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Digital Literacy-Based Learning Video on the Topic of Natural Resources and Technology for Grade IV Elementary School

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ABSTRAK

Minimnya ketersediaan media pembelajaran inovatif yang mampu memuat materi secara efektif berdampak pada rendahnya motivasi belajar serta pemahaman siswa terhadap materi. Penelitian ini bertujuan untuk merancang media video pembelajaran berbasis literasi digital pada topik sumber daya alam dan teknologi kelas IV SD yang teruji validitasnya. Penelitian ini berjenis peneltian pengmbangan atau RnD (research and development). Penelitian pengembangan ini menggunakan model ADDIE. Subjek dalam penelitian ini terdiri dari 2 orang ahli materi, 2 orang ahli media, 2 orang praktisi, 6 orang siswa di dua sekolah dasar untuk uji coba perorangan dan 12 orang siswa di dua sekolah dasar untuk uji coba kelompok kecil. Metode pengumpulan data yang digunakan yaitu metode kuesioner dengan penyebaran instrumen rating scale berskala 5. Data hasil penilaian yang telah diperoleh kemudian dianalisis dengan rumus Mean untuk mendapatkan rata-rata skor. Rata-rata skor dari ahli materi yaitu 4,73, ahli media 4,50, praktisi 4,78, uji coba perorangan 4,53 dan uji coba kelompok kecil yaitu 4,61. Sehingga, secara keseluruhan hasil validitas media video pembelajaran berbasis literasi digital berada pada rentangan 4,01 < x < 5,01 degan kualifikasi sangat valid. Berdasarkan analisis tersebut media video pembelajaran berbasis literasi digital pada topik sumber daya alam dan teknologi kelas IV SD layak untuk digunakan dalam proses pembelajaran.

ABSTRACT

The lack of availability of innovative learning media that is able to load material effectively has an impact on the low motivation to learn and students' understanding of the material. This study aims to design a digital literacy-based learning video media on the topic of natural resources and technology for grade IV SD which has been tested for validity. This research is development research or RnD (research and development). This development research uses the ADDIE model. The subjects in this study consisted of 2 material experts, 2 media experts, 2 practitioners, 6 students in two elementary schools for individual trials, and 12 students in two elementary schools for small group trials. The data collection method used is the questionnaire method with the distribution of rating scale instruments on a scale of 5. The data from the assessment results that have been obtained are then analyzed by the Mean formula to obtain the average score. The average score of material experts is 4.73, media experts are 4.50, practitioners are 4.78, individual trials are 4.53 and small group trials are 4.61. So, overall the results of the validity of the digital literacy-based learning video media are in the range of 4.01 < x < 5.01 with very good qualifications. Based on this analysis, digital literacy-based learning video media on the topic of natural resources and technology for fourth-grade elementary school are feasible to be used in the learning process.

1. INTRODUCTION

Media in the implementation of learning is an intermediary or introductory tool to convey messages (Maimunah, 2016; Masturah et al., 2018). Media is a device that can be manipulated, heard, seen, read along with instruments that are used properly in teaching and learning activities, and can affect the effectiveness of instructional programs. Learning media has an important role in supporting the quality of the teaching and learning process (Khoiriyah & Sari, 2018; Paramida & Permadi, 2019). Learning media is a tool in the teaching and learning process to stimulate students' thoughts, feelings,

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attention, and abilities or skills so that they can encourage the learning process (Pramita et al., 2019; Yunita & Wijayanti, 2017). Learning media can increase and direct students' attention so that it can foster learning motivation, more direct interaction between students and their environment, and students learn on their own according to their interests and abilities (Mustaqim & Kurniawan, 2017; Sukmanasa et al., 2020). Some of the benefits of media in the student learning process, namely teaching methods will be more varied not solely based on verbal communication, the meaning of teaching materials will become clearer so that students can understand and enable mastery and achievement of teaching goals, can foster student learning motivation because teaching will attract their attention, students do more activities during learning activities, not only listening but also observing, demonstrating, doing directly, and acting. That way the use of learning media will support the teaching and learning process so that students understand and remember the material presented by the teacher quickly and easily (Hashim et al., 2020; MS et al., 2017). From the statement above, it is concluded that learning media are media that can convey messages or materials in the learning process, learning media can also stimulate thoughts, attention, feelings, and abilities in learning skills so that they can encourage the learning process. Using learning media in the learning process helps to facilitate interaction between educators and students so that learning activities will be more effective and efficient in improving the quality of education (Hartini et al., 2017; Herayanti et al., 2017).

