

# *Developing Interactive Learning Media for Living Environment Material of the Geography Lesson*

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**Abstract**—Learning media of the living environment to the geographic subject in Senior High School at 11th grade still limited to print media, which is a textbook and LKS (Student Work Sheet), while the creator of learning CD media still limited, thus it is difficult to find it. The reason for this interactive learning media selection is due to this media can help students when learning independently. The aim of this research is to develop interactive learning media that match with criteria as valid media to the living environment material. Recommendations both by material and media experts, that the media is feasible to be developed as an interactive learning media. This media developed by using Adobe Flash CS3 that can combined texts, images, maps, videos, and animations, so media learning display more interesting. This research designed by using the descriptive procedural development model. Steps research and development model which consist of a learning goal formulation, material analysis, media design, editing, prototype, media validation, media trial, and the final product. Research data are qualitative data that obtained from expert validations and also quantitative data that obtained from product trial to students. The result of the media trial to the students obtained the value of 84% with the criteria of "very feasible". Based on the result of the validation test and trial with the students, can be concluded that this product is feasible to be used as learning media in the school.

**Keywords**—Media Development, interactive learning media, life environment.

## I. INTRODUCTION

Advances in technology and communication currently provide a role in various areas one of which is in the education. The role of these technologies takes part also effect changes in the learning system. One of the developments of technology and communication in the education that affects the development of learning resources is the media of instruction. The media is anything that can be used to transmit a message from the sender to the receiver. It can stimulate the thoughts, feelings, concerns, and interests of students, so that the learning process occurs (Sadiman, et al, 2009:7). The media can also help the effectiveness of the learning process and the submission of information.

The effective learning system needs to be created in the achievement of the learning objectives. This learning system is affected by a variety of components such as the matter wants to be taught, the learning objectives to be achieved, the condition of readiness for learning, teaching methods, as well

as the available facilities and infrastructure (Djamarah & Zain, 2006:42). Thus, if components can be fulfilled all then the achievement of learning objectives will be better.

Current learning media development could serve as a teaching tool by teachers. As it is mentioned by (Akbar & Sriwiyana, 2011:223) suggest that the learning media can be defined as a process tool the delivery of messages in communication education and learn in the framework of the achievement of the learning objectives. The media can be used as an intermediary to indicate various events or phenomena that cannot be seen directly by the senses.

Learning media is as one of the intermediaries that can transmit messages so that help overcomes it. The difference in learning style, interest, limitations of sensory resources, barriers geographical distance and time can be overcome by utilizing the media of instruction. In general, the media in education have usability as follows: (a) clarify the presentation of the message so that it is not too overwhelming verbal, (b) overcoming the limitations of space, time, and resources such as sensory objects that are too big, small objects, events that happened in the past, and the concept is too broad, and (c) the use of media education can be overcome students passive attitude (Sadiman, 2009:18).

As it is mentioned (Sumarmi, 2012:3) that a teacher of geography should have the ability to design and implement various instructional models that are considered to match the learning material, including utilizing a variety of sources and media of instruction. In order, to make learning the more effective role of the media as intermediaries can be used as one of the tools to complement the lecture method.

Geography is the study of similarities and differences that occur in the geosphere phenomenon on the earth's surface with an environment and the territorial point of view in a spatial context. Review one of geography, namely the object of the study of the environment, insists the media not only present the texts, but also present pictures, videos, and animations about the material covered. Overview of disasters caused by natural and human factors, the teacher could bring the learning media to show damages caused by natural disasters and the human to students, so students do not need to see firsthand the damage there is a field.

There is environmental material on the subjects of geography class XI who explains about the environment. To be

able to look at the environment in a region that is broad in scope, the teacher may not bring students to show the environment directly, but the teacher can utilize the media as intermediaries in the environmental example images show. So, it needed of media that can help teacher as intermediaries in explaining the matter.

Learning media development is the activity of producing media used in learning with the aim of facilitating the students in understanding the material. As it is mentioned (Arsyad, 2011:106) suggest that four media developments, namely: (1) visual-based media development, (2) audio visual-based media development, (3) computer-based development, and (4) computer-based and interactive video multimedia development. Along with the development and advances in technology such as the use of the computer in education, then the use of media can be used in the learning process.

As part of the learning system, the media has practical value inability to: (a) make the abstract concepts into concrete, (b) display the objects that are too large, (c) display the objects that cannot be seen with the eyes, (d) foster the motivation to learn, (e) give the impression of individual attention to all members of the study group, (f) present information learned consistently reproducible or stored according to needs, and (g) may present a message or information learned simultaneously, overcoming the limitations of time or space (Miarso, 1984:51). The explanation above, that the learning media can overcome the limitations of our senses, space, and time.

Interactive learning CD media is media that developed in accordance with the material environmental learning to students grade XI Social Science Senior High. This learning media is made in the form of software that contains texts, pictures, maps, videos, and animations are packaged in attractive and tailored to the characteristics of high school students. The utilization of interactive learning media will make it easy for the teacher to explain the material students outside observations, so learning that does become more contextual than the teacher only serves the material with the methods lecture. In addition, students will be easier to understand the material that exists outside their observations if taught with multimedia learning materials.

