Sparkol Videoscribe Learning Media for Science Subjects on Human Needs Material

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ABSTRAK

Permasalahan dalam pembelajaran Ilmu Pengetahuan Alam dan Sosial (IPAS) yang paling menonjol adalah kurang optimalnya pemanfaatan media pembelajaran hingga berpengaruh pada hasil belajar peserta didik. Penelitian pengembangan ini bertujuan untuk mengembangkan media Sparkol Videoscribe pada mata pelajaran IPAS materi kebutuhan manusia. Jenis penelitian ini yaitu penelitian pengembangan. Penelitian ini menerapkan model pengembangan ADDIE. Subjek penelitian yaitu 1 ahli media pembelajaran dan 1 ahli materi pembelajaran. Subjek uji coba penelitian pengembangan ini yaitu 18 peserta didik dan Guru kelas IV. Teknik pengumpulan data dilakukan melalui wawancara, observasi, tes, angket serta dokumentasi. Instrumen pengumpulan data menggunakan butir pertanyaan uji kelayakan media sparkol videoscribe. Teknik yang digunakan untuk menganalisis data yaitu analisis deskriptif kualitatif, kuantitatif, dan statistik inferensial. Hasil penelitian menunjukkan sparkol videoscribe layak digunakan, berdasarkan penilaian pakar ahli media sebesar 95,8% dan ahli materi sebesar 90% dengan kriteria sangat layak. Media yang dikembangkan termasuk efektif digunakan berdasarkan uji t-test serta uji n-gain dengan kriteria sedang. Disimpulkan bahwa media pembelajaran sparkol videocribe yang telah dikembangkan layak dan efektif digunakan dalam pembelajaran IPAS karena mampu meningkatkan hasil belajar peserta didik. Implikasi penelitian yaitu media Sparkol Videoscribe pada mata pelajaran IPAS yang dikembangkan dapat digunakan dalam pembelajaran.

ABSTRACT

The most prominent problem in learning Natural and Social Sciences (IPAS) is the less-than-optimal use of learning media, which affects students' learning outcomes. This development research aims to develop Sparkol Videoscribe media on IPAS on human needs material. This type of research is development research. This research applies the ADDIE development model. The research subjects are 1 learning media expert and 1 learning material expert. The subjects of this development research trial are 18 students and grade IV teachers. Data collection techniques are done through interviews, observations, tests, questionnaires and documentation. The data collection instrument uses questions to test the feasibility of the Sparkol videoscribe media. The techniques used to analyze the data are qualitative, quantitative, descriptive analysis, and inferential statistics. The study results showed that Sparkol videoscribe is feasible to use, based on the assessment of media experts by 95.8% and material experts by 90% with very feasible criteria. The media developed is practical based on the t-test and n-gain test with moderate criteria. It is concluded that the Sparkol videoscribe learning media that has been developed is feasible and effective to use in IPAS learning because it can improve students' learning outcomes. The implications of the research are that the Sparkol Videoscribe media developed for science subjects can be used in learning.

1. INTRODUCTION

Education becomes the most relevant way to instill new knowledge. Education is a tool used to shape the lives of students so that they can adapt to changes and developments in life and change for the better and be organized. This allows students to fully participate in social interactions and experiences (Imah et al., 2022; Nabela et al., 2021).Education is a means of empowering students to actively participate in exploring their abilities in various fields, such as spirituality, devotion and leadership (Afridoni et al.,

