

# Development of SPEDAHERU Learning Media based on Sparkol Videoscribe in Science Subject Class V Elementary School

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**Abstract**— The lack of availability of learning media makes it difficult for students to understand the material on the digestive system of food in ruminants in science subjects. This study aims to develop SPEDAHERU learning media based on Sparkol Videoscribe. This research method uses research and development (R&D) with the ADDIE model. The research steps include: analysis, design, development, implementation, and evaluation. The data collection technique used in this study used descriptive analysis techniques for observation and interview data by calculating the percentage of results from validation, effectiveness, and practicality in the form of numbers using statistical analysis. The results of the validation of media experts obtained an average of 86.25% in the very feasible category, and material experts received an average of 85% in the very feasible category. The results of the practicality of the media obtained 85% by practitioners in the very practical category and 91.25% by student responses in the very practical category. The data related to the effectiveness seen from the pretest and posttest obtained a score of 60% before and 82.5% after using learning media. Based on these data, there was a significant increase in pre-test and post-test. From the results of the research conducted, it can be concluded that the learning media in SPEDAHERU based on sparkol videoscribe in the fifth grade science subject of elementary school is declared suitable for use as a science learning medium. The learning media using sparkol videoscribe-based SPEDAHERU for the fifth grade science subject at SDN Manggis 2 succeeded in increasing students' interest and understanding.

**Keywords**— Sparkol Videoscribe; Science; SPEDAHERU; Learning Media

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## I. INTRODUCTION

Education is a planned effort to create a quality learning atmosphere and learning process so that students can develop their potential to have a good, creative, intelligent personality and the skills they need that are appropriate in society, nation and state. Education will form capable, creative, independent, and responsible human beings [1,2]. The educational process in educational units is held interactively, inspiring, fun, challenging, and motivating encouraging students to participate actively, creatively and independently [3].

Natural Sciences is concerned with systematically finding out about nature based on the results of experiments and observations made by humans. Science is a collection of sciences that have special characteristics, namely studying factual natural phenomena, physical in the form of reality or events, and causal relationships [4]. Science can also be interpreted as a branch of science about nature, such as animals, the environment, plants, and other objects that can be found in the surrounding environment or actual natural conditions [5,6]. In learning science, students are expected to be able to explore themselves and nature, both from their own experiences and those of others.

The era of the development of science and technology is currently having a considerable impact on life, especially in the field of education. Technological advances can be used to improve the welfare of the nation and state, as well as educate its citizens [7,8]. The rapid development of science and technology demands quality in education to improve human resources [9,10]. A superior and quality human resources can be achieved by creating an effective learning process. Effective learning is learning that can make it easier for students to learn something useful, such as facts, skills, values, concepts, and how to live in harmony with others or a desired learning outcome [11].

In fact, at this time, learning has not been effective. This can be proven by the number of students who have not passed the minimum completion criteria because teachers have not been able to create an interesting and fun learning atmosphere for students. Teachers tend to only give assignments and rely on textbooks in learning, so that students are less able to understand. Learning that only uses the assignment method and is teacher-centered makes students passive in learning [12,13]. Thus, to overcome this, we need a learning media that is able to increase the attractiveness of learning for students.

Media can be interpreted as a means of distributing or disseminating important information and messages during the learning process, especially at the elementary school level [14,15,16]. Media can also be interpreted as an intermediary between teachers and students. Teachers can use learning media to deliver material addressed to students [17,18]. Teachers must also use the media

to increase the motivation of students' learning activities [19,20,21]. One of the media that can make it easier for students to learn is SPEDAHERU (Digestive System in Ruminant Animals), based on Sparkol Videoscribe.

Sparkol Videoscribe is software that is used to create whiteboard-like animated videos. Sparkol videoscribe can also be interpreted as an animated video learning medium which consists of several series of images arranged into a complete video [22]. Videoscribe can be an attraction for students in the learning process [23,24]. An educator can innovate by making video scribes to describe and explain complex concepts in a learning process [25,26]. As for the advantages of Sparkol Videoscribe, the advantages of this media are that the use of words and images is presented simultaneously, so that students will be more interested in learning because there are animations, sounds, and the media presented is very simple. Media in the form of video-based videos can help students who have difficulties [27,28].

Based on the description of the previous sparkol videoscribe research entitled Improving Students' Understanding of Energy Sources through Sparkol Videoscribe-Based Learning Media. In this study, based on the results of the data analysis of the assessment results provided by material, media, and product testing experts, it was found that the developed media were of very good quality [29]. Based on needs analysis and analysis of previous research, researchers are interested in conducting research with the title "Development of Sparkol Videoscribe-based SPEDAHERU learning media in science subjects for class V Elementary School."