## II. METHOD

This research generally is aimed to develop an interactive learning media. In developing media learning is needed preparation and planning carefully. This research is a model of procedural research. Procedural model is a model of the descriptive, namely describing the plot or the steps to be followed to produce a particular product (Seytosari, 2013: 230). The model that has been developed is a reference to the model of research and development of Borg and Gall (Borg and Gall, 1983: 775). The draft design, development research, and development of Borg and Gall had a goal to develop and validate the product. According to Borg and Gall "there were ten step approach to research and development (R&D) in education, namely (1) Research and information collecting, (2) Planning, (3) Develop a preliminary form of product, (4) Preliminary field testing, (5) Main product revision, (6) Main field testing, (7) Operational product revision, (8) Operational

field testing, (9) Final product revision, (10) Dissemination and implementation".

### A. Media Design

There were a few steps that need to be done before the production of media design that was implemented. The draft design of the media needed to carry out the preparation was the first step in the creation of the media. This step consists of determining the materials displayed, collecting data (images, maps, objects, sounds, and videos) and make a storyboard.

The first step was to determine the material to be made of the media. Based on the analysis of the material, retrieved some of the material that requires an explanation in detail, the meaning was explained by showing the actual sample material. The second was to collect the required data. The collected data obtained from the indirect. Indirect data obtained from a variety of media such some books and the internet. Pictures that have been collected were pictures of objects such as images of environmental conditions in an area, the various crisis in the environment, forms the causes of environmental damage and others. Text as the study of the theory made becomes more succinct explanatory for each image or animation that has been shown.

The third made storyboards. Storyboards were designed that was used as a basis for the creation of the media. In the storyboards were created design how the layout of the display to be made, the placement of images and animations that were designed with as attractive as possible.

After the image data, maps, texts, and videos obtained, the next step was to produce media that consists of making a summary of the material environment and background of media. Then integrate data into one form of media. The production process was based on previously created storyboards. To integrate this data, researchers used the software program Adobe Flash CS3 to be created animations and integrate images, maps, texts, videos, sounds and animations into one of interactive learning media.

The fourth was the editing. At this stage, the production results improvement undertaken. The improvements carried out to know the suitability of products with storyboards, so that the texts, images, and animations in accordance with the existing theory.

### B. Types of Data

Qualitative research data obtained from test validation of media by media and material expert, as well as quantitative data obtained from the media trial results at school. The data obtained were described by a descriptive technique using the percentage criterion. Aspects of indicators and assessment criteria contained in the table, as well as the form of recommendations for each, was the subject of validation and testing.

### C. Data Collection Instrument

Instruments used in data collection for learning media development were questioned form for the evaluation that was given to media and material experts. Evaluation question form

was about the assessment recommendations, criticisms, or suggestions by media and material experts, while the question form for students is closed, namely the question form already provided the answer. So that students simply choose the answer that corresponds to the available columns with a checklist (√). An instrument used to measure the variables was the scale of the Linkert. Scale Linkert then measured variables can be divided into the indicator variables (Widoyoko, 2012:102).

#### D. Data Analysis Techniques

The data have been analyzed in this study was the subject of a media trial data on grade XI Social Science Senior High School 6 Malang. Such data can be processed using the technique of descriptive percentage by turning quantitative data in the form of a percentage. Further, data will be interpreted with a sentence that is qualitative. The results in the form of a percentage of the average score on the assessment of each aspect (appearance, language, interest, suitability, and operation) by students that used for appraising (decent/decent enough/less decent) on products that have been produced. In the processing of this data was required formula. The formula for the data processing of the test subject was a descriptive data analysis formula. The formula for the process data was as follows.

- *Data Analysis Question Form*

Data analysis was questioned form a media test to students. The formula that was used for descriptive data analysis, namely:

$$V = \frac{TSEV}{S - \max} \times 100\%$$

Information:

V = Validity

TSEV = Total score empirical of the validator

S – max = The maximum score is expected

- *Interpretation of The Data*

Having obtained the results from data that was processed using the formula above. The results match the level of validity criteria. A table that was used to measure the degree of validity of interactive learning CD media was presented in the table 1.

TABLE I. THE CRITERIA OF ASSESSMENT DATA PERCENTAGE FOR TRIAL PRODUCT

No	Score	Percentage	Criteria
1.	48 – 60	82 – 100 %	Very Decent
2.	37 – 47	63 – 81 %	Decent
3.	26 – 36	44 – 62 %	Decent Enough
4.	15 – 25	25 – 43 %	Less Decent

Source: Adapted from Akbar, 2013

### III. FINDING AND DISCUSSION

#### A. Experts Validation

The first validated by the material expert. The validation process was performed by submitting a prototype interactive learning CD media with usage instructions. The results of validation in improvement suggestions from the material expert can be seen in table 2 below.

