Learning Videos Based on Problem-Based Learning in Fifth-Grade Elementary School

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ABSTRACT

The lack of learning media appropriate to student needs will affect student learning outcomes. This study aims to produce instructional video learning media products that are tested for validity. This type of research is developed with the ADDIE model. The subjects involved in this research were content experts, design experts, media experts, and 37 fifth-grade elementary school students. Data collection in the study was carried out using test and non-test methods, with research instruments in the form of learning achievement tests and media product validity questionnaires. The data obtained in the study were then analyzed using qualitative and quantitative analysis techniques. The research analysis showed that problem-based learning video media products were declared valid with the results of subject matter expert reviews of 92.30% (very good). Learning design experts at 90.00% (very good). Learning media experts 96.15% (very good). Student questionnaire responses, namely individual trials, 94.33% (very good), and small groups, 92.11% (very good). Problem-based learning video media products are effectively used. Based on these results, problem-based learning video media can improve student learning outcomes.

1. INTRODUCTION

Education is carried out to prepare individuals to solve various social problems that exist in everyday life (Hidayat, 2020; Sulfemi, 2019). One of the subjects that examine social problems is social science subjects. Social science subjects combine basic concepts from various fields of social science, which are then structured through a psychological approach (Ariesta & Kusumayati, 2018; Jumriani et al., 2021). Social science education is carried out by introducing students to various social phenomena that occur in society to ensure students can become good citizens and be accepted in society (Khasanah et al., 2018; Nurjamilah, 2022; Wahyuni et al., 2018). More detail explains that social studies learning is carried out to direct students in forming attitudes and personalities, and improving students’ mastery of skills and knowledge, especially in social knowledge (Maulida et al., 2020; Rosidah, 2017). Students who understand social science material well will be able to think logically, analytically, systematically, critically, and creatively and socialize in society (Paramita, 2019; Rahmaniati et al., 2018). The reality shows that...
students’ knowledge competence in social science material is still relatively low. It is shown by the results of observations and interviews that have been conducted at SDN 1 Panji. The observations and interviews show that out of 37 students’ social studies learning outcomes, 17 (45%) students still have grades under the Minimum Quantity Criteria (KKM), namely 80, with an average score of 67.90. Students’ low social studies learning outcomes are because most teachers still use conventional learning models such as lectures, while students only listen passively. In the learning process, the media often used is only printed teaching materials such as textbooks and other media such as power points and learning videos from YouTube. The lack of innovative learning media that suits students’ needs impacts low student learning outcomes, and if allowed to continue, this will also impact not achieving social science learning goals.

One effort that can be made to overcome these problems is to apply learning media that suit the needs of students. In the modern era like today, the use of learning media is very diverse. One of the learning media used is learning videos. Learning Videos are complex media with audio-visual elements that contain learning elements to make it easier for students to understand the material being taught so that they are more motivated to participate in the learning process (Andriani et al., 2019; Yendrita & Syafitri, 2019). Animated video is a two-dimensional or three-dimensional video containing several moving images (Ponza et al., 2018; Yuliani et al., 2017). Visualized media visualized in the animated form will be more meaningful, interesting, and easy to accept, understand, and can motivate students to learn (Ariani & Ujianti, 2021; Biassari et al., 2021). The advantage of learning videos is that they can combine moving images and sound to attract users to understand and absorb the material (Aryani & Wahyuni, 2021; Tegeh et al., 2019). The application of learning video media will enable students to learn independently because the use of learning videos can encourage student activity while studying in class, where students become faster to build their mindset from what they are seeing (Agustini & Ngarti, 2020; Mayar et al., 2022; Yuanta, 2020). In addition, students can also build a critical mindset so that they will have thousands of understandings of what they get from a video (Prawira et al., 2021; Syafi’i et al., 2020). The application of learning video media will be more effective if problem-based learning models accompany it. The learning model is a learning process design the teacher prepares to increase the learning process’s effectiveness (Emrisena et al., 2018; Farisi et al., 2017). The problem-based learning model is a problem-based learning model implemented using an authentic problem-based learning approach, so students can reconstruct their knowledge and improve higher-order thinking skills (Ariani & Kristin, 2021; Iskandar et al., 2021). Learning carried out using the PBL model focuses on how students solve the problems presented and are not only limited to studying concepts related to problems but also scientific methods for solving these problems (Prasetyo & Kristin, 2020; Sitompu, 2021).

Several previous studies have revealed that interactive instructional video media can improve mathematics learning outcomes in the subject of speed in fifth-grade elementary school (Biassari et al., 2021). The results of other studies reveal that problem-based learning and science-based learning videos are valid qualifications, so they are very feasible to develop and teach students (Siyowati & Utami, 2022). The results of other studies reveal that problem-based learning video media can significantly improve students’ mathematical thinking skills (Haqiqi & Syarifa, 2021). Based on some of the results of these studies, problem-based learning video media can significantly improve learning outcomes and students’ thinking skills. In previous research, no studies specifically discussed the development of problem-based learning-based learning videos in social studies content learning for fifth-grade elementary school students. So this research is focused on this study to produce learning video media products that are tested for validity.

