

Developing Video Based Learning Media with Scientific Approach of Grade 4th Elementary School

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Abstract—The problem of this research is the student's learning outcomes which is still low because of some factors, they are: lack variation of learning media, lack of student's active role in learning process, and the lack of teacher in using the school facility in technology like using projector. The aim of this research is to develop video-based learning media with scientific approach and to know the effectiveness of developing media to improve the student's learning outcomes. This research is the type of research and development (R & D). The research subjects were 29 students of grade 4th in 060925 Elementary School Sudirejo Medan. The development model in this research refers to 4D Research and Development which consisted of 4 main stages, that is define, design, develop, and disseminate. On defining stage, the curriculum and syllabus will be used as the guidelines of media developing. Then, the collected material was designed in video-based learning media on *Indahnya Keragaman Budaya Negeriku* subtheme. On developing stage, the learning media development should be validated to know the feasible learning media. Validation was used by some experts, material media, and graphic design expert. Video-based learning media on *Indahnya Keragaman Budaya Negeriku* subtheme is very feasible. It was shown from the validation result by material expert 3.7, media expert 3.6, and graphic design expert 3.6. After expert validation is carried out then continued with the test of student learning outcomes, this test is conducted to determine the effectiveness of the use of learning videos. The results of the students' pre-test obtained an average score of 56.72 and the results of the students' post-test obtained an average of 91.37. The results of the effectiveness of student learning outcomes is 0.7 or classified as high effectiveness.

Keywords : *developing, learning media, video, scientific approach*

I. INTRODUCTION

Curriculum 2013 has an opinion that the knowledge given to students cannot simply be transferred but the learning in the 2013 curriculum provides opportunities for students to be more active in finding, processing, and reconstructing. Therefore, in 2013 curriculum teacher should guide the students in finding, processing, and reconstructing the knowledge.

To create the active learning, the 2013 curriculum emphasizes to use scientific approach in learning process. The scientific approach is a learning that emphasizes teacher to create the active learning through observing, questioning, collecting information, associating and communicating activity related to the material in learning process [1].

Based on the observing and interviewing result with the class teacher of grade 4th elementary school showed that the student's learning outcomes on social subject were still relatively low. The student's average still low around 65.5. If the maximum pass standard is 70 so 14 students from 28 students failed. The low of Student's learning outcomes cause by some factors. First, learning media that teacher used has not varieties and the teacher just explain the material on the board and using pictures. Second, the students are still less active in learning process. Third, teacher is still less in utilizing the school facility related to technology like using projector.

Based on the background above, the researcher try to give the alternative solution to solve the problem by doing developing video-based learning media with scientific approach on learning process so it can improve the student's learning outcomes. Video is one of the audio-visual media, where this media use some human senses, the students is not only listen the teacher's explanation but also see what realities are displayed by the teacher in the media.

II. THEORETICAL FRAMEWORK

That media are all physical devices that can present messages and stimulate students to learn [2]. The physical equipment in question can be in the form of photos, images, videos, graphics, films, slides, and computers. The benefits of media in the learning process according to [3]: (1) Clarify the message so as not too verbal, (2) Resolve the limitations of space, time, energy and sense power, (3) Allow learning passion, more direct interaction between students and learning resources, (4) Allows students to learn independently according to the talents, interests, and abilities of each student

Suggests the classification of media used for learning activities consisting of: print / text media, media exhibition,

audio media, moving images, multimedia, web-based media or the internet [4].

Video is an interesting medium because it displays images and sound. An event can be captured in a video so that the incident can be seen anytime and anywhere. Learning video is "a very effective medium to help the learning process, both for individual, group and mass learning".

The characteristics of learning video media are clarity of message, stand alone, friendly with the user, content representation, visualization with the media, using high resolution quality, and can be used classically or individually [5].

Supporting tools in the learning process must have advantages and disadvantages. On this following describes the advantages of learning videos: (1) Describe a process or event that can be seen repeatedly, (2) Easy to serve, (3) Interesting, so that it can encourage and increase student motivation, (4) Effective to instil attitudes and affective aspects

Meanwhile, the weaknesses of video media are as follows [6]: (1) It takes a long time in the manufacturing process to create a learning video, (2) Requires substantial costs for the purpose of making learning videos, (3) It can only be used with the help of computer / laptop and require the projector and speakers when used in the classroom learning process.