TABLE II. ADVICE FROM THE EXPERT REPAIR MATERIAL

No	The Error Part	Type of Error	Repair Advice
1.	Concept Map	Content	Add example forms causes damage to the environment resulting from human factors. Add examples of conservation.
2.	Material	Content	Clarify the impressions visualization cyclone

The results of the validation data acquired from material expert needed to revise interactive learning CD media. The revision suggested by the material expert was to add other forms of environmental degradation by human factors, add examples of the conservation area, add improve the concept map.

The second, validation was done by media expert. The results of the feedback improvement of media expert can be seen in table 3 below.

TABLE III. ADVICE FROM THE EXPERT REPAIR MEDIA

No	The Error Part	Type of Error	Repair Advice
1.	Cover Design	Display	Cover design needs to be packaged attractively
2.	Product Specifications	Content	Yet to describe the characteristics of the product
3.	Concept Map	Content	Improve concepts mapped
4.	Material	Content	The content has not been in accordance with the purpose of learning

The revision suggested by the media expert was improved the cover design and display, improve product specifications, and improve concept map. Advice from material and media experts used to revise the media CD interactive learning that has been developed.

#### B. Trial Result

In this section will be described in more detail the results of data obtained from a test media to students. The data obtained was of trial results on the student's grade XI Social Science Senior High School 6 Malang. Data analysis was performed by calculating the score on the questions in the question form.

The results of the assessment of students learning interactive CD media have retrieved some aspects, namely: display, language, conformity, operation, and interest.

TABLE IV. THE FREQUENCY DISTRIBUTION OF THE AVERAGE SCORE OF THE FIFTH ASPECT

No	Aspect	Average Scores	Criteria
1	Display	89	Very Decent
2	Language	87	Very Decent
3	Conformity	85	Very Decent
4	Operation	83	Very Decent
5	Interest	82	Very Decent
The number of total scores of the average value		426	
Average number of total overall aspects of the score		84	Very Decent

Based on table 4, the average score obtained with the frequency distribution of research, namely display, language, conformity, operation, and interest. This was a bar chart of the frequency distribution of the overall aspect based on valid criteria.

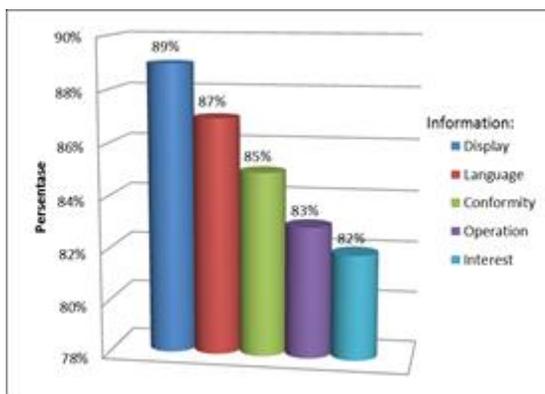


Fig. 1. Frequency distribution graph of the average score of the fifth aspect

Based on the results of the calculation of the average score each aspect showed that the response of students about interactive learning CD media was decent. The average number of score values given students, namely 85 with very decent qualification. Thus, it can be concluded that overall, showed the media a CD interactive learning is the very decent qualification.

Data obtained from test students grade XI Social Science Senior High School 6 Malang showed that interactive learning CD media were very decent and can be utilized as a medium of instruction in the classroom. Interactive media students' response to this was very good. Such a response can be seen from the resulting value, namely media have valid criteria.

But there are suggestions and recommendations from some students that mention some of the shortcomings of the learning CD media. The media among other improve to the clarity of images and animations. These media were needed to repair the interactive learning CD media becomes better.

Suggestions for the revisions of the subject test were also included as perfection in this media. Revisions were about the clarity of the texts on the media, images, and videos. Revisions required for interactive learning CD media for better so it can be used in learning.

The results research on the interactive learning CD media development of the material for the environment showed that the media can be used as a tool for the teacher in explaining the material environment. Trial results in students of Class XI Social Science showed this media with a valid percentage amounted 83.5%. Therefore, it can be said that the interactive learning CD media development can be used as a media by the teacher explain the environment material. Overall, it can be said that the learning CD media development were designing, producing, and validate media that meet the criteria as a valid media in the material environment. So, media can be used by the teacher in explaining the material environment for students grade XI Social Science Senior High School 6 Malang.

#### IV. CONCLUSIONS AND SUGGESTIONS

##### A. Utilization Advice

Teachers must understand the content of the manual use of media and can use the media properly learning CD so that its application did not make a wrong concept in students. Before the learning process is implemented, tools that will be used in a study prepared in advance, in order not to hinder the course of study to be performed. In applying the learning CD media, teacher have to do preparation properly, so that learning can take place smoothly.

##### B. Further product development advice

Add an animation about the material environment. To produce a more valid and interesting. The process of testing should be done more than once. Experimental research that is conducted to compare between the classes that use learning CD media with classes that do not use CD media of instruction.

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