

Developing Scientific Literacy-Based Video Media Using Capcut for Energy Sources to Improve Elementary School Students' Learning Outcomes

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Abstract: This study aims to produce a development product in the form of a scientific literacy-based learning video on the Energy Source material to improve learning outcomes for students in grade III of elementary school and analyze the effectiveness of Capcut learning videos, scientific literacy, scientific literacy-based learning videos on the Energy Source material for grade III to improve student learning outcomes in elementary school. This type of research is research and development using the Borg and Gall model. The product is a scientific literacy-based learning video media. The trial subjects of this study were grade III students of Gadu 01 Elementary School. Data collection used interview guide instruments, questionnaires, expert validation sheets. The need for the developed product was analyzed using qualitative descriptive. The developed product was tested for its feasibility by material and media experts. The effectiveness of the learning video on improving learning outcomes was analyzed using Independent Sample T-test statistical analysis with a significance level of <0.05 . Grade III students of Gadu 01 Elementary School were the research subjects. The data collection instruments used were test techniques, interviews, and questionnaires. The results of the needs analysis showed that students and teachers needed the product developed in this study. The product development design was carried out with the stages of planning, preparation and evaluation. The overall average score of validation from material experts and media experts was 4.33, 4.67 respectively and both were included in the "Feasible" criteria. Feasibility was also supported by the results of student and teacher response questionnaires which showed an average score of 4.40 and 4.30 with the "Very Good" and "Excellent" criteria. The developed product was also proven effective in improving the learning outcomes of third grade elementary school students based on the results of the Independent Sample T-test <0.05 , namely 0.000.KKM.

Keywords: Capcut, scientific literacy, learning videos

1. Introduction

To realize the goals of national education, there must be improvements at every level of education, in this case teachers as a vital or main implementing component, for the closeness of talent, capacity, reality and education, so that learning outcomes will encourage improvement. The main objective in science learning is to build students' scientific literacy. identifying questions, obtaining new information, describing scientific phenomena, and drawing conclusions based on scientific evidence (Sofyan & Amir 2019). Learning is an interaction between educators and students in a learning environment. The learning process is the process of communicating messages from the message source to the message recipient through certain media. Based on the results of interviews conducted on January 8, 2025 with students and teachers of Gadu 01 Elementary School, most teachers need learning media that can help the learning process. Based on the results of the analysis of learning media needs, Science literacy-based learning videos on science subjects, energy source material for grade III teachers, Gadu 01 Elementary School. teachers still use monotonous learning methods that are centered on the teacher (Kundono, & Ismaya, 2023). the use of less interesting learning media. The implementation of a good learning process in order to achieve the goals and learning, in delivering the material the teacher needs learning media. The results of the analysis of the disclosure of student needs can be identified that 65% of students answered the score for the Science subject test on Energy Sources material got 50-70, 60% of students answered that the media often used by teachers did not make students understand more and more motivated in learning.

Media development is necessary to motivate students to participate in learning (Jihanifa, FA, et al., 2023). The learning media developed in the form of scientific literacy- based videos can convey information and knowledge in a planned manner between teachers and students, thus creating effective and efficient learning. The development of learning media is necessary to motivate students to participate in learning so that it can improve student learning outcomes. The learning media developed in the form of scientific literacy-based videos. Researchers chose to develop videos as learning media because the visualization becomes more and can be watched repeatedly (Hasibuan, 2024). With the help of several Capcut software in making learning videos. Science is seen as multidimensional, logical scientific knowledge, high-level thinking in understanding information, and is linked to lifestyle. In line with the research of Mey Prihandani Wulandari, the use of animated video media based on scientific literacy is effective in improving student learning outcomes (Prihandani, 2019). Further scientific research on the use of multimedia learning based on scientific literacy can improve students' scientific literacy (Latip, Abdul, et al., 2015).

1.1 Conceptual framework

Based on the background of the problem and the theoretical study presented, it turns out that the learning interest of Grade II students of Gadu 01 Elementary School, Gunungwungkal District, Pati Regency is still low. As a result of low learning outcomes, the researcher then tried to find alternatives to overcome this problem. The researcher conducted this research using a research and development model. The researcher developed a learning video media based on Scientific Literacy. The development includes several steps Sugiyono (2016: 409), namely: potential and problems, data collection, product design, design validation, design revision, product trial, product revision and usage trial.