But the facts on the ground show different things, wherein the learning process the use of media as a tool to support the achievement of learning objectives has not been used optimally. One of the causes of the non-optimal use of media is the lack of availability of learning media in schools and the lack of teacher innovation in developing learning media, teachers are still fixated on using books as the main learning source, even though the use of media is also able to support the learning process (Ramadhanti & Yanda, 2018; Toto et al., 2021). Based on the results of interviews and observations with the fourth-grade teacher of SD Cluster I, Susut District for the 2020/2021 academic year, he said that the availability of media in the field was still limited, he also said that the learning resources used were still lacking and only based on books from schools, especially on content. science learning. Teachers are expected to be able to provide instructional video media that apply the principle of leveling and attracting, namely efforts to attract users to start enjoying reading activities and efforts to condition the need for providing reading material that is by the development of students which can strengthen children's reading interest (Sinambela, 2017; Suarga, 2017). If this is ignored, then students' reading interest in learning materials, especially in science content will decrease, so that the learning process will not provide optimal benefits for students.

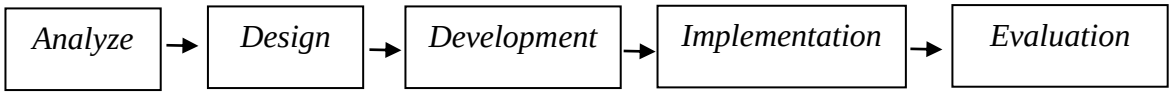
One solution in solving the problems above is to develop learning media that can increase students' reading interest, especially in science learning content. One type of learning media that can increase students' reading interest is learning video media. This solution is supported by several relevant studies, such as research which states that the overall learning outcomes test data (pre-test) obtained a percentage result of 75%, so that based on the specified criteria it can be explained that the video media for learning science subjects about the nature and changes the shape of objects for class IV Merjosari 5 Malang is categorized as quite effective(Kurniawan et al., 2018). Furthermore, research states that the use of instructional video media can significantly improve students' understanding of the topic of Pollution and Environmental Damage (Mutia et al., 2018). Research from states that there is a positive influence on science learning using video media compared to science learning using image media on learning motivation and cognitive learning outcomes in science learning (Pebriani, 2017). Research which states that the higher-order thinking skills of students who are taught using instructional video media are better than students who are taught using powerpoint media (Gowasa et al., 2019). Research that states the use of learning video media has a significant effect on interest in learning science (Pagarra & Idrus, 2018). The study stated that the use of video media in science subjects in grade III SD Inpres Lanraki II had a positive effect on increasing student interest in learning. This is evidenced by the results of observations that have been made to both students and teachers at each meeting which has increased (Pagarra & Idrus, 2018). Research states that science learning videos with the theme of elephant conservation with environmental care characteristics developed are considered interesting by students to be used in learning (Yudiyanto et al., 2020). Research which states that there are significant differences in student learning outcomes between before and after using learning videos (Nanda et al., 2017). Research which states that there is a positive and significant influence between the use of audiovisual video learning media on learning outcomes in sub-theme 1 of my nation's cultural diversity (Novita et al., 2019). Research suggests that learning videos can be used by students to help the learning process from home so that they can easily understand basic science concepts (Jundu et al., 2020). However, in the development that has been done previously, there are still shortcomings in the developed video. The development that will be carried out is

adjusted to current technological developments, namely the development of digital literacy-based learning videos.

In utilizing technology that is poured in the form of learning videos, there are advantages in developing digital literacy-based learning videos, namely (1) the learning process becomes more interesting, this is because students do not only listen through video sound sources but can understand the material by reading. (2) learning videos can show movement. (3) students can observe learning that is broadcast repeatedly so that students get a clearer understanding of the reading results (Atmaji & Maryani, 2018). The digital literacy-based learning video is a video in which the delivery of the material is conveyed as attractively as possible with additional text that will make students more clear in understanding the material. This digital-based learning video media is very suitable to be developed on science content which requires understanding and realizing visualization of material through audio-visual media and one of the topics on science content, especially natural resources and technology (Lestari & Parmiti, 2020; Sayekti & Kinasih, 2018). The process of making learning video media begins with opening a learning video by introducing the material to be discussed, then designing an animation filled with material text, then making it a learning video with a 16:9 ratio using a special video editing application and followed by dubbing through a voice recorder. This digital literacy-based learning video media can be used for topics of natural resources and technology independently due to the situation of the online learning process, but can also be used together in the classroom. The purpose of this development research is to design a digital literacy-based learning video media on the topic of natural resources and technology for class IV SD which has been tested for validity. Theoretically, this research is expected to provide benefits in knowing broad information to develop learning video media. And practically, this research is expected to be able to make it easier to convey the material and can provide a fun learning process solution.

