



Development of Interactive Learning Media Based on Autoplay Media Studio 8 Software on Basic Mechanical Engineering Material

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Abstract

This research aims to develop interactive learning media based on *Autoplay Media Studio 8 software*. The research was conducted at SMK Negeri 1 Paguyaman. The research and development model used is a 4-D model which consists of four stages, namely *define*, *design*, *develop* and *disseminate*. The research involved 2 material experts and media experts, and class XI machining was determined because they had previously received learning from the basics of mechanical engineering subject in class X machining. Data was collected using a questionnaire distribution method. Data analysis was carried out using descriptive and quantitative techniques. The results of the research show that the interactive learning media product based on *Autoplay Media Studio 8 software* that was developed is valid and suitable for use to support the learning process in the basics of mechanical engineering class X machining at SMK Negeri 1 Paguyaman. The average practicality and attractiveness of using interactive learning media based on *Autoplay Media Studio 8 software* is 90.8% and 90.6, so the learning media that has been developed by researchers is very practical and very interesting to use in learning. The conclusion of the research is that interactive learning media based on *Autoplay Media Studio 8 software* is very practical and very interesting to be studied by class X machining students at SMKN 1 Paguyaman.

Keywords: Interactive Learning, Studio 8 Media Autoplay, Basics Of Mechanical Engineering

1. INTRODUCTION

National Education System Law Number 20 of 2003 Article 1 Paragraph 1 states that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality. intelligence, noble morals, and skills needed by himself and society.

According to Tondeur et al in Eka Nurillahwaty [1], digital technology is

currently used in educational institutions as a means of supporting learning, both as a means of information, namely a means of accessing information, and as a means of learning, namely a means of assisting learning activities and giving assignments. The learning process is the process of communication between teachers and students using the main media to convey the content of learning objectives.

In order to achieve the expected learning objectives, teachers must be able to create learning that can attract students' interest and motivation to learn, one way is by using appropriate media according to the characteristics of the subject matter. According to Miarso in Lemi Indriyani [2] that learning media is anything that is used to convey messages and can stimulate students' thoughts, feelings, attention and willingness to learn so that it can encourage a deliberate, purposeful and controlled learning process.

Based on observations of MBKM activities from May to July 2022 at State Vocational School 1 Paguyaman (SMKN 1 Paguyaman), it is known that the school has implemented a new curriculum through the Center for Excellence Vocational School Program (SMK-PK). Learning in the SMK PK curriculum in class.

Based on the results of observations during MBKM activities, researchers revealed that the learning media used was only printed books, there was no interactive learning media which contained complete learning tools, learning materials, learning videos, quizzes, as well as evaluations on each element of the basics of Engineering subject. machine. To overcome this, learning media is needed that can support the teacher's teaching process so that there is no longer difficulty in explaining the material. One form of teaching material that can be developed to support the learning process is learning media based on Autoplay Media Studio 8 software.

Autoplay Media Studio 8 is multimedia software that integrates various types of media such as images, sound, video, text and flash into learning presentations [3]. Autoplay Media Studio 8 software can help teachers carry out learning the Basics of Mechanical Engineering because the media contains complete learning tools, learning materials, quizzes, assignments and learning videos.

Interactive learning media developed using Autoplay Media Studio 8 has proven to be effective and suitable for use in learning. This is in line with research conducted by Utami & Mampow in [4] developing Smart Trigo media with Autoplay Media Studio 8 on trigonometry material. The research results show that Smart Trigo motivates students and improves student learning outcomes because learning becomes fun, interesting, and helps students understand trigonometry concepts. Apart from that, the development of interactive media with Autoplay carried out by Ivo Faujjiah in [4] on line material, the results show that students can understand line material and support students to learn independently.

Based on the description above, it shows how important it is to develop learning media in the Basics of Mechanical Engineering subject, to meet the needs of the teacher's teaching process so that it becomes better. So researchers are interested in conducting research with the title "Development of Interactive Learning Media Based on Autoplay Media Studio 8 Software in Basic Mechanical Engineering Subjects in Vocational Schools".

2. RESEARCH METHODS

This research uses research and development (R&D) methods. According to Winarni in Dwi Pidi Pranata [5], the research and development method is a process or steps used to develop a new product or improve an existing product so that it can be accounted for. In this development research using a 4D model. The 4D model is one of the research and development methods used to develop learning tools. The 4D model was developed by S. Thiagarajan, et al in 1974. According to Rijal & Egok in Dwi Pidi Pranata [5], the 4D model consists of 4 stages, namely: define (definition stage), design (design stage), develop (stage development), and deseminat (deployment stage).

3. RESULTS AND DISCUSSION

The results of product development research are in the form of interactive learning content which is utilized in the Basics of Mechanical Engineering learning process, especially material on Basic Manufacturing Processes, Material Knowledge and Technical Drawings based on Autoplay Media Studio 8 Software. The product developed applies stages in the 4D model, which will be explained as follows.

At the Definition (Devine) stage, a Preliminary Analysis (Front and Analysis) is carried out. The results of the initial analysis were from a questionnaire filled out by the head of the machining department at SMKN 1 Paguyaman, getting several results, namely that for the basics of mechanical engineering subject there was no interactive learning media, while the facilities at SMKN 1 Paguyaman supported using interactive learning media. Next is the Task and Concept Analysis (Task Analysis and Concept Analysis), the material entered into the learning media is based on the book Basics of Mechanical Engineering, Mechanical Engineering Skills Program written by Heri Yudianto and Agung Widyastara and some material taken from the internet. Then analyze the Learning Objectives (Specifying Instructional Objectives). The preparation of these learning objectives is based on the SMK PK curriculum. The learning objectives are in Basic Engineering Process Manufacturing material, Material Knowledge, and Technical Drawings. namely: (1) Students are able to understand the basic techniques of manufacturing processes through a brief introduction related to all manufacturing processes applied in industry, including measuring instruments and hand tools, (2) Students are able to understand types of materials, mechanical properties, physical properties, chemical properties, and technological properties related to their functions in the manufacturing process, and (3) Students know the various types of drawing equipment, standardization in making drawings, and read technical drawings according to their projections.