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2022; Failasufah & Setyasto, 2023; Imah et al., 2022; Nabela et al., 2021).Therefore, the government has issued the implementation of the curriculum in order to restore learning. Recovery efforts through the curriculum aim to optimize teaching and learning activities by emphasizing innovative and dedicated intracurricular learning. The Independent Curriculum emphasizes several aspects, namely: Improving quality, with a focus on important topics; Learning is based on collaborative projects that are student-oriented and applicable; Flexibility of learning through the formulation of learning outcomes (CP) and lesson hour rules (JP) (Budiwati et al., 2023; Dafitri et al., 2022; Santoso et al., 2023).More focus on important or essential topics is a characteristic of the Independent Curriculum. The Independent Curriculum integrates Natural Sciences (IPA) and Social Sciences (IPS) learning, thus creating Natural and Social Sciences (IPAS) subjects (Adnyana & Yudaparmita, 2023; Surya et al., 2023).The subject of Natural and Social Sciences (IPAS) is applied to develop scientific literacy. This will stimulate students to learn more complex and meaningful life at the next level of education (Budiwati et al., 2023; Marwa, 2023; Silvia et al., 2023). According to the theory of student development, the age of elementary school is a relevant age in developing children's inquiry skills. Natural and Social Sciences (IPAS) seeks to develop children's inquiry skills (Sa'adahh, 2023; Wijayanti, 2023).Natural and Social Sciences (IPAS) focuses on optimizing the Pancasila Student Profile as an ideal benchmark for Indonesian students. Natural and Social Sciences (IPAS) supports students in developing awareness of phenomena occurring in their environment (Muhardini et al., 2023; Wijayanti, 2023).The study of Natural and Social Sciences (IPAS) is related to the nature, phenomena, and relationships of biotic and abiotic components in the universe. Human interaction as individuals and social beings through the environment is one of its applications (Budiwati et al., 2023; Fanani et al., 2022; Marwa, 2023; Silvia et al., 2023).. However, the reality in the field, most teachers' science learning is less than optimal in facilitating student learning, students are prone to boredom and are not involved. Previous research findings state that limited learning methods and resources, along with limited resources, increasingly make students less interested in the learning process (Maulidah & Aslam, 2021; Saadah et al., 2022).Other research also states that the lack of learning media can cause students to have difficulties in learning activities, thus impacting on low student learning outcomes (Andriani & Wahyudi, 2023; Anggraeni et al., 2023; Yanto et al., 2023).In addition, because teachers use learning media that lack variety and interest, students' understanding of the science subjects is not optimal.

Based on the results of observations on grade IV students of SDN Ngijo 02, there are students who are less active, lethargic and indifferent, and easily bored during learning. Teachers tend to focus on the pictures printed (student books and teacher books). In addition, the available media is limited to pictures, posters, or other printed media and has not optimized the use of technology. Students are less interested in learning science because the use of learning media is less than optimal, especially technology-based and modern media, and teaching materials that are less interesting. This situation has an impact on decreasing student activity and understanding of the material. This problem has the potential to affect student learning outcomes, especially on human needs material. Low learning outcomes can be seen in the summative assessment data, there are 5 students who get very high scores, namely 90, but are still dominated by students with scores below the Learning Objective Achievement Criteria such as scores of 55 and 50 totaling 13 students. This shows a very significant inequality in value. Based on the results of the analysis, the solution offered is to develop Sparkol Videoscribe learning media for the subject of Science. Learning media is the main component because it is able to arouse students' enthusiasm and interest and make it easier for teachers to deliver lesson materials (Darmawan & Wahyudi, 2023; Karisma et al., 2020; Wulandari et al., 2020).Development of learning video media assisted by the Sparkol application with various features and advantages. Learning videos are one of the innovative audio visual media that have succeeded in increasing student interest in learning (Firdaus et al., 2023; Lia et al., 2023; Rahmawati & Atmojo, 2021).Video is a sophisticated type of media that combines various elements such as text, graphics, images/animations, and photos periodically, which makes it interesting and can attract public attention (Ayu Tantri et al., 2023; Fitri & Ardipal, 2021).In creating a white background animation design, using Sparkol Videoscribe software is the solution. Sparkol Videoscribe is a blank canvas software where you can put images and write words to explain a concept (Febrian et al., 2019; Khairani & Ain, 2021). Several supporting studies prove that the development of Sparkol Videoscribe media contributes and is promising and effective in the world of education. This finding is guided by previous research, research that has determined Sparkol Videoscribe is valid and feasible to be implemented for learning. Sparkol Videoscribe is worthy of being a student learning medium (Khairani & Ain, 2021; Siregar & Al-washliyah, 2022).Sparkol Videoscribe is useful in improving understanding of material and learning values (Hasan & Baroroh, 2019; Latifah et al., 2020).However, there has been no study on the development of Sparkol Videoscribe learning media in the subject of Science on Human Needs Material. Based on this, the purpose of this study is to develop Sparkol Videoscribe learning media on human needs material as well as to improve the learning outcomes of fourth grade students of SDN Ngijo 02. It is hoped that with Sparkol Videoscribe students will be facilitated in mastering the teaching