2. METHOD

This research belongs to the type of development research which was developed using the ADDIE model. The ADDIE development model consists of five research stages, including the analysis, design, development, implementation, and evaluation stages, which is the type of this research. The test subjects for the product of research on the development of learning videos were experts and fifth-grade students in one class at SDN 1 Panji, totaling 37 students with various student learning outcomes from high, medium, and low in social science learning—methods of data collection by recording questionnaires, and tests. Questionnaires were recorded to collect input/scores from experts and students, and tests were used to determine the effectiveness of using learning videos containing multiple-choice test questions, which were used to collect data on student learning outcomes. The research instrument grids are presented in Table 1 and Table 2. The data obtained in the study were then analyzed using qualitative and quantitative analysis techniques obtained from the review of study field experts, learning media experts, and learning media design experts on the results of student reviews through individual and small group trials through questionnaires.
3. RESULTS AND DISCUSSION

Results

Research on the development of PBL-based learning video media was carried out in grades of five odd semesters at SDN 1 Panji, applying the ADDIE development model. The results of each stage of the ADDIE development model are as follows: The first development stage is the analysis stage. At this stage, three things must be analyzed: needs, environmental, and subject matter analysis. The needs analysis results show that most students have low learning outcomes because the material studied is abstract, so it is difficult to understand, and the lack of interactive digital media in the learning process. Furthermore, the environmental analysis results show that there are facilities that can be used to support the learning process, such as laptops and LCD projectors. The subject matter analysis shows that the material on ethnic diversity needs to be developed in an interesting learning media because it is for elementary school students, so it can be easier to understand.

The second development stage is the design stage. The design stage is carried out in several processes, including selecting and determining the software to be used to make this learning video, including using videoscribe, canva, and flimora software; development of a flowchart to describe the flow of product development as a whole as well as a reference for the next stage; development of a storyboard consisting of a series of sketches depicting a sequence (storyline) and elements proposed for learning videos which include a combination of text, images, videos, animations, and buttons; compiling assessment instruments and test items, as well as compiling a learning implementation plan (RPP) that refers to the syllabus. The third stage is the media development stage, which is carried out by collecting materials and materials such as materials, syllabus, images, text, audio, video, animation, etc. After all the material has been collected, is then followed by making a multimedia framework consisting of an intro, profile, objectives, Basic Competencies, materials, quizzes, and evaluation.

The fourth stage is the implementation stage of media products. At the implementation stage, the activities included: product validation tests by experts, including educational technology experts, social science subject content experts for grade five elementary school, instructional design experts, and learning media experts. Product trials included individual trials of three students and small group trials of nine students. Expert assessment and product trials are carried out to determine the attractiveness, product effectiveness, and feasibility of the learning video products that have been developed. The fifth

Table 1. Subject Content Expert Instruments

<table>
<thead>
<tr>
<th>No</th>
<th>Component</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Development Model Used</td>
<td>a. The suitability of the development model used with the characteristics of the product produced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Appropriateness of the reason for choosing the development model</td>
</tr>
<tr>
<td>2</td>
<td>Development Stages</td>
<td>a. Compatibility of the stages of development carried out with the development model used</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The accuracy of the description of the stages of development</td>
</tr>
<tr>
<td>3</td>
<td>Clarity, Practicality, and Consistency</td>
<td>a. Clarity of development stages based on the development model used</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The level of practicality of the development process implemented</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. The sequence of development steps</td>
</tr>
<tr>
<td>4</td>
<td>Formative and Summative Evaluation</td>
<td>a. The accuracy of the evaluation design according to the model used</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. The clarity of the evaluation instrument that was developed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. The validity and reliability of the evaluation instrument</td>
</tr>
</tbody>
</table>

Table 2. Instructional Design Expert Instruments

<table>
<thead>
<tr>
<th>No</th>
<th>Aspect</th>
<th>Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accuracy</td>
<td>a. Clarity of learning objectives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Consistency of goals and materials, with evaluation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. The material in the video is packaged coherently</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Learning objectives according to the ABCD format</td>
</tr>
<tr>
<td>2</td>
<td>Clarity</td>
<td>a. Submission of material provides logical Steps and free navigation flows</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Learning activities can motivate students</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Give examples in the presentation</td>
</tr>
<tr>
<td>3</td>
<td>Linkage</td>
<td>a. Learning objectives according to the ABCD format</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b. Provision of relevant examples</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Accuracy of presentation</td>
</tr>
</tbody>
</table>

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stage is the evaluation stage. At this stage, the evaluation is carried out from the data collected at the implementation stage. At this stage, an assessment of the learning videos that have been developed is carried out. At each stage in this learning video, evaluations and revisions are made for product improvement and better results. The assessment in this evaluation is formative, namely an assessment carried out throughout the product development process.

