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Development of Learning Media using Macromedia Flash on Digital Simulation and Communication Learning in SMK N 10 Padang

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Abstract: The purpose of this study is to: (1) To develop learning media using Macromedia Flash. (2) To find out the validity, practicality and effectiveness of learning media by using Macromedia Flash in learning Digital Simulation and Communication. The research method used is ADDIE which consists of three stages, namely, Analysis (analysis), Design (design), Development (development), Implementation (trial) and Evaluation (evaluation). The instrument used in this study is a questionnaire used to measure the validity and practicality of the media. Whereas to measure the effectiveness of using multiple choice questions test instruments. The results obtained from this study are as follows: (1) the validity of learning media is declared valid by the validators. (2) The practicality of learning media is practically based on the response of the teacher and students. (3) The effectiveness of learning media increases after using learning media with the average student passing the KKM. Based on the results of the study concluded learning media declared valid, practical and effective for learning activities

Keywords: Learning media, macromedia flash

INTRODUCTION

The development of learning media at this time is very rapid. The number of uses of interactive media used by teachers in the learning process. At this time new technology, especially the use of interactive media has an increasingly important role in the learning process. Many people believe that the use of interactive media will lead us to learning situations where learning with effort can be replaced with learning with fun. Dwi Priyanto (2009: 1) states that learning is a process of interaction between learners and learning resources, but the learning process that takes place in reality is mostly still teacher-centered, where the quality learning process is ideally learning that can help and facilitate learners to develop their potential optimally, and be able to achieve the goals set effectively, oriented to the interests, needs, and abilities of students.

Quality learning processes must be fun, creative, not boring and innovative will be the right choice for teachers. The learning system that has been done so far is the conventional teaching system, thick with an instructional atmosphere and feels less in line with the dynamics of the rapid development of science and technology. The obligation of education is also required to include the values of character education in morals, noble character, creativity, independence and leadership, which are very difficult to do in a conventional learning system. The use of appropriate learning media can stimulate the thinking power of students and students will learn to find out for themselves how the knowledge is able to be digested by students, so that learning becomes more memorable and enjoyable, learning remains under the control of the school so as not to have a negative effect on the availability of the media especially by using media technology (Rahmayanti, 2015: 86).

The results of observations at SMK 10 Padang on September 20, 2017 show that most of the subjects of Simulation and digital communication still use the lecture method with whiteboard tools, so students quickly feel bored and less attractive. The use of interactive media is still not an option, its use is only limited

to theory. The density of material that must be delivered is not in accordance with the time provided, participation (activity) of students is lacking during the learning process. This makes learning communication often not effective and efficient because of inhibiting factors. One of the inhibiting factors of the learning process is the main message of subject matter that is difficult for students to understand because the method or media used is less attractive and feels boring.

The solution to solving this problem is to use interactive media that are needed during the process of learning simulation and digital communication because not all subject matter can be understood by just reading but requires a media to display something abstract and difficult to understand, thus facilitating the understanding of concepts and determine the success of learning.

Instructional Media

Understanding Learning Media

Sardiman (2009: 6) the word media comes from Latin, is the plural form of the word medium which means intermediary or introduction. Media is an intermediary or delivery message from the sender to the recipient of the message. Djamarah (2006: 121) "Media is any tool that can be used as a channel message to achieve teaching goals". Hujair (2013: 3) "Learning media is a tool of methods and techniques used in order to further enable communication and interaction between instructors and learners in the implementation of classroom learning." From some of the opinions above, it can be concluded that learning media are all things or tools that function as intermediaries for messages to stimulate students 'minds and students' interests in order to achieve goals, both teaching goals and other goals.

Interactive Learning Media

Interactive media is a system of delivering complex material, which consists of audio-visual with computer control on the audience (students), which is not only seen and heard but also provides an active response, and the response determines the speed and presentation process (Arsyad 2002: 36) . Sutopo (2011: 21) explains some of the advantages of interactive media, namely reducing the time and space used to store and display documents in electronic form compared to paper.

Increase productivity by avoiding file loss, providing access to documentation at the same time and displayed on the screen, providing multidimensional information in the organization, reducing the time and cost of making photos, giving the facility the speed of information needed with visual interaction.

Macromedia Flash

Macromedia Flash is a combination of learning concepts with audiovisual technology that is able to produce new features that can be utilized in education. Multimedia based learning can certainly present more interesting subject matter, not monotonous, and facilitate delivery. Students can learn certain subject matter independently with computers equipped with multimedia programs.