materials and optimizing the teaching and learning process.

2. METHOD

This type of research is development. This research usesResearch and Development (R&D) research method with the ADDIE Model, includes the stages of analysis, design, development, implementation, and evaluation (Jonnalagadda et al., 2022).The initial stage is analysis. The analysis stage consists of activities to review and collect information about the science learning process by determining Learning Outcomes (CP) and Learning Objectives (TP). The second stage is the design stage. This stage includes activities to design media products to be developed. The third stage is development. Development is useful for achieving the realization of the product design that is developed to become a final and complete product, product assessment by experts is also carried out at this stage. The next stage is the implementation stage, this stage is carried out with products that have gone through the assessment process to be tested on users, namely students and teachers, in order to find out the responses or responses from users after the product is used. The final stage for the ADDIE development model is evaluation, this stage is carried out to analyze the product's ability to improve student learning outcomes according to the specified material.

The location of this research is at SDN Ngijo 02 Semarang. The research subjects are 1 learning media expert and 1 learning material expert. The subjects of this development research trial are 18 students and grade IV teachers. Data collection techniques are carried out through interviews, observations, tests, questionnaires and documentation. Interview activities with grade IV teachers were carried out to obtain explanations and opinions regarding learning activities, conditions, and learning situations in grade IV of SDN Ngijo 02. Observations were carried out by listening while learning activities were taking place in grade IV of SDN Ngijo 02. The test is a measuring tool for student understanding in order to obtain learning scores in accordance with the rules and guidelines set. The type of test is multiple choice whose questions have been adjusted to the abilities and levels of thinking of each student. The questionnaire is used in obtaining data in the product feasibility test process by material experts and media experts, as well as media user responses. The Likerta scale is a reference in obtaining questionnaire data. The data collection instrument uses sparkol videoscribe media feasibility test questions. The questions have been adjusted to the needs of learning media development. The research instrument grid is shown in Table 1, Table 2, Table 3, and Table 4.

Table 1. The Product Feasibility Instrument Grid by Material Experts

Aspect		Indicator
Compliance	1.	The preparation of the material is adapted from CP and TP
	2.	Compliance of material with TP
Ability	1.	Material based on student abilities and characteristics
	2.	Presentation of material from simple to complex
Presentation of content	1.	Clarity of material
	2.	Communicative and clear language
	3.	Covering daily life
	4.	Presenting the material as interestingly as possible
Generalization	1.	The material improves students' understanding
	2.	Stimulate students to think critically

Table 2. The Product Feasibility Instrument Grid by Media Experts

Aspect		Indicator
Media quality	1.	The attractiveness of the video display
	2.	*Usable*(easy to use)
	3.	Media duration
Visualization	1.	Color proportions, background, animation
	2.	Image conformity
	3.	Text readability
	4.	The suitability of choosing the size and shape of the letters
Audio media	1.	Clarity of voice
	2.	Background sound compatibility
Language	1.	Easy to understand and informative language

Aspect			Indicator
Functions & benefits	&	1.	Media interests
		2.	Evoking student responses