The media that has been developed is then tested for validity to measure the extent to which the difference in scores reflects the actual differences between individuals, groups, or situations regarding the characteristics being measured, or measuring the extent of actual errors in individuals, the same group from one situation to another. The results of the research analysis show that the problem-based learning-based learning videos that have been developed have gone through a series of development stages and have been validated by experts who are tested in their fields and have been tried out. In its development, this learning video has been declared effective because it influences student learning outcomes in social science learning. The results of the media product validity test are presented in Table 3.

<table>
<thead>
<tr>
<th>No</th>
<th>Subjects test the validity of learning video media</th>
<th>Validity Results</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Learning Content Expert Test</td>
<td>92.30%</td>
<td>Very good</td>
</tr>
<tr>
<td>2</td>
<td>Learning Design Expert Test</td>
<td>90.00%</td>
<td>Very good</td>
</tr>
<tr>
<td>3</td>
<td>Learning Media Expert Test</td>
<td>96.15%</td>
<td>Very good</td>
</tr>
<tr>
<td>4</td>
<td>Individual Trial</td>
<td>94.23%</td>
<td>Very good</td>
</tr>
<tr>
<td>5</td>
<td>Small Group Trial</td>
<td>92.11%</td>
<td>Very good</td>
</tr>
</tbody>
</table>

Berdasarkan persentase hasil validitas pengembangan video pembelajaran menurut kelima subjek uji coba tersebut, dapat disimpulkan bahwa video pembelajaran layak untuk di uji di kelas penelitian setelah mendapat revisi sesuai dengan acuan.

Discussion

Based on the results of the data analysis that has been carried out, the media developed is of very good qualifications, so it is feasible to be used in the learning process. It can be seen from the results of product validity tests by experts. The discussion regarding the results of the validity test by the experts is as follows: first, the results of the validity test by the learning content experts show that the developed media obtained a score of 92.30% which is in the very good category. These results are obtained because the material presented in the media follows social studies learning needs and the characteristics of elementary school students, where elementary school students tend to like new things related to technological developments (Ponza et al., 2018; Yuliani et al., 2017). PBL-based learning video media is one of the breakthroughs in the student learning process. The learning video media contains images and audio, which can stimulate student curiosity (Andriani et al., 2019; Yendrita & Syafitri, 2019). The second finding relates to the validity test results by learning design experts who obtained a score of 90% and are in the very good category. Obtain these results because the media developed follows the basic competencies, indicators, and learning objectives to be achieved. In addition, the developed media contains various images, symbols, colors, and writing that help students understand the contents of the video better (Aryani & Wahyuni, 2021; Tegeh et al., 2019). Besides being able to increase students’ understanding of the use of appropriate images, colors, and symbols in learning media, it will also be able to increase student interest and motivation to study and pay close attention to videos (Ariani & Ujianti, 2021; Biassari et al., 2021).

The third finding relates to the results of the learning media validity test, which scored 96.15% and is in the very good category. These results are acquired because the media developed has overcome children’s learning difficulties. Learning media is a tool teachers use to clarify learning material (Ariyani & Kristin, 2021; Iskandar et al., 2021). Media use will be able to concretize various abstract concepts in learning materials. Besides, using media will also increase student motivation and enthusiasm for learning, clarify information, and enhance student absorption (Krissandi, 2018; Kumafasani, 2018). The fourth finding shows that the results of individual and small group trials yielded 94.23% and 92.11%, respectively, in the very good category. These results were obtained because the PBL-based learning video media clarified the material the teacher taught (Prawira et al., 2021; Syafii et al., 2020). The application of learning video media will enable students to learn independently. Learning videos can encourage student activity while studying in class, where students build their mindset faster from what they see (Agustini & Ngarti, 2020; Mayar et al., 2022; Yuanta, 2020). In addition, students can also build a critical mindset so that they will have thousands of understandings of what they get from a video. The results obtained in this
study align with previous research results, which also revealed that interactive video media could improve mathematics learning outcomes in the subject of speed in fifth-grade elementary school (Biassari et al., 2021). The results of other studies reveal that problem-based learning and science-based learning videos are valid qualifications, so they are very feasible to develop and teach students (Styowati & Utami, 2022). The results of other studies reveal that problem-based learning video media can significantly improve students’ mathematical thinking skills (Haqiqi & Syarifa, 2021). Based on some research results supported by previous research, problem-based learning video media can significantly improve learning outcomes and students’ thinking abilities.

4. CONCLUSION

Based on the data analysis and discussion results, problem-based learning video media is a very good qualification, so it is very feasible to be developed and studied in fifth-grade elementary school students. It can be seen from the results of product validity tests by experts, individual test results, and small group test results.

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