2. METHOD

This research belongs to the type of development research (RnD) in the form of learning media packaged in the form of learning videos. The development research model that will be used is the ADDIE development model. The design of this research can be seen in figure 1. This model was chosen because the stages of development are clear, systematic, and based on the theoretical foundation of learning design (N.M.S & I.G.A.L.P, 2020). The implementation and evaluation stages of this research were not carried out considering the world situation which was being hit by the Covid-19 pandemic. This research was conducted in SD Cluster I, Susut District. The data collection method used is the questionnaire method with the distribution of a rating scale instrument on a scale of 5. The test subjects in this study consisted of 2 material experts, 2 media experts, 2 practitioners, 6 students in two elementary schools for individual trials. and 12 students in two elementary schools for the small group trial. The data obtained from the assessment results were then analyzed using the Mean formula to obtain the average score. Broadly speaking, the design of the media trial in this study can be seen in figure 2.



Modified from (Agung, 2014)

Figure 1. Research design

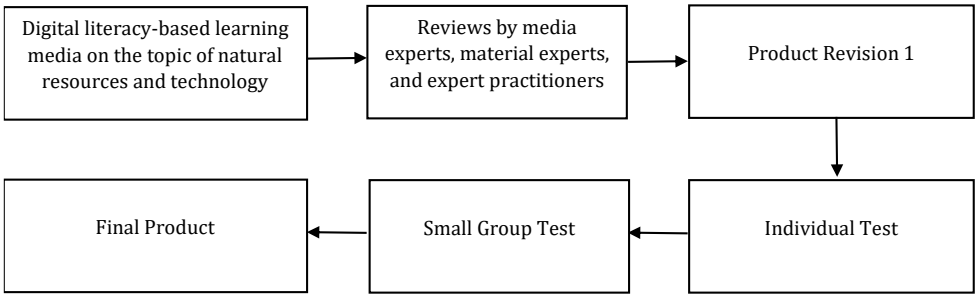


Figure 2. Trial design

This **Analyze** stage consists of several stages, namely; (1) The needs analysis stage is carried out in order to find out what is needed by teachers, schools, and students during a pandemic situation in the learning process. This stage is carried out by distributing questionnaires in SD Cluster I, Susut District; (2) The curriculum analysis stage is carried out by analyzing the syllabus, in order to find out the basic competencies, indicators, and learning materials so that they can be developed into learning media; (3) The characteristic analysis stage is carried out to determine the characteristics of fourth-grade elementary school students in using instructional video media during the learning process; (4) The media analysis stage is carried out with the aim of knowing the characteristics of good learning video media and suitable for use in the learning process. The **design** stage, starting with determining the topic of the material which is then developed into the learning video media, then making the design of the learning video media and discussing it with the supervisor in order to get suggestions and input in the design stage. This **development** stage is an activity of translating design specifications into physical form so that this activity produces a prototype of a development product. So the thing to do at this stage is to discuss the learning video media with the supervisor. Then after the learning video media has been created and received input from the supervisor, the next thing is an expert test to carry out a review of the media that has been developed. This expert test is carried out by media experts, material experts, and expert practitioners. Then the product will receive input from several experts, then revision will be carried out so that it can be seen how valid the digital literacy-based learning video media is made.

The subjects in this development research consist of experts and practitioners with details of 2 lecturers with a minimum specification of undergraduate (S1) Elementary School Teacher Education at Ganesha Education University as material experts, 2 lecturers with minimum qualifications of bachelor (S1) Elementary School Teacher Education at the Ganesha University of Education as media experts, 2 practitioners who were asked to review the design of instructional media, 6 students in two elementary schools for individual trials and 12 students in two elementary schools for small group trials. The data collection instrument used in this research is the Rating Scale. The rating scale is an assessment based on a certain scale from low to high. The rating scale is raw data in the form of numbers which are then interpreted in a descriptive sense, for example tight – loose, often done – never done, weak – strong, positive-negative, bad – good, active-passive, big – small. The grid validity of the instrument and the validity of the media can be seen in table 1, 2, 3 and 4.