Based on several things that have been stated above, a framework for thinking can be formulated with the following stages: (1) Needs analysis; (2) Design of Scientific Literacy- Based Video Media; (3) Media validation by experts and revision; (4) Product trials; (5) Product revision and use, which is expected to improve student learning outcomes.

1.2 Research objectives

This research was conducted to analyze the needs, development and analyze the effectiveness of scientific literacy-based learning videos assisted by Capcut software on the material of Energy Sources for Class III to improve the learning outcomes of elementary school students.

2. Methodology

2.1 Research design

Researchers used a Research and Development (R&D) design using the Borg and Gall model. This research is scientific in nature to research, design, produce and test the validation of the resulting product (Sugiyono, 2017). However, this research still involves lecturers as assessors and mentors to refine and perfect the product to be developed. Through this research, researchers seek to develop multimedia learning products, good and efficient learning in the form of learning materials and media, not to test theories. In this research, the resulting product is teaching materials as an alternative learning media.

2.2 Respondents of the study

The initial data sources for this study were teachers and third-grade elementary school students in Gadu Village, Gunungwungkal District, Pati Regency, in the even semester of the 2024/2025 academic year. The subjects of this study were third-grade students of Gadu 01 Elementary School. The sample size in this study was 16 students, consisting of third-grade students as the control class.

3. Findings and Discussion

The research began by analyzing the need for learning video media based on Science Literacy by conducting observations and interviews on December 6, 2024, the results of the observations are as follows. To find out the conditions in the field, researchers conducted observations, this observation was carried out in class III of Gadu 01 Public Elementary School. After conducting observations, researchers found that there were still many students who were less interested in participating in science learning because in teaching the teacher only lectured without using media, students did not understand the material taught by the teacher, so students felt burdened in learning. receive learning. This is evidenced by the student's complete score of 6 out of 16 students from the results of learning science Energy Sources Material in Class III. This is due to the passive teaching process.

The latest innovations are needed in the teaching process so that it is not monotonous by being centered on the teacher. Researchers have conducted interviews with students and teachers to find out the development of video media based on science literacy. The need for products in the form of learning videos based on science literacy in this study aims to improve the learning outcomes of class III students at Gadu 01 Public Elementary School. Product demand data comes from the results of interviews and the results of filling out questionnaires. Based on the results of the interviews, the material taught by the teachers was not engaging enough for students, and the facilities and infrastructure were inadequate. This resulted in a lack of student motivation and interest in participating in the learning process. "Students are less motivated to participate in science lessons if teachers don't use learning media. This low student interest in learning is caused by the ineffectiveness of the learning media used." (RUS, December 8, 2024).

It can be concluded that the development of learning videos based on scientific literacy is very necessary, so that it makes it easier for teachers to deliver learning materials. Needs data was also obtained through a questionnaire with data sources of third-grade students of Gadu State Elementary School and third-grade teachers of the school. The results of the student and teacher questionnaires can be concluded that in science learning students need learning media to help students understand the science material. The average "Yes" answer from the results of filling out the student needs questionnaire showed a result of 81.90%, while the average "Yes" answer from the results of filling out the teacher needs questionnaire showed a result of 87.50%. Based on the results of interviews and filling out the questionnaire, it can be analyzed that the level of need for learning videos based on scientific literacy is considered quite high, so students need learning videos to make it easier to understand the science subject matter. By understanding the subject matter, the learning outcomes of third- grade elementary school students will improve and also become enjoyable. The development of learning video media based on scientific literacy begins with planning, setting objectives, curriculum analysis, material analysis, preparing learning tools, and finally making media planning and assessment instruments, all of which can be described as follows:

3.1 Curriculum Analysis

At this stage, researchers analyzed several curricula, including Competency Standards, Content Standards, and Process Standards.

3.2 Setting goals

This study aims to improve students' understanding of the science learning material on energy sources for grade III elementary school.

3.3 Material Analysis

The material analysis was conducted with the aim of determining the suitability of the material to be presented in the learning media to facilitate teachers in carrying out learning activities. Based on the results of the material analysis, it was discovered that the textbook used was the Merdeka curriculum student book theme 4. This analysis aimed to determine the suitability of the material with the core competencies. This analysis also aimed to determine the consistency between core competencies, indicators, materials, and evaluations. This stage was carried out in several stages, including discussions with grade III teachers, lecturers, the principal, and colleagues, which were conducted separately. All of this aimed to ensure that the product developed was in accordance with the curriculum and the characteristics learned by students.

