Development of MeJiKuHiBiNiUn Creative Learning Video Media In Mathematics Subject In Grade V Elementary School

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Abstrac

The digital era is a time when technological developments occur in all parts of the world. As a society that lives in this digital era, we should fallow the current technological developments that we feel. Utilizing technology to solve the problems in the world of education is a wise action. One of the uses of technology in education is to use creative learning video media based on computer technology using the powtoon aplication. The purpose of this research is to develop creative learning video media. The method used is the research and development method in class V SD Negeri 84 Kendari, using the DDD- E method. The data analysis technique used the analysis technique of validation result and the analysis technique of the questionnaire responses of teachers and students. It can be concluded that this creative learning video media MeJiKuHiBiNiUn feasible to be use in the learning process in the fifth grade of elementary school.

Keywords : Creative learning video, powtoon, development

A. Introduction

The use of advances in the field of information technology poses a challenge to the world of education, especially in the teaching and learning process. In the National Education System Law No. 20 of 2003, it is stated that it is not the time to rely on a conventional approach in

implementing the national education system. The information technology revolution has changed the way humans work, starting from the way of communication, the way of producing, the way of coordination, the way of thinking, to the way of learning and teaching. From this technological revolution, educational technology was created.

Mathematics is indispensable in everyday life, not only in the process of buying and selling in the market but more in building a way of thinking. Mathematics is one of the important sciences to be studied by every student as the purpose of mathematics is to make humans think logically, theoretically, rationally, and confidently so that it is a means to solve problems in everyday life so that they can compete from all the demands of the globalization era. technologically advanced now and in the future. This statement is also by the results of research from (Supriadi, 2015) in his research connection with the title of developing mathematical connection abilities.

Ruseffendi (2016) states that mathematics is shaped as a result of human thinking related to ideas processes, and reasoning. So, mathematics is not a science that is memorized, but with the understanding that students have, it is expected to be able to understand the concept of the subject matter. Mathematics for some humans is a difficult subject, so many people do not like mathematics.

Mathematics learning in general is still dominated by teachers, which in research (Utami et al., 2018) found that in the learning process in mathematics subjects, students are more passive because of the reason that mathematics is very difficult learning to understand, so the activeness and the independence of students is reduced. In addition, the teacher factor as well as learning media of special concern because the use of learning media in schools is still less than optimal, Wahyunuhari (2013) in his research on sports and health physical education lessons, sees that the lack of media prepared by both the school and the subject teachers themselves, which is where this hampers the learning process, besides depending on the method used it also depends on the learning device used.

One of the problems of education in Indonesia is the low quality of learning, especially in the teaching and learning process. Along with educational problems, the management of learning aids in the form of media is needed to help the teaching and learning process. A research result from the Education Encyclopedia says that learning media provides value/benefits, among others: reducing verbalism, attracting students' attention and interest, encouraging students to ask questions, and the material being studied by students can be more settled and not easily forgotten. In addition, fostering self-employment activities for students because they get real experience in learning, is also one of the reasons for the need to apply learning media in the learning process in the classroom. The use of media in the learning process can also lead to an orderly and running mind and can help the growth of understanding and development of language skills (Usman, 2017). Learning media is a container of messages, while the material to be conveyed is a learning message and the goal to be achieved is the learning process. Creative use of media will increase the possibility for students to learn more, keep in mind what is learned better, and improve performance in performing skills according to the learning objectives.

The learning objectives will run if students can understand the material presented by the teacher, which in this case the learning media is the key to understanding students. Based on the results of research from Development and Research conducted in class X Multimedia SMK Negeri 2 Wonosari. The research resulted in a computer-based Interactive Learning Media product for Graphic Design Basic Lessons using Adobe Flash Professional CS6 Software. The product is packaged in the form of software that is given to students that can be used to study in the classroom or study independently with the help of computer devices. From field research using media, the researcher found that the media he did was feasible to use because students could learn independently. Another study by Oviani (2019) regarding the use of image media in improving elementary school science learning outcomes, in this study stated that the media used were valid because in the comparison of learning without using media, students' interest in learning was low which triggered low learning outcomes, but with the existence of learning media learning outcomes of students to be increased.

In Law No. 20 of 2003, Article 1 paragraph 20, explains that learning media is one of the components that support success in the teaching and learning process. Magdalena et al. (2021) in research on the importance of learning media to increase students' interest in learning, this study is valid because the responses of students in learning are more active and understood because of the help of learning media

Based on the above facts regarding the importance of learning media in the teaching and learning process where the teacher himself should be able to be as creative as possible in the learning process, so that it can have a positive impact on students. The positive impact lies not only in the activeness of students, but how the message from learning can be understood by students.

The function of learning media about the teaching and learning process is as a teacher's tool in delivering learning materials to create an effective learning situation to improve the quality of the teaching and learning process and the interests of students which have an impact on improving learning outcomes and ease of understanding learning materials. Sanjaya (2006) suggests that in particular learning media have functions and roles, namely a) capturing an object or certain events, b) manipulating certain circumstances, events, or objects, and c) increasing passion and motivation to learn. Learning media is useful for clarifying learning information conveyed by teachers to students so that they are not too verbal so that the learning process is more effective and efficient. Learning media also facilitates the interaction of teachers with students wherever and whenever, able to overcome the limitations of space, time, calm and sensory power of teachers and students (Sudiarta & Widana, 2019).

In producing learning media in the form of creative learning videos, where quality learning videos are by the competencies or goals to be achieved. The development of instructional video media requires a series of creative abilities, both creative thinking skills and creative attitudes. The knowledge that must be mastered in developing creative learning video media is knowing about the learning video media itself, knowledge about design and knowledge of the technical implementation of production and evaluation. Therefore, it is necessary to develop and empower creativity in the development of learning videos, which ultimately can produce quality learning videos that are technically and by the needs of students.

Sudrajat (2010) explained that animated video media is a combination of other media elements such as audio, text, video, images, graphics and sound so that it can accommodate the learning styles of students who may have visual, auditory, or kinesthetic types. This animated video is used as a learning medium and will prevent students from feeling bored and tired due to the teacher's explanations that are difficult to digest and understand. To avoid all that, the teacher can develop a learning strategy by utilizing animated video media as a learning aid.

Based on the statement above, shows that in learning a suitable animated video learning media is needed, teachers are required to use various learning media so that the teaching and learning process can run smoothly. One of the animated video applications that are known in the world of education and is often used as a learning medium is the powtoon application.

Powtoon is an online web application that can be used to create presentations with very attractive animation features, such as handwritten animation, animated cartoons, and clear transition effects with very simple timeline settings. The powtoon application first appeared in 2012 and has been growing since 2013 until now. The advantages of this powtoon application are interactive, covers all aspects of the senses, collaborative, can be used in large groups, can be varied, provide make lumbar functions, and motivate users. The drawback of this application is that it relies on an internet connection, and requires basic skills to use it.

From several studies, it is stated that the Powtoon application is declared valid/feasible to be used as a learning medium because it fulfills four aspects of learning, namely aspects of design, pedagogic aspects, content aspects, and convenience which can improve student learning achievement (Julianingrum et al., 2015; Mahendra, 2015; Wisnarni et al., 2016). The use of learning media using the Powtoon application is based on previous research by Asyifa (2018) who in her research said that learning videos made using the Powtoon application were suitable for use in improving students' understanding of mathematical concepts.

From some of the studies above, because they are considered suitable for use in the learning process, researchers are motivated to develop creative learning video media using the Powtoon application in mathematics subjects in recognizing units of length with the title MeJiKuHiBiNiUn creative learning video media development in mathematics subjects in class V elementary school.

B. Methodology

This research is research that uses research and development or what is commonly referred to as research and development (R&D). This research uses the DDD-E model. The choice of the DDD-E model has based on the reason that this model fits the research conducted, namely creative learning videos, and also because this model is easy to understand. The stages of the DDD-E development model include Decide, Design, Develop and Evaluate (Tegeh et al., 2014). The product in this research is a creative learning video of MeJiKuHiBiNiUn in mathematics subjects in fifth-grade elementary school in length unit subjects using the powtoon application. This research was conducted in September - December 2021 at SD Negeri 84 Kendari, the samples taken can be used as subjects by researchers are students of class V SD Negeri 84 Kendari with a total of 35 students.

This study uses expert reviews or validators and questionnaire responses from teachers and students, to revise and improve the learning videos. Validators consist of design experts, media experts, and materials experts. In this study, there is a preparation procedure carried out by researchers for development activities, namely Decide, Design, Develop and Evaluate. The data analysis technique used in this research is quantitative descriptive analysis and qualitative descriptive analysis. The qualitative descriptive analysis technique is used to manage data from the results of expert trials and student trials conducted by grouping information obtained from qualitative data in the form of interviews, comments, responses, and suggestions for improvement from experts. The results of this data analysis will be used to revise the developed product. While in the form of numbers or percentages to get general conclusions, it is obtained through questionnaires from experts and students' responses to creative learning media.

The results of the validation percentage from the experts and the teacher and student responses can be grouped in the score interpretation criteria according to the Likert scale so that conclusions will be obtained about the feasibility of the media, the score interpretation criteria based on the Likert scale as follows:

Table 1 Assessment Criteria according to the Likert Skala Scale

Rating	Interpretation Criteria
80 % - 100%	Very Clear (VC)
60% - 80%	Clear (C)
40% - 60%	Quite Clear (QC)
20% - 40%	Unclear (Un)
0% - 20%	Very Unclear (V Un)

With the categories provided by the researcher based on a Likert scale consisting of 5 rating scales as follows:

Table 2. Rating Scale

Answer options	Score
Very Clear	5
Clear	4
Quite Clear	3
Unclear	2
Very unclear	1

The results of the teacher and student response questionnaires were analyzed using the following formula:

$$p = \frac{f}{n} \; x \; 100\%$$

Information :
P = percentage of questionnaire data
f = total score obtained
n = number of maximum scores

C. Results and Discussion

Interactive multimedia in mathematics lessons was developed using the DDD-E development model which consists of four stages, namely the first stage is Decide, at this stage the learning objectives are set by conducting interviews with the fifth-grade homeroom teacher at SD Negeri 84 Kendari regarding the use of creative learning media, With this, the researcher determines the theme of the scope of the material to be discussed in multimedia, development of prerequisite skills and assesses resources. The second stage is Design, at this stage what is done is making content outlines, flowchards, designing initial views, storyboards to facilitate the development of interactive multimedia products. The application that will be used in this creative learning is the powtoon application. The third stage is Develop, where at this stage the products that have been designed and designed will be developed into real products based on the flowchards and storyboards that have been made. What is done at this stage is to aggregate all the products that have been made using the powtoon application so that they become creative learning media. At this stage the products that have been made will be assessed by experts, namely design experts, media experts, and material experts and questionnaires for teacher and student responses. The last stage is evaluation, where at this stage the evaluation is not only carried out on the final product, but the evaluation is also carried out starting from the decide, design and develop stages. Evaluation of the products developed will be carried out by the suggestions and input from design experts, media experts, and material experts. By evaluating at each stage, it can minimize the error rate of the product being developed.

The development of the MeJiKuHiBiNiUn creative learning video that has gone through validation tests by design experts, material experts, media experts and teacher and student response questionnaires, is seen in table 3.

Table 3. Product Validation Test Results

No	Creative Learning Video Trial Subject	Results Validity (%)	Information
1	Design expert test	95,55 %	Very Clear
2	Media expert test	93,33 %	Very Clear
3	Material expert test	100 %	Very Clear
4	Teacher response	100 %	Very Clear
5	Students response	93,2	Very Clear

Based on the results of the assessment carried out by media design experts, the developed media reached 95.55% so it got very clear qualifications. The results of the assessment carried out by media experts reached 93.33% with very clear qualifications. The results of the assessment carried out by material experts reached 100% with very clear qualifications. The teacher's response to the MeJiKuHiBiNiUn creative learning media reached 100% with very clear qualifications and the response from students, it reached 93.2% with very clear qualifications. Some suggestions and comments from experts and questionnaire responses from teachers, where suggestions, comments and input are then used as suggestions for making improvements or revisions so that the creative learning media products developed are better. The results of developing this creative learning video are shown in the image below:

Based on the validation test of the feasibility of creative learning videos by experts and questionnaire responses by teachers and students, the overall qualifications are very clear, so that they are feasible to be applied in the learning process. One of the causes of very good qualifications is because in the design of interactive multimedia development using the DDD-E model because every step in the DDD-E model is very systematic and it is always possible to carry out evaluations to make the quality of the media produced will be better (Nendasariruna et al., 2018; Setianinggrum, 2020). Creative learning videos using the powtoon application are feasible to be applied in the learning process due to several factors, namely because the powtoon application is a learning guide for students independently, MeJiKuHiBiNiUn creative learning video media in mathematics subjects with unit length material makes learning more fun, not monotonous and makes it easier for students to calculate units of length, which students can also apply this in life. In everyday life, this media uses interesting animations, and illustrations that can make it easier for students to understand the material.

As a learning guide for students independently, MeJiKuHiBiNiUn creative learning video media in mathematics subjects with unit length material makes learning more fun, not monotonous and makes it easier for students to calculate units of length, which students can also apply in everyday life as well as media. It uses interesting animations, and illustrations that can make it easier for students to understand the material. This is based on previous findings by (Julianingrum et al., 2015; Mahendra, 2015; Wisnarni et al., 2016), their research results revealed that the Powtoon application was declared feasible to be used as a learning media because it fulfilled four aspects, namely, design aspects, pedagogic aspects, content aspects, and convenience aspects in this case, namely the convenience for students. students to understand the subject matter. And research from Asyifa (2018) which in the study stated that learning videos made using the Powtoon application were suitable for use in improving students' mathematical understanding.

Based on the existing findings, it illustrates that the powtoon application presents a fun learning atmosphere. This research does something different from previous research, namely by making a color combination strategy and making acronyms so that it can help students learn to recognize units of length and the results of its application have a positive impact on student learning outcomes.

D. Conclusion

MeJiKuHiBiNiUn's creative learning videos get very clear qualifications. So this creative learning video can be used in the learning process. It is recommended for teachers to use this MeJiKuHiBiNiUn creative learning video that can help students learn mathematics, especially in unit - length material.

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