Figure 1. Display of Macromedia Flash

The advantages of Macromedia Flash

Macromedia Flash has several advantages, among others: (1) Animation and images are consistent and flexible; (2) Image quality is maintained; (3) Loading time (image speed and animation appear or loading

time) is faster; (4) Able to make interactive websites; (5) Being able to animate complex graphics very quickly; (6) Able to automatically work on a number of frames between the beginning and end of an animation sequence; (7) Easy to integrate with other Macromedia programs, such as Dreamweaver, Fireworks, and Authorware; (8) Can be integrated with server side scripting such as CGI, ASP and PHP to create web database applications.

Simulation Learning and Digital Communication

Digital Simulation subjects are subjects that equip students to be able to communicate ideas or concepts through digital media. In the learning process, students can communicate ideas or concepts put forward by others and make them happen through digital presentations, with the aim of mastering the technique of communicating ideas or concepts. The ultimate goal after students learn various techniques and ways of working related to vocational subjects, students are able to communicate ideas or concepts that they have found themselves or modifications to existing ideas or concepts. The development of learning media is focused on class X students at Padang 10 Vocational High School.

The results of the development of interactive learning media on the subject of Post Production and Editing Processes for students of Padang 10 Vocational High School are expected to be a means of self-learning for students, increasing understanding of post-production topics and the Editing Process, learning resources, supporting, encouraging educators' creativity in developing learning media and can be an alternative learning media that can be used by educators in the learning process of Digital Simulation and Communication.

METHOD

Development Procedure

The development procedure used in developing interactive learning media based on Macromedia Flash is to use the ADDIE development model (Analysis, Design, Development, Implementation, and Evaluation).

The subjects of this study were Digital Simulation and Communication subject teachers and X grade students of SMKN 10 Padang, material experts, media experts and class X students.

The type of data used in the development of interactive learning media is quantitative data and qualitative data. Qualitative data is obtained from the results of assessments, inputs, responses, criticisms, and suggestions through questionnaires. While quantitative data obtained from questionnaires about product evaluation in terms of content and design and learning outcomes tests after using teaching media.

Product Trial

Instrument Validation

The instrument validation includes two components, namely: (a) Validation of Instruments for Material Experts conducted by teachers of Digital Simulation and Communication at Padang 10 Vocational School (b) Validation of instruments for media experts is carried out by one of the Informatics Technology lecturers.

Practicality Test

The practical sheet of interactive learning media using Macromedia Flash is done on students. Practical data by students is obtained by using a practicality test questionnaire. This shows that interactive learning media is valid and practical to be used by students in learning

Effectiveness Test

Effectiveness of learning media seen by the achievement of learning outcomes before and after using interactive learning media. The effectiveness test is done by comparing learning outcomes before and after using learning media called one-group pretest posttest design.

DEVELOPMENT RESULTS

Based on the results of Data Analysis Test Learning Validity Media to media experts obtained an average aspect of 0.795> 0.667 the learning media included in the Valid category. Furthermore, the results of the validation with material experts obtained an average of 0.86> 0.667, the material contained in the learning media was declared valid.

The results of the analysis of student responses to the practicality of learning media were obtained by the average results of the practical media learning test based on the acquisition of teacher data which was 93.33% and based on student data acquisition of 82.94% so that the learning media was included in the "Practical" category.

Based on the results of the analysis described, obtained the number of students who completed as many as 26 students (86.67%), this shows that classical completeness has been achieved, it can be concluded that effective learning media is used when viewed from classical completeness.

Based on the results of pretest and posttest data analysis at a significance level of 0.05, the value of the pretest data normality was 0.615 which can be seen in the asymp sig (2-tailed). Because the value of normality is greater than the value of significance (0.615> 0.05), the data is declared to be normally distributed. Furthermore, for the posttest value obtained the value of the posttest data normality of 0.054 which can be seen in the asymp sig (2-tailed). Because the value of normality is greater than the significance value (0.054> 0.05), the data is declared to be normally distributed.

Hypothesis testing is done by t-test analysis. Based on the results of the analysis, the value of t-count is -9,175 with a table of 2,042, because tcount <ttable (-9,175 <2,042) then there is an increase in learning outcomes between before and after the learning media are applied.

CONCLUSION

Learning media for Class X Vocational Digital Simulation and Communication were successfully developed, which were produced in the form of files / softcopy and the results of the study showed that the validity of the learning media was tested by the validator, all aspects were considered "Valid". The practicality test of learning media is obtained from the teacher's response and the response of students at Padang State Vocational High School 10, in the "Practical" category. The results of the learning media effectiveness test were obtained from the value of the pre-test and student tests after using learning media in the effective category. In conclusion the learning media developed can be used in the learning process to improve student learning outcomes.

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