3.4 Developing a Learning Implementation Plan

At this stage, before implementing the learning, the researcher created learning devices consisting of Teaching Modules and ATP.

3.5 Designing a learning video on energy sources

The design of this Energy Source Learning Video was made with supporting instruments. The inserted instruments consist of product assessment instruments by experts, teacher response instruments, and student response instruments. The developed products were analyzed using qualitative descriptive. The developed products were tested for feasibility by material and media experts. The effectiveness of the learning video on improving learning outcomes was analyzed using Independent Sample T-test statistical analysis with a significance level of <0.005 . Grade III students of Gadu Elementary School were the research subjects.

The design chart for developing learning video media based on scientific literacy can be seen in Figure 1 as follows:

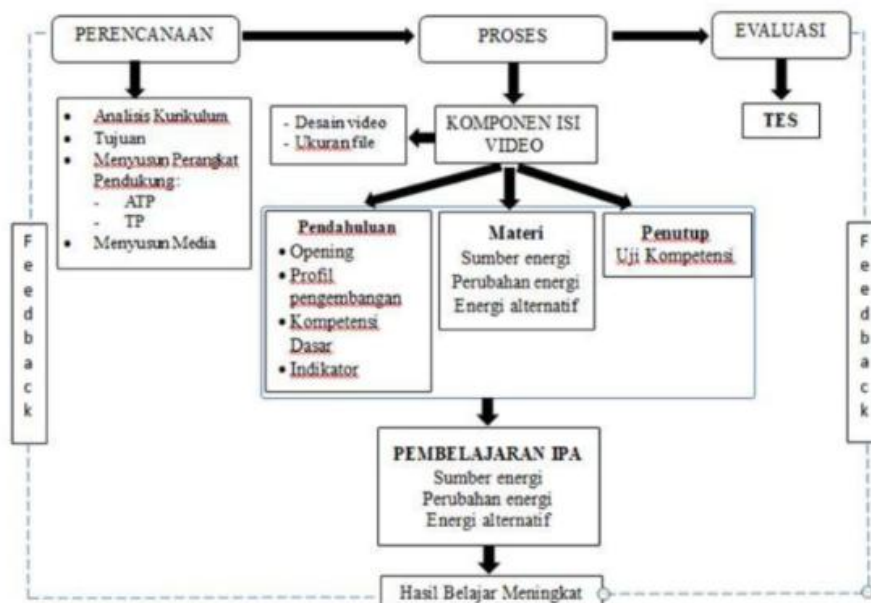


Figure 1. Development Design Development of video media based on scientific literacy on the topic of energy sources

The content component consists of three components: introduction, content, and conclusion. The introduction contains the teacher's profile and the title of the media, TP, and ATP. The content section presents learning materials on energy sources. The final section is the conclusion, which includes practice questions to help students better understand the material in the Science Literacy-Based Learning video.

4. Conclusions and Recommendations

The results of the student and teacher needs questionnaire showed that the average answer "Yes" was 81.90% of students and 87.50% of teachers based on the average needs questionnaire, proving that science literacy-based learning video media is needed by students and teachers to improve the results of all four grade students in elementary school.

The assessment of the media expert and material expert validators showed the assessment results with an overall average score from the validation from the material expert, and the media respectively were 4.33, 4.67 and both were included in the "Feasible" criteria. The results of filling out the student and teacher response questionnaires also provided results with an overall average score from the validation from the material expert, and the media respectively were 4.33, 4.67 and both were included in the "Feasible" criteria. This proves that the science literacy-based learning video media is suitable for use to improve the learning outcomes of grade III students of Gadu 01 Elementary School in Gunungwungkal District, Pati Regency.

The scientific literacy-based learning video media developed in this study is effective in improving the learning outcomes of third-grade students of Gadu 01 State Elementary School. This is proven by the significance of the independent t-test on improving student learning outcomes which is <0.05 , which is 0.00. Thus, it can be concluded that H_a is accepted and H_0 is rejected, meaning that there is a difference in student learning outcomes between those who participate in learning using scientific literacy-based learning video media and students who do not participate in learning using scientific literacy-based learning video media.

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Conflict of Interest

The authors declare there is no conflict of interest.

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