Table 1. Grid of Materials Expert Literacy-Based Learning Media Validation Sheets

No	Aspect	Indicator	Item Number
1	Material	1. Basic Competencies and Indicators in learning video media	1
		2. Learning objectives are following KD	2
		3. Submission of learning objectives in learning video media	3
		4. The material is following the learning objectives	4
		5. The material must be following a definite source	5
		6. The level of difficulty of the material is adjusted to the cognitive development of students	6
		7. The material is following the characteristics of students	7
2	Presentation	8. Clarity in the presentation of the material	8
		9. Illustration of learning video media to clarify the material	9
		10. Submission of material can increase reading interest	10
		11. The appearance of learning video media attracts interest in learning	11
3	Language	12. Use of good and correct language	12
		13. The sentences used are easy to understand and understand	13
		14. Selection of sentences to be delivered	14
		15. Language level according to student's cognitive	15
		Total	15

Table 2. Grid of Media Validation Instruments for Digital Literacy-Based Learning Media Experts

No	Aspect	Indicator	Item Number
1	Visual	1. Font selection	1
		2. Balance between images and text	2
		3. The content of the video contains a message	3
		4. Interesting animation/picture	4
		5. Design interesting learning videos	5
		6. Selection of images, animations, and colors	6
2	Voice and text	7. Component video amplified by component audio	7
		8. Text can be read well	8
		9. The intonation of the voice is clear	9
		10. Appropriate font size	10
3	Presentation	11. Make it easier for students to understand the material	11
		12. Compatibility with sound effects	12
		13. Video according to learning objectives	13
		14. The degree of possibility of encouraging students to read	14
		15. The subject matter of each section is clear	15
		Total	**15**

Modified from Astiwi et al. (2020)

Table 3. Grid of Practitioner Validation Instrument

No	Aspect	Indicator	Item Number
1	Material	1. Basic Competencies and Indicators in learning video media	1
		2. Learning objectives are following KD	2
		3. Submission of learning objectives in learning video media	3
		4. The material is following the learning objectives	4
		5. The material must be following a definite source	5
2	Language	6. The level of difficulty of the material is adjusted to the cognitive development of students	6
		7. Use of good and correct language	7
		8. The sentences used must be easy to understand and understand	8
		9. Selection of sentences to be delivered	9
		10. Language level according to student's cognitive	10
3	Visual	11. Font selection	11
		12. Balance between images and text	12
		13. The content of the video contains a message	13
		14. Interesting animation/picture	14
		15. Design interesting learning videos	15
		16. Selection of images, animations, and colors	16
4	Voice and text	17. The video component is amplified by the audio component	17
		18. Text can be read well	18
		19. The intonation of the voice is clear	19
		20. Appropriate font size	20
5	Presentation	21. Make it easier for students to understand the material	21
		22. Compatibility with sound effects	22
		23. Material according to student characteristics	23
		24. Clarity in presenting material	24
		25. Illustration of learning video media to clarify the material	25
		26. Submission of material can increase reading interest	26

No	Aspect	Indicator	Item Number
		27. The appearance of learning video media can attract learning interest	27
		28. The videos presented are following the learning objectives	28
		29. The degree of likelihood of encouraging students to read	29
		30. The subject matter of each section is clear	30
		Total	30

Table 4. Digital Literacy-Based Learning Video Media Validation Sheet Grid Individual and Small Group Test

No.	Aspect	Indicator	Item Number
1	Presentation	1. Videos can increase students' interest in learning	1
		2. Clarity of the image in the video	2
		3. Color selection in the video	3
		4. Videos can increase students' reading interest	4
		5. The subject matter presented is clear	5
		6. Make it easier for students to understand the material	6
2	Voice and text	7. The sound in the video is clear	7
		8. The use of the typeface in the video is clear	8
		9. The legibility of the letters used	9
3	Language	10. The sentences used are easy to understand	10
		11. The language used is easy to understand	11
4	Material	12. Video presentation following the material being taught	12
		13. The material presented is following the learning objectives	13
5	Visual	14. The display in the video can attracts students	14
		15. Animated display can attract students' attention	15
		Total	15

Modified from Astiwi et al. (2020)

Analysis of the data used in this study was carried out with qualitative descriptive statistical analysis techniques and quantitative descriptive statistical analysis. The type of data that is processed using this qualitative method is in the form of suggestions and input from experts. These results are then used as a guide in improving the media that has been developed. Quantitative descriptive analysis aims to analyze the scores obtained through the provision of learning video media assessment sheets to experts. Then the scores that have been obtained are calculated on average to determine the validity of the learning video media using the mean formula. A learning media has valid criteria if the validity of the learning media is in the Good or Very Good category.

