out in this stage is flowchart, manufacturing flowcharts, and making storyboards. See Figure 1.
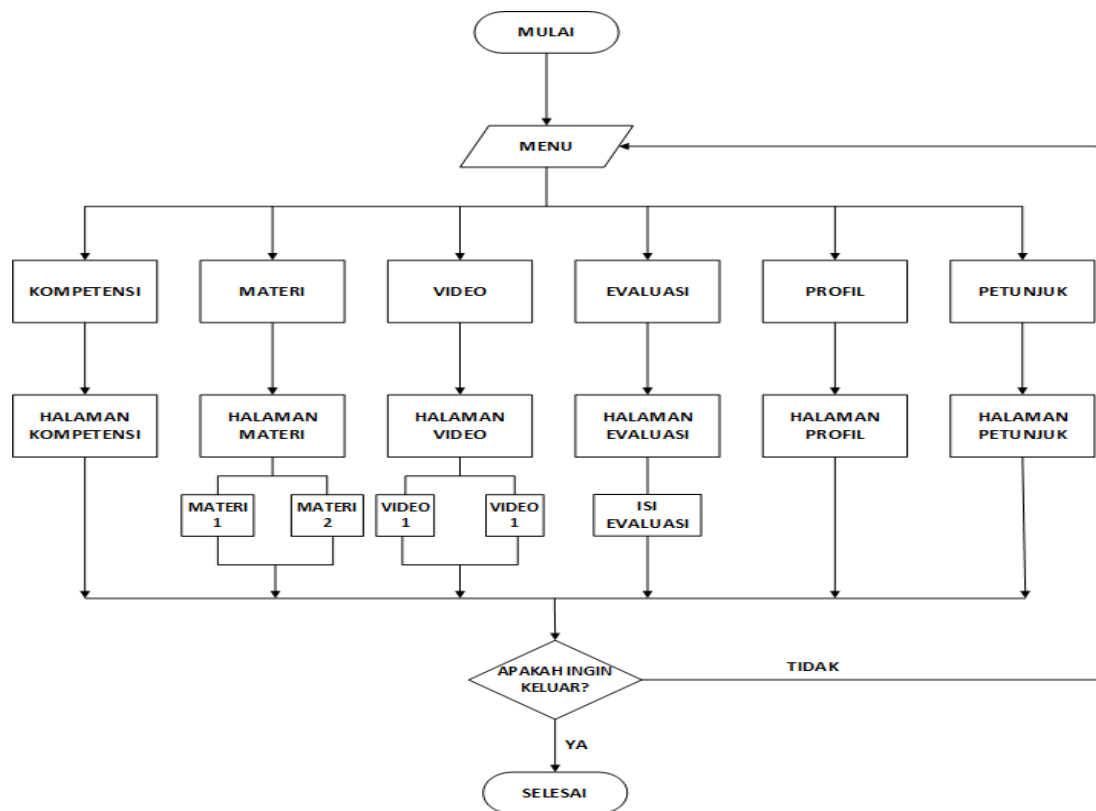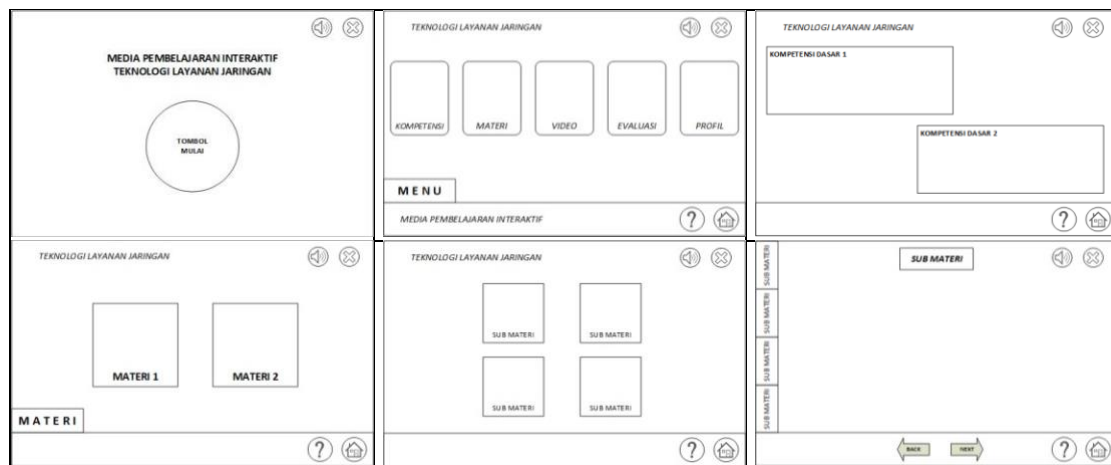
Figure 1. Flowchart

