THE DEVELOPMENT OF E-LEARNING MEDIA WITH ADOBE FLASH PROGRAM IN CONTEXTUAL LEARNING MODEL TO IMPROVE THE STUDENT LEARNING OUTCOME IN GEOGRAPHIC RESEARCH PROCEDURE MATERIAL IN THE 10TH GRADE OF SMA NEGERI 1 SAMBUNGMACAN IN 2017/2018

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ABSTRACT

This research aimed: 1) to analyze the students and the teachers' need for e-learning media with Adobe Flash program, 2) to develop e-learning media with Adobe Flash, 3) to find out the feasibility of e-learning media with Adobe Flash program, and 4) to find out the effectiveness of e-learning media with Adobe Flash to improve the student learning outcome.The research method employed was research and development (R&D) method with Dick and Carey model's. The sampling techniques used were purposive sampling and simple random sampling. Data collection was carried out using validation sheet of media expert, material expert, and educator, student trial questionnaire, observation, posttest, and documentation. The results of research were: 1) Need analysis based on dominant result included visual learning characteristics, experience with media use with often category, agree response to the presence of media use, green color visualization, and Comic Sans MS font. 2) The development of research product in the form of e-learning media with Adobe Flash program equipped with picture, map, video, and animation was used to support contextual learning model. 3) The development of e-learning media with Adobe Flash was considered as feasible to use for learning at school based on the result of validation by media expert, material expert, educator, and student trial obtaining modes of 4 (good category in Likert scale) and 5 (very good category in Likert scale) thereby meeting the minimum criteria of e-learning media feasibility with Adobe Flash program with mode of 3 (fair category in Likert scale) as specified by the author. 4) The application of e-learning media with Adobe Flash program evidently improved students' learning outcome through Two-Sample Assuming Equal Variance t-test obtaining $t_{statistic} = 2.85137$ and $t_{table} = 1.68488$. Considering the result of Two-Sample Assuming Equal Variance t-test at significance level of 0.05, it could be concluded that H_0 was not supported because $t_{statistic} > t_{table}$. It means that the use of e-learning media with Adobe Flash program was more effective than interactive PowerPoint media.

Keywords: Media Development, E-learning, Contextual

A. INTRODUCTION

The rapid development of information and communication technology has a major impact on the pattern of relations between individuals, between communities, even between countries. These developments have changed new thinking in society. The role of science requires human resources with high abilities and skills to keep up with technological and communication developments. This is intended so that there is no imbalance between the development of science supported by the development of information technology and communication with the ability of existing resources (Ranius, 2011 in Husamah, 2014: 107).

Technology development has an important role in creating a better quality of

education. One of the things that can be developed in the field of education is the development of distance learning media products online using internet facilities. Distance learning media enables direct interaction between students and material so that students can have broader knowledge, thoughts, and experiences. In learning activities especially geography subjects a teacher needs learning media that are useful to support the teaching and learning process so that learning objectives can be achieved.

Problems in geography learning require proper media innovation. Learning media innovation is designed to be able to package the material thoroughly and easily understood by students. Technology can be utilized in the field of education, especially in learning systems that are able to transform conventional learning into media learning. E-learning is designed to meet the needs that utilize internet facilities as a medium of communication on time. E-learning has become a way to overcome the overall learning experience from the implementation of meetings that take place (Bielawski and David, 2002: 23).

According to Elaine B. Johnson (2002), Contextual Teaching and Learning (CTL) or commonly called the contextual learning model is an educational process that aims to help students see the meaning in the academic material they learn by connecting academic subjects they learn in context in their daily lives, namely in the context of their personal, social and cultural conditions. A learning is not only focused on providing knowledge skills, but also provides learners' learning experiences related to actual problems that occur in the environment.

The need for supporting media includes maps, images, and videos in the learning process so as to be able to provide a concrete picture that makes it easier for students to understand the material. Submission of material by displaying a real picture encourages applicative abilities so that students not only imagine in the mind that sometimes becomes abstract. This is the basis of media product development in this research in the form of e-learning media using the Adobe Flash program in the contextual learning model.

This study aims to: 1) Analyze the needs of students and teachers for the development of e-learning media with Adobe Flash programs, 2) Develop e-learning media with Adobe Flash programs, 3) Know the feasibility of e-learning media with Adobe Flash programs, 4) Knowing the effectiveness of e-learning media with the Adobe Flash program in contextual learning to improve student learning outcomes.