3. RESULT AND DISCUSSION

Result

The results of this development research resulted in a digital literacy-based learning video media on the topic of natural resources and technology for class IV SD which has been tested for validity. This was obtained through a test of the validity of digital literacy-based learning video media on the topic of natural resources and technology for grade IV SD conducted by two material expert lecturers, two media expert lecturers, two practitioners who are experts in their fields and involving 18 students who divided into 6 individual students and 12 students in small groups. The product validity test was carried out to determine the level of validity of the digital literacy-based learning video media on the topic of natural resources and technology for the fourth-grade elementary school that had been developed. The product validity test carried out was an expert test through the review stage of two material expert lecturers, two media expert lecturers, two practitioners who were experts in their fields, and involved 18 students divided into 6 individual students and 12 students in small groups.

Analyze stage, at this stage carried out several analyzes, namely needs analysis, the results of this analysis include the availability of material on student learning resources, the availability of learning media in schools, the types of media that are often used, the importance of developing learning video media, curriculum analysis, analysis results this will be a benchmark or guideline in formulating KD and indicators that will be poured into the developed learning video media (Herayanti et al., 2017). For KD and indicators that have been successfully analyzed can be seen in Table 5. Analysis of student characteristics, in this analysis it was found that students in grade IV SD were in the concrete operational stage, so students tended to more easily understand the material when given assistance in the form of pictures or other media. Media analysis, this analysis produces aspects that will be used in the development of learning media, which consist of material aspects, linguistic aspects, visual aspects, sound and text aspects, and presentation aspects.

Table 5. KD Analysis Results and Indicators

No	Basic Competence (KD)	Indicator
1.	3.7 Describe the relationship between natural resources and the environment, technology and society.	3.7.1 Classify various types of natural resources. 3.7.2 Explain the factors that can cause environmental damage. 3.7.3 Explain the results of processing from natural resources.

Modified from Pratama et al. (2020)

In the design stage, the result of the stages is the design of making learning video media on the topic of natural resources and technology. This stage begins with determining the KD and indicators that will be applied to the learning video media, then proceeds with looking for learning materials, namely the topic of natural resources and technology. The next activity is to determine the background that will be used, followed by designing the layout of writing and learning media images on the Canva application. After that, it was continued by preparing animation and dubbing using the Zepeto application. The final activity at the design stage is to combine them using the Kinemaster application. After the media design stage has been successfully compiled, then the media creation process is carried out which can be seen in Figure 3.

Figure 2. Media Creation Process

The development stage, at this stage, has succeeded in developing learning media that have passed the assessment process from experts, practitioners, and students (Hartini et al., 2018). The learning media that has been successfully developed is a digital literacy-based learning video media on the topic of natural resources and technology for the fourth grade of elementary school. Some of the inputs received from experts and practitioners in the media development process include adjusting indicators with learning objectives, being consistent in choosing fonts and colors, adding animations to images and colors. After undergoing revisions, the pictures of the learning media that have been successfully developed in the final can be seen in Figure 4. Based on the results of the calculation of the average validity test score, the average score in terms of material experts as a whole is 4.73 with very good qualifications. The average score in terms of media experts obtained an average score of 4.50 with very good qualifications. The results of the calculation of the average score in terms of practitioners state that digital literacy-based learning video media are in very good qualifications with an overall average score of 4.78. The overall average of individual trial results reached a score of 4.58 with very good qualifications.

And based on the results of the small group trial, the overall average score was 4.61 so that the digital literacy-based learning video media was in very good qualification.

Figure 4. Successfully Developed Media

Discussion

The digital literacy learning video media on the topic of natural resources and technology for the fourth-grade elementary school developed in this study is included in the very good category. This learning video media was developed to provide facilities for students and teachers in the current pandemic situation so that the material presented can be well received by students. The use of learning media can facilitate the material to be delivered and experience an increase in learning outcomes for students, the following are the functions of using media in the process of learning activities: learning motivation can grow well because the learning model is attractive to students, the clarity of the content of the material presented will be better, thereby facilitating better understanding and mastery of subject matter for students, learning methods are more varied with the condition of students not focusing on explaining the material for educators so that student's interest in learning increases and reduces the level of fatigue of educators in the hours of subjects taught. For a long time, the activities caused by this more active learning model can find out the student's hearing system, observation, and demonstration of the material that has been delivered so that research can succeed in improving student learning outcomes (Maimunah, 2016; Rahmawati & Anggraini, 2017). Digital literacy-based learning video media on the topic of natural resources and technology were developed based on the ADDIE model. The stages of this ADDIE model are Analyze (analysis), Design (design), Development (development), Implementation (implementation), and evaluation (evaluation), but the Implementation and Evaluation stages are not carried out due to the situation and conditions and limited time and resources. power.