Curriculum 2013 emphasizes learning that is able to develop students' creativity. To create active learning, the 2013 curriculum emphasizes using a scientific approach in the learning process. The scientific approach in learning does not only focus on how to develop students' competencies in conducting observations or experiments, but how to develop students' knowledge and skills.

Learning with a scientific approach is a learning process that is designed in such a way that students actively construct concepts, laws or principles through observing stages (to identify or find problems), formulate problems, propose or formulate hypotheses, collect data with various techniques, analyze data, draw conclusions and communicate concepts, laws or principles that are "discovered".

The steps of scientific learning include five steps: Observing, Questioning, Associating, Experimenting, and Networking. Steps of learning with a scientific approach namely [8], observing, questioning, collecting information, associating / reasoning, communicating, and stablishing networks.

III. RESEARCH METHODS

This research is a type of development research or R&D. Research and development is a process or steps to develop a new product or perfect an existing product, which can be accounted for [9].

The development model in this study refers to the 4D (four-D) research and development model. [10] the 4D

research and development model consists of 4 main stages, namely define, design, develop, and disseminate.

Instruments of Collecting Data

The instruments used in this study are as follows:

1. Test

Written tests are carried out to determine student learning outcomes before (pre-test) and after (post-test) following the learning process using video-based learning media.

2. Questionnaire

Questionnaire is a data collection technique that is done by giving a set of questions or statements in writing to the respondent to be answered. Questionnaire in this study was given to material experts, media experts, and graphic design experts

Technique of Analyzing Data

Validation questionnaire sheets are used to obtain assessment data from experts on video-based learning media that have been developed. Following are the steps to analyze validation assessment data instruments,

1. Calculate the average score

$$\bar{X} = \frac{\sum x}{n} \quad \text{Source: [11]}$$

Change the average score into qualitative criteria by referring to the 4-scale value conversion the reference to conversion values is as follows [12]:

Classification of Learning Media Validation

No.	Score Range	Category According to Mardapi	Modifications
1	$X > 3$	Very positive	Very feasible
2	$3 > X \geq 2,5$	Positive	Feasible
3	$2,5 > X \geq 2$	Negative	Less feasible
4	$X < 2$	Very Negative	Not feasible

2. Analysis of student learning outcomes data

Data on students' learning outcomes is obtained from students' ability to answer test questions.

• Individual Student Learning Outcomes

The value of student learning outcomes individually calculated in the following ways:

$$\text{Score} = \frac{\text{Jumlah Jawaban yang Benar}}{\text{Jumlah Soal}} \times 100$$

• Average Class Value

The average student value classically (class) is calculated as follows:

$$\bar{X} = \frac{\sum X}{n}$$

[13]

• Classical Learning Completeness

Classical student learning completeness is calculated by

$$P = \frac{\sum \text{siswa yang telah tuntas}}{\sum \text{siswa}} \times 100\%$$

Data Analysis of Product Effectiveness Test

N-gain testing is done to determine the increase in learning outcomes between before and after learning, calculated by the formula:

$$(N - g) = \frac{(gain)}{(gain)_{maks}} = \frac{s_{post} - s_{pre}}{100 - s_{pre}}$$

IV. RESULTS AND DISCUSSION

Video-based learning media in Indahnya Keragaman Budaya Negeriku sub-theme of grade 4th Elementary School as a whole are declared very feasible, it means that the video learning developed is very suitable to use in the classroom learning process. This is evidenced by the results of validation by material experts at 3.7 or in the very feasible category. The results of media expert validation were 3.6, this included very feasible category, and the validation of graphic design experts was 3.6 or in the very feasible category.

After the expert validation was carried out then continued with the learning outcomes test, this test was conducted to determine the effectiveness of the use of learning videos. The results of the students 'pre-test obtained an average score of 56.72 and the results of the students' post-test obtained an average of 91.37. The results of the effectiveness of student learning outcomes is 0.7 or classified as high effectiveness.

V. CONCLUSION

Video-based learning media on Indahnya Keragaman Budaya Negeriku subtheme is very feasible. It was shown

from the validation result by material expert 3.7, media expert 3.6, and graphic design expert 3.6

For the learning outcomes test, the average of the students 'pre-test was 56.72 and the results of the students' post-test obtained an average of 91.37.

The results of the effectiveness of student learning outcomes is 0.7 or classified as high effectiveness.

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