B. METHODS

This research was conducted in class X in SMA Negeri 1 Sambungmacan. The method used in this study is a research and development (R & D) method. There are several procedures in the research and development model designed and developed by Dick and Carey (Dick & Carey, 2015: 6-8) as follows: 1) analysis of needs and objectives, 2) learning analysis, 3) learner analysis and context, 4) formulating performance objectives, 5) developing instruments, 6) developing learning strategies, 7) developing and selecting learning materials, 8) designing and conducting formative evaluations, 9) conducting revisions, 10) summative

evaluations. The procedure used in this study was prepared with modifications and adapted to the needs of the study without reducing the substance of the product development procedure. Modifications are carried out to support the development research process to be more in line with the research focus. The subjects of the trial in this study were students of class X IPS in Public High School 1 Sambungmacan 2017/2018 school year with a total of 63 students. The data obtained in this study are quantitative data and qualitative data. The sampling technique used was purposive sampling and simple random sampling. The instruments used to collect data in this study were questionnaires, observation sheets, and test instruments.

C. RESULTS

1. Needs Analysis

Needs analysis is used to find out the initial information relating to the learning characteristics of students, experience using media, responses to media development, and visualization of the media in the form of choosing colors and fonts. Data needs analysis is known through a questionnaire of needs analysis aimed at students of class X IPS 1, X IPS 2, X IPS 3, and X IPS 4 randomly, amounting to 41 students.

Based on the data analysis of the learning characteristics of students it is known that most of the learning characteristics of students are visual with 39%. Visual learning characteristics mean that in the learning process learners more easily receive learning material including ideas, concepts, data, and information in the form of images.

Questionnaire analysis of needs regarding the experience of using media is known to result in 61%, it is said that

students are included in the category often using and utilizing learning media related to computer devices and internet networks. This will make it easier for students to provide an objective assessment when testing product feasibility and when using products in learning.

The analysis of the learning media development needs obtained results stating that students who agreed at 71% with the development of learning media products. Based on these data more than 50% of students agree on the development of media that support learning. Specifically the media to be developed is e-learning media with the Adobe Flash program in the contextual learning model on the material of geography research steps.

Based on the needs analysis questionnaire related to color visualization, students tend to choose green with a result of 32% or as many as 13 students. Whereas for the dominant visualization of fonts chosen by students is the type of Comic Sans MS with a result of 39% or as many as 16 students. All data from the subsequent needs analysis will be used as a reference for researchers in developing media products.

2. Media Product Development

The stages in product development begin with the formulation of performance objectives, instrument development, development of learning strategies, and development and selection of learning materials. The formulation of performance objectives is used to find out the standard identification so that the media can be displayed correctly. Furthermore, instrument development is carried out to measure standards in product development which are divided into several aspects.

Media related aspects will be validated by media experts. Aspects related to the material will be validated by material experts. Aspects related to the response of product users will be validated by educators and assessment by students through individual trials, small group trials, and field trials.

Development of learning strategies is needed to find out how media can be displayed correctly. The media to be developed in this study is e-learning media with Adobe Flash programs. The aim of the Adobe Flash program is so that the media can be displayed interactively. There are several advantages in the Adobe Flash program, which is capable of displaying images, videos, text, animation. Excellence in the Adobe Flash program can be used to make media products that are appropriate, interesting and interactive.

In product development and selection of learning materials needed data needs analysis which is a reference in developing media products. The design of media products is done through flowcharts and storyboards to facilitate product development. The development of e-learning media with the Adobe Flash program was created with the url address of e-geosragen.com which contained learning media for basic competency material 3.3 steps in geography research. Material can be accessed directly (view) in e-learning or can be downloaded first. The media as a whole presents material that includes images, videos, maps, and animations related to geographic phenomena.

3. Feasibility of Media Products

The feasibility of e-learning media products with the Adobe Flash program is known through the assessment sheet at each stage of the assessment. The questionnaire assessment refers to the Likert Scale which has 5 alternative answers, namely very good, good, sufficient, not good, and very poor (Harvey, 1998: 21). Product feasibility data is obtained through validation of media experts, material experts, educators, individual trials, small group trials, and field trials. Based on the assessment stages that have been carried out, quantitative data are obtained from the evaluation mode of each validator as follows:

Media Feasibility Assessment Table

No	Phase Validation and Trial	Mode
1	Validation of Media Experts	4
2	Validation of Material Expert	4
3	Educator Validation	5
4	Individual Trials	5
5	Small Group Trials	4
6	Field Trials	4

Source: R & D Primary Data, 2017

Based on the table above it is known that the results of the assessment from media experts show mode 4 which means having good criteria. Media experts state that e-learning media with the Adobe Flash program is suitable for use in learning without revision because based on that assessment the product meets the minimum requirements of mode 3 as a product feasibility limit.