Table 3. The Teacher Response Instrument Grid for Sparkol Videoscribe

Aspect		Indicator
Suitability of scope and content of material	1.	Sparkol Videoscribe is in line with the scope of the material
	2.	Material from simple to complex
	3.	Availability of supporting illustrations
Media presentation	1.	Media view
	2.	The use of media in learning
	3.	Use of media

Table 4. The Grid of Student Response Instruments for Sparkol Videoscribe

Aspect		Indicator
Suitability of media coverage and content	1.	Sparkol Videoscribe fits the scope of the material
	2.	Overall media presentation
Media presentation	1.	Media view
	2.	The use of media in learning
	3.	Use of media

The techniques used to analyze the data are qualitative descriptive analysis, quantitative analysis, and inferential statistics. Qualitative descriptive analysis is used to manage data in the form of input provided by experts regardingSparkol Videoscribe learning media for the Natural Sciences subject of Human Needs Material.Quantitative descriptive analysis is used to manage data in the form of scores given by experts regardingSparkol Videoscribe learning media on the subject of Natural Sciences, Human Needs Material. Inferential statistical analysis is used to test the effectivenessSparkol Videoscribe learning media for the Natural Sciences subject of Human Needs Material.The purpose of the n-gain test is to analyze the average increase in student learning outcomes in different treatments, namely pretest and posttest.

3. RESULT AND DISCUSSION

Result

The product results that have been developed by researchers are Sparkol Videoscribe learning media. Development research through the ADDIE model includesThe first stage is analysis. Teaching and learning activities are reviewed in order to obtain information and facts related to science learning so that there are products that are needed and need to be developed. The analysis stage is useful as a guide in solving problems related to learning. The analysis stage is carried out through interview and observation techniques. The results of interviews and observations obtained that learning is based on printed books and supported by pictures, posters, and other concrete media. Teachers have not optimized the use of technology in learning. Based on this, a variety of technology-based or digital learning media are needed as a solution to overcome these problems, namely the Sparkol Videoscribe learning media.

The second stage is design. This stage is in the form of designing the required development product. Activities are carried out to compile and determine the product and how it works. Sparkol Videoscribe learning media is designed based on Learning Achievements and Learning Objectives of Science in line with the needs of teachers and students of grade IV SDN Ngijo 02. Sparkol Videoscribe learning media is designed to focus on material that is related and close to the scope of students, and is not dominated by writing. In addition, Sparkol Videoscribe will be equipped with relevant images and attractive supporting illustrations so that it can make it easier for students to understand the material. This study designs supporting learning devices, namely Teaching Modules and Teaching Materials and compiles a questionnaire to collect data on the feasibility of Sparkol Videoscribe learning video products by media experts, material experts, and user responses. The third stage is development. At this stage, the product design is realized so that the product becomes a complete unit. This development stage is the stage in compiling the components needed in learning videos such as images, text, animation, dubbing, and supporting backsound to become a complete product that can be used by users, namely the Sparkol Videoscribe learning video. To support this process,

the Sparkol and Capcut applications are needed. The results of the development of the Sparkol Videoscribe learning video product are shown in Figure 1.

Figure 1. The Results of the Development of Sparkol Videsoscribe Learning Media

In the development stage, an assessment of the feasibility of the Sparkol Videoscribe learning media was carried out. Product assessment by expert experts including material experts and media experts through assessment questionnaire sheets according to the criteria.The results of obtaining feasibility scores for Sparkol Videoscribe media in science learning which have been adjusted to the eligibility criteria by two expert experts are shown in Table 5. Referring to the product feasibility assessment by expert experts, suggestions were obtained for improving media products regarding adjusting the images used as supporting material.

Table 5. The Results of Feasibility Assessment by Experts

Subject	Presentation	Criteria
Media Expert Assessment	95.8%	Very Worth It
Subject Matter Expert Assessment	90%	Very Worth It

The fourth stage of the ADDIE development model is implementation. At this stage, product development will be continued for the user trial process. The product