## **II. RESEARCH METHOD**

This study uses the research and development (R&D) method or research development in this study, which is used is ADDIE (Analysis, Design, Development, Implementation, and Evaluation). The method of collecting data collected in this study is in the form of descriptive data for analysis of observation and interview data as well as input suggestions based on a questionnaire given by practitioners, while the score validation results and student learning outcomes by pre-test and post-test will be analyzed using quantitative data. The subjects in this study were 7 grade students for the limited trial and 28 students for the extensive trial conducted at SDN Manggis 2. Media experts relate to language, display, audio, quality. Instruments for material experts that contain the structure of the material, the accuracy of the material, the suitability of the content, and the use of the language used for the second data collection, pretest and posttest were used to measure students' interest in learning before and after receiving the material on the digestive system of food in ruminant animals in science subjects.

A. Calculate the percentage of each sub variable using the following formula:

$$NP = \frac{S}{SR} \times 100\%$$

Information :

NP = Result value

S = Value obtained

SR = Maximum value

The research criteria in learning media can be seen in the following table.

#### B. Assessment Criteria Table

Table 1. Assessment criteria table [30]

No.	Interval	Eligibility Criteria
1.	80% - 100%	Very Eligible/Very Good/Strongly Agree
2.	66% - 79%	Eligible/Good/Agree
3.	56% - 65%	Less Eligible/Not Good/Not Agree
4.	0% - 55%	Inappropriate/Not Good/Disagree

### III. RESULT AND DISCUSSION

Based on the results of observations, we obtained data that there are learning problems in class V, namely in science subjects the material for the digestive system of food in ruminant Animals still has many shortcomings. It just makes students less interested in the material, causing poor learning outcomes and also many who do not pass the minimum completeness criteria. To overcome this, it is necessary to have a media. Based on the results of observations and interviews, one type of media will be developed to overcome this problem, namely the Sparkol Videoscribe-based SPEDAHERU media.

This media contains material on the digestive system of food in ruminant animals which is explained by animation and designed as attractively as possible by making animations that match the preferences of elementary school children, displaying clear and solid language so that it is easy to understand, appropriate materials, and appropriate audio settings so that they can make students are active and understand the material. This media has the advantage that it is technology-based and made as attractive as possible so that it can attract the attention of students. The finished media will be tested for validity.

Based on the results of research and development that has been carried out, three types of research data can be described, the first data being the validity, effectiveness, and practicality of the product. Product validity can be seen from the results of expert validation carried out to 4 experts with categories of 2 media experts and 2 material experts, the results of expert validation will be analyzed to see the value of the validity of the product being developed, expert validation is also obtained input and suggestions that are used to revise the product. developed. The results of the expert validation that will be carried out are presented in the following diagram.

### Media Validity Results

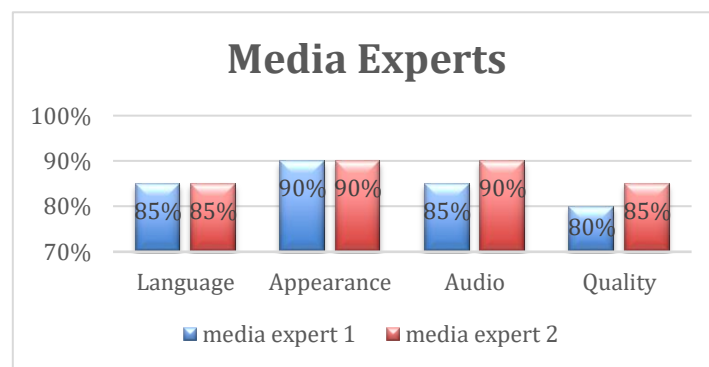


Figure 1 Media Ratings by Media Experts

Figure 1 above is the result of the data obtained from the two expert validations. Based on the validation results from the two media experts on aspects of language, display, audio, quality. Media expert 1 got an average score of 85%. Media experts 2 obtained an average percentage of 87.5%. The average percentage based on the two validators obtained an average score of 86.25%. Based on the analysis of media experts, this media is very suitable to be used to help the learning process of the digestive system of food in ruminant animals. Here are the results from material experts with the following diagram:

### Material Validity Results

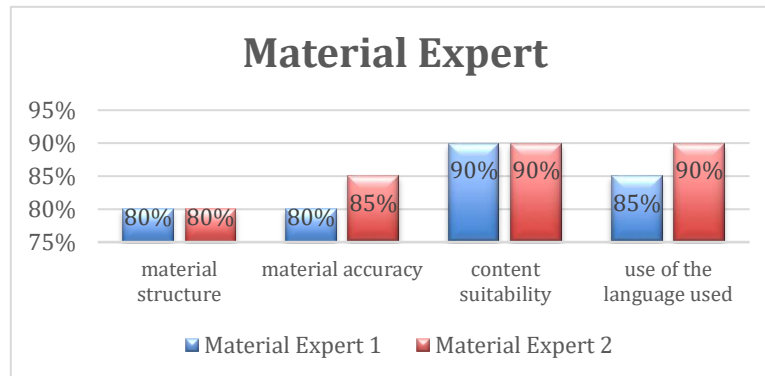


Figure 2 Material Assessment by Material Expert

Based on the validation results from the two material experts, it can be seen in figure 2, with aspects of the structure of the material, the accuracy of the material, the suitability of the content, the use of the language used. Media expert 1 obtained an average score of 83.75%. Meanwhile, media expert 2 obtained an average score of 85%. The average percentage of assessments achieved from the two material expert validators is 85%. Based on the analysis of material experts, the learning media is very suitable to be used to help the learning process of the digestive system of food in ruminant animals. In addition to the validity of the product in this study, practicality data will also be obtained from teachers who implement in class, in more detail the results of the practicality test based on the assessment of practitioners or teachers can be seen in diagram 3.3 below.