Assessment by material experts shows mode 4 which means having good criteria. Based on the assessment by the material experts the product meets the minimum mode 3 requirements as a product feasibility limit. Material experts stated that e-learning media with the Adobe Flash program is feasible to be used in learning with revisions according to suggestions. At

this stage the material expert shows several parts that need to be improved along with suggestions and directions for improvement. Broadly speaking there are 6 parts of errors that need to be corrected. The entire part that has been repaired can then be utilized in learning and used in the next stage of validation.

The next stage is validation by educators as the teaching teacher of geography subjects in class X IPS. The results of the assessment through educator validation obtain mode 5 which means it has very good criteria. Based on the results of the assessment by the educator, the product has met the minimum mode 3 requirements as the product feasibility limit. Educators state that the product in the form of e-learning media with the Adobe Flash program is suitable to be used in learning with revisions according to suggestions. There is one type of error that is evaluated by the educator, namely in the home section (initial view) concerning the suitability of the layout. Then the products that have been repaired can be utilized in learning and used in the stages of testing students.

Based on product trials conducted, it is known that the results of the assessment in individual trials obtain mode 5 which means the product has very good criteria. The results of the assessment in the next stage, namely the small group trial, obtained mode 4 which means the product has good criteria. Then the results of the assessment on the field trial obtain mode 4 which means the product has good criteria. Based on the assessment through product testing by students, the product is declared feasible to be used in learning without revision because it has fulfilled the minimum mode 3 requirements as the

product feasibility limit. Products that have gone through all stages of assessment and improvement can be concluded that the product in the form of e-learning media with the Adobe Flash program is feasible to be used in learning.

4. Effectiveness of Media Products

The effectiveness of e-learning media with the Adobe Flash program is known through research with a quasi-experimental design or commonly referred to as a quasi-experimental. Effectiveness is known through comparison of learning outcomes between classes with treatment in learning using e-learning media with Adobe Flash programs and classes with learning using interactive PowerPoint learning media in the contextual learning model. The classes given treatment are:

a. Class X IPS 1 uses e-learning media with the Adobe Flash program
b. Class X IPS 2 uses interactive PowerPoint learning media

The selection of the class is based on the similarity of the initial abilities of the students and there are no significant differences in learning outcomes. Effectiveness is known by performing the two-sample assumptions equal after the experimental class and the control class through the prerequisite test. The conditions that must be done include the normality test and variance homogeneity by stating that the two classes are normally distributed and homogeneous.

In this study the data normality test used the Lilliefors method with a significance level of 5% (α: 0.05). The process of calculating the data normality test with the Lilliefors method is carried out assisted by Microsoft Excel.

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Based on the results of the data normality test calculation, it is known that the Lhitung value <Ltabel in each class both experimental class and control class and the pretest and posttest learning result, so that H0 is accepted and it can be concluded that the Class with learning uses e-learning media with Adobe Flash and Class programs. with learning using interactive PowerPoint media coming from a normal population.

The variance homogeneity test was conducted to determine whether the sample used was homogeneous or not. The variance homogeneity test uses the Bartlett test with a significance level of 5% (α: 0.05). The variance homogeneity test uses data on student learning outcomes in the experimental class and the control class.

Based on the results of the variance homogeneity test, it is known that in the pretest X2obs <X2 table, which is 1.09251 <3.841 so that H0 is accepted and it can be concluded that the class with learning uses e-learning media with Adobe Flash programs and classes with interactive PowerPoint media learning homogeneous. The variance homogeneity test on posttest

X2obs <X2 table, which is equal to 0.67426 <3.841 so that H0 is accepted and it can be concluded that the class with learning uses e-learning media with Adobe Flash programs and classes with learning using homogeneous interactive PowerPoint media.

The two prerequisite tests that have been carried out can then be continued by testing the effectiveness of the learning media. Based on the comparison of posttest learning outcomes, then the effectiveness test was conducted to determine the effectiveness of learning media in this study. The effectiveness test uses the Two-sample Assuming Equals test with a significance level of 5% (α: 0.05). The calculation of the effectiveness test uses the posttest learning outcomes of the control class and the experimental class obtained thitung = 2.85137 and ttable = 1.68488. Based on the results of these calculations, the test decision is H0 rejected because tcount> t table. So it was concluded that e-learning media with Adobe Flash programs was more effective than interactive PowerPoint learning media.

D. RESULTS

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E. CONCLUSION

Analysis of product requirements includes learning characteristics, media use experience, product development needs, color visualization, and font type. This research and development was carried out through several procedures in accordance with the development model designed and developed by Dick and Carey. Media development products are said to be feasible to use in assessment based learning through validating media experts, material experts, educators, and testing students. Then the effectiveness of e-learning media with the Adobe Flash program was carried out through differences in the posttest learning outcomes of students in the control class and the experimental class. Based on the Two-sample Assuming Equals test, it was concluded that e-learning media with the Adobe Flash program was effective in improving students' geography learning outcomes.

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