At the Design Stage, at this stage a media design is produced. This stage aims to produce a media design that will be developed. The steps are as follows: Initial Design. The initial design results in this phase include the design of the media used to obtain the data needed in the development process. This phase will produce a flowchart and storyboard which will first be validated by a design expert. After the validation has been completed, it will then be developed at the development stage. The results of the design expert validator assessment were 96.92% which was in the very feasible category. From the average of these assessment results, it can be concluded that the learning media design that has been developed by researchers is

suitable for continuing to the development stage.

Development Stage (Develop), Arranging Media According to Design. At this stage the developer arranges the media according to the flowchart and storyboard that have been validated by design experts. Learning Media Expert Test, the average validity value given by the media validator is 86.95% which is in the very feasible category, from the average assessment results it can be concluded that the learning media that has been developed by researchers is suitable for use and being tested. at SMKN 1 Paguyaman. Learning Material Expert Test, the average validity value given by the material validator is 90% which is in the very appropriate category, from the average assessment results it can be concluded that the learning material that has been developed by researchers is suitable for inclusion in learning media.

In the Disseminator stage, the researcher paid attention to the practicality and attractiveness of the interactive learning media based on Autoplay Media Studio 8 used in the teaching and learning process, and to measure this, the researcher used a student respondent questionnaire. The respondents in this research were machining students in class Results of Student Assessment of the Practicality of Learning Media, The results of the validation of the practicality of learning media are that the average score given by students is 90.8% which is in the very practical category, from the average of the assessment results it can be concluded that the learning media that has been developed by researchers is very popular for use in learning. Results of Student Assessment of the Attractiveness of Learning Media, Validation results of the attractiveness of learning media, namely the average score given by students is 90.6% which is in the very interesting category, from the average assessment results it can be concluded that the learning media that has been developed by researchers is very interesting to use in learning.

Learning Media Development Process. The process of developing learning media in the basics of mechanical engineering subject uses a 4D development model which consists of four stages, namely 1) Definition Stage, 2) design stage, 3) Development Stage, and 4) Dissemination stage (disseminate).

In the first stage, namely the Define Stage, it is a stage to find out the needs and problems that exist in the school related to the learning process. This stage was carried out by carrying out observations at the SMKN 1 Paguyaman school and sending a questionnaire to the head of the machining department of SMKN 1 Paguyaman. After the observation results are obtained, they are summarized and analyzed for deficiencies in the learning process.

The second stage, namely the planning stage (design), is the planning stage and process of creating product designs or learning media. At this stage, the product or media is designed or planned by adjusting the needs data obtained during observations and questionnaires from the head of the machining department at SMKN 1 Paguyaman. At this stage the media or product is designed with the help of storyboards and flowcharts to make it easier to create the product.

In the third stage, namely the development stage, which is the stage of making, testing and evaluating the product or media that has been developed. At this stage the product will begin to be assessed by 4 (four) experts, namely lecturers and teachers who are competent in their fields, two class X SMK teachers, and two UNG lecturers to get responses regarding the product being developed, and at the fourth

stage, namely Dissemination (dissemination) at this stage the media that has been assessed by the validator will be disseminated to class

According to Nieveen in Ardy Irawan and M. Arif Rahman Hakim [6], in relation to educational research design, learning tools are said to be practical if teachers and students consider the learning tools to be easy to use in the field (the material can be understood) and in accordance with the researcher's design plan. Based on the research above, the developer said that this learning media is practical because the Autoplay Media Studio 8 application used in development can be installed easily, can be run on Windows 7, Windows 8, Windows 10, Windows 11, Windows XP in accordance with the statement from Utami and Mampouw [4] so that the media is easy to use.

The material used is taken from books on the basics of mechanical engineering and is equipped with learning videos so that the material can be understood by students. The average assessment given by 12 class According to Feriska Achlikul Zahwa and Imam Syafi'I [7], learning becomes more interesting and interactive if the media contains photos or videos so that they can attract students' attention compared to verbal descriptions. Based on the research above, the developer said that this learning media is interesting because the learning media created contains pictures, videos, quizzes, background music, the material can be read or listened to and there are simulations on the basic technical material of the manufacturing process. The assessment given by 12 students of class.

4. CONCLUSION

1. Based on the results of the research and development that has been carried out, it is concluded that the learning media for the basics of mechanical engineering based on Autoplay media studio 8 in class With this learning media, the material can be conveyed well and learning is more enjoyable.
2. The results of validation by material experts and assessment by teachers of learning media for the basics of mechanical engineering based on Autoplay media studio 8 obtained an average percentage of 90%, including the Very Eligible criteria. The results of validation by media experts on learning media for the basics of mechanical engineering based on Autoplay media studio 8 showed an average percentage of 86.95%, including the Very Eligible criteria.
3. The results of students' responses to the learning media for the basics of mechanical engineering based on Autoplay media studio 8 showed that the average percentage was 90.8%, which was included in the Very Practical criteria and the average percentage was 90.6%, which was included in the Very Interesting criteria.

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