The storyboard was designed after knowing the composition of the content in each part of the learning media, which can be seen in Figure 2.
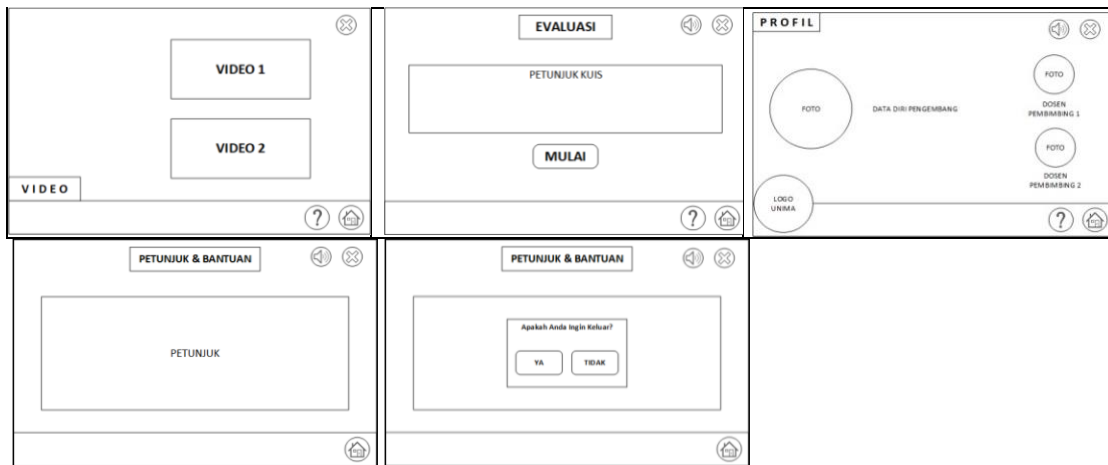
118

International Journal of Information Technology and Education (IJITE)
Volume 2, Number 4, September 2023
e-ISSN: 2809-8463

Figure 2. Storyboard Design

Material Collecting

At this stage, materials are collected according to needs that will be used in developing learning media. The results obtained at this stage are learning materials in the form of data communication material, supporting images that function to clarify the material, videos to support explanations of the material and audio as background music in learning media.

Assembly

The learning media created combines elements of text, images, video, animation, and audio which function to make learning media more interactive. The software used to create this learning media is Adobe Animate software. The results of creating network service technology learning media can be seen in Figure 3.

Gambar 3. Application Display

Testing

The testing stage is carried out after completing the application creation stage. This testing stage includes 3 tests, namely compatibility test, material suitability test, usability test, Compatibility Test, and all are valid.

Distribution

The process carried out at this stage is publishing learning media into applications so that they can be run on mobile devices with the Android operating system. After that, learning media can be distributed to teachers to be used as teaching aids.

CONCLUSION

Based on the results of the research and discussions that have been carried out, the researcher can conclude that interactive learning media has been developed in network service technology subjects at Vocational School Christian 1 Tomohon to increase students' interest in learning and as a tool to assist in the learning process.

REFERENCES

Arsyad, A. (2002). Media Pembelajaran. Jakarta: Raja Grafindo Persada. Arsyad, A. (2009). Media Pembelajaran. Jakarta: Raja Grafindo Persada.

Chun. (2017). Adobe Animate CC Classroom in a Book. USA: Adobe System Incorporated.

Labrecque, J. (2016). Learn Adobe Animate CC for Interactive Media. USA: Pearson Education.

Mandey, L., Tambingon, H., Rotty, V. N., & Pratasik, S. (2022). Pengembangan Media Pembelajaran Prakarya Untuk Siswa Kelas VII SMP Advent Unklab. PETIK: Jurnal Pendidikan Teknologi Informasi Dan Komunikasi, 8(2), 168-176.

Maun, R. T., Togas, P. V., & Pratasik, S. (2022). Aplikasi Multimedia Pembelajaran Proyek IPAS di SMK Kristen 3 Tomohon. Edutik: Jurnal Pendidikan Teknologi Informasi dan Komunikasi, 2(3), 438-448.

Morten, R., Waworuntu, J., & Komansilan, T. (2022). Pengembangan Media Pembelajaran Matematik Berbasis Mobile di Sekolah Dasar. Edutik : Jurnal Pendidikan Teknologi Informasi dan Komunikasi. 2(2), 212-223.

Mustika., Sugara, E. P. A., & Pratiwi, M. (2017). Pengembangan Media Pembelajaran Interaktif dengan Menggunakan Metode Multimedia Development Life Cycle. JOIN Jurnal Online Informatika. 2(2), 121-126.

Novita, R., & Harahap, S. Z. (2020). Pengembangan Media Pembelajaran Interaktif pada Mata Pelajaran Sistem Komputer di SMK. Informatika : Fakultas Sains dan Teknologi Universitas Labuhanbatu. 8(1), 36-44.

Prastyo, I. S., & Hartono. (2020). Pengembangan Media Pembelajaran dengan Adobe Animate CC pada Materi Gerak Parabola. Phenomenon. 10(1), 25-35.

Pratasik, S., & Ahyar, B. M. (2022). Pengembangan Media Pembelajaran Pada Mata Pelajaran Informatika MTS. Edutik: Jurnal Pendidikan Teknologi Informasi dan Komunikasi, 2(3), 359-373.

Rusman. (2012). Model-Model Pembelajaran. Depok: Raja Grafindo Persada.

Sadiman, A. (2011). Media Pendidikan, Pengertian, Pengembangan, dan Pengembangannya. Jakarta: Rajawali Pers.

Sanaky, H. (2013). Media Pembelajaran Interaktif-Inovatif. Yogyakarta: kaukabakibantara.

Setiawan, A. (2017). Belajar dan Pembelajaran. Sidoarjo: Uwars Inspirasi.

Susilana, R., & Riyana, C. (2007). Media Pembelajaran. Bandung: CV. Wacana Prima.

Sutopo, A. (2003). Multimedia Interaktif dan Flash. Yogyakarta: Graha Ilmu.

Wibawanto, W. (2017). Desain dan Pemrograman Multimedia Pembelajaran Interaktif. Jember: Cerdas Ulet Kreatif.