In the first stage in this research, the analysis stage is carried out by carrying out a needs analysis, curriculum analysis, characteristic analysis, and media analysis (Masturah et al., 2018; Suastra et al., 2017). So based on the results of the analysis carried out, it is very necessary to use learning video media to support the learning process, this is in accordance with Dale's cove of experience theory. The theory describes the level of student understanding in a cone of experience. In Edgar Dale's cone of experience, video is in the middle because it belongs to the "Television" category. This position means that video media is better than image media and audio media (Ikhsan & Hadi, 2018; Wati & Widiansyah, 2020). The second stage is the design stage. This design stage is carried out by the media design process, the first thing is to determine the topic of the material to be used and then developed it into learning video media (Mutia et al., 2018; Sentarik & Kusmariyatni, 2020). Learning video media is made through the Kinemaster application. The developed media is also assisted by the Pinterest and Zepeto applications. The Pinterest app is used to get a clear background and the Zepeto app is used to create motion animations. And the Canva application is used to adjust the layout of the writing background to make it look attractive. Then at the end of the video, there are also practice questions to find out how much students understand the material explained. The third stage is development, this stage is carried out by developing learning media (Mayub et al., 2020; Toto et al., 2021). The media development was in accordance with the design made, then after the learning media was finished, the media was immediately rated by 4 lecturers, 2 teachers, and 18 students by providing a media assessment sheet. This research produces a product in the form of digital literacy-based learning video media on the topic of natural resources and technology for fourth-grade elementary school. Digital literacy-based learning video media is an audio-visual media that is good for use as an intermediary in delivering messages and digital literacy-based video media is very helpful for students in increasing students' reading interest and can attract students' attention in learning. The advantages of digital-based learning video media developed this time are (1) the learning process becomes more interesting, this is because students do not only listen through video sound sources but can understand the material by reading. (2) learning videos can show movement. (3) students can observe

learning that is broadcast repeatedly so that students get a clearer understanding of the reading results. In addition, using digital literacy-based video learning media can help students who have different characters because this media is a combination of visual media, text, animation, audio, and images. So that with this media students can learn optimally assisted by pictures, music, animation, and text.

The digital literacy-based learning video media was declared feasible with responses from material experts obtaining an average score of 4.73 with very good qualifications. The average score of media experts is 4.50 with very good qualifications. Then the two practitioners' responses also gave an average score of 4.78 with very good qualifications. This digital literacy-based learning video media also received responses from students, namely in individual trials the average score of six people in two elementary schools was 4.53 with very good qualifications. And in the small group trial with twelve students in two elementary schools, the average was 4.61 with very good qualifications. So that based on the qualifications obtained, the video media developed has valid qualifications and is feasible to be used as learning media. These results are in line with research conducted (Anwar et al., 2016; Narut & Supradi, 2019) which states that there is a positive influence on science learning that uses video media compared to science learning that uses image media on learning motivation and cognitive learning outcomes. science. Likewise, research from (Gowasa et al., 2019; Rahmawati et al., 2018) states that students' higher-order thinking skills taught by video learning media are better than students taught by powerpoint media. . So that the overall validity of the digital literacy-based learning video media is very well qualified and worthy to be used in the learning process.

The implication of this research is to produce a product in the form of a digital literacy-based learning video media on the topic of natural resources and technology for the fourth grade of elementary school with very good qualifications. This learning video media can be used in the learning process on science content. With the availability of this learning video media, it can help teachers meet all the different characteristics of elementary school students, because theoretically, fourth-grade elementary school students are at the concrete operational stage, where students are not yet able to think abstractly, so concrete objects are needed to help. understand the material. This video media can facilitate students in carrying out the learning process and can motivate students to be enthusiastic about learning and students are interested in reading so that all learning objectives can be achieved optimally. Based on the research carried out, the suggestions that can be submitted for further researchers are that this research can be used as a reference in developing similar video media but on different topics and other researchers and as a reference in conducting similar development research.

4. CONCLUSION

The developed media is feasible to use with a very good validity category. So that the digital literacy-based learning video media on the topic of natural resources and technology deserves to be used as a reference in overcoming the problem of the lack of innovative media which has an impact on the low interest in learning and student literacy when participating in the learning process.

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