### Media Practice Results

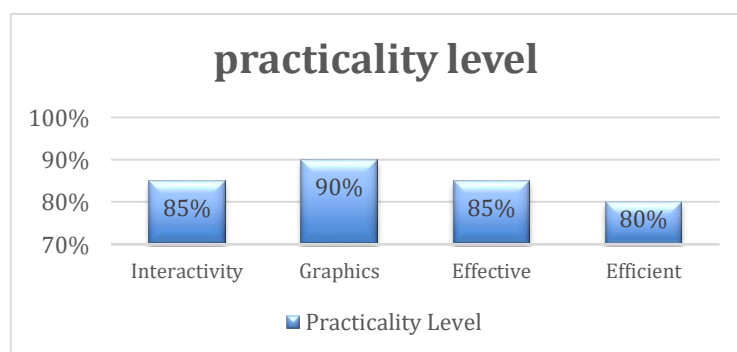


Figure 3 Practical assessment by class teacher v

Based on the diagram, it is known that the level of practicality with details of creative, efficient, interactive, and effective aspects obtained an average score of 85%. Based on the results of the teacher's response analysis, the learning media developed got responses in the very practical category used to help learning the learning process of the digestive system of food in ruminant animals. In addition to the teacher's response, data from the student's responses were also obtained which is shown in Figure 4 below.

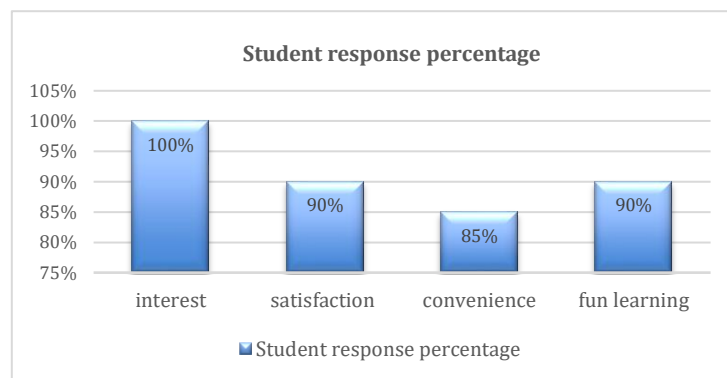


Figure 4 Student response data

Based on the diagram on the aspects of interest, satisfaction, convenience, and fun learning, an average score of 91.25% was obtained in the very good category. In addition, there is also data on the effectiveness of the media with the following diagram.

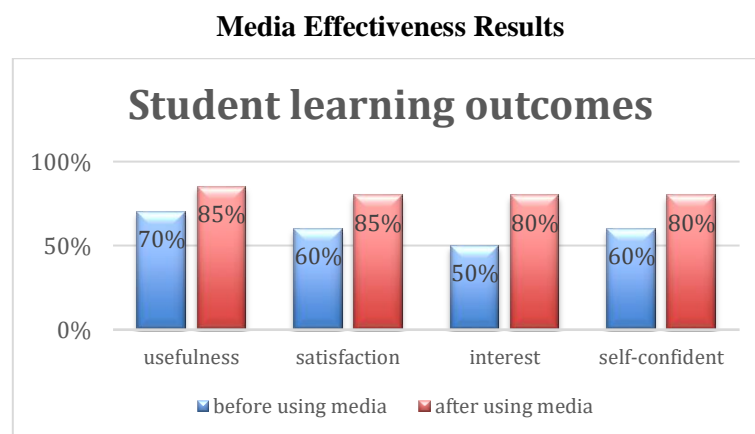


Figure 5 Results of data analysis of student learning outcomes

Based on the results of research that has been carried out pretest and posttest can be seen in figure 5 with details on aspects of usefulness, satisfaction, interest, and confidence. The result before using learning media obtained a score of 60% and 82.5% after using learning media. Based

on data analysis from student responses, learning media is very suitable to be used to help the learning process of the digestive system of food in ruminant animals.

#### **IV. CONCLUSION**

From the results of the research that has been used, it can be concluded that the learning media in SPEDAHERU based on sparkol videoscribe in the fifth grade science subjects in elementary schools is declared suitable for use as science learning media. This can be seen from the results of the media expert validation obtained a score of 86.25% and material experts get an average score of 85%, the results of the practicality of the media obtained a score of 85% by practitioners and 91.25% by student responses, the results of the effectiveness that the post-test score is more better than the pre-test value where the post-test score obtained a score of 82.5% and the pre-test 60%. The learning media using SPEDAHERU based on sparkol videoscribe in the fifth grade science subject at SDN Manggis 2 succeeded in increasing students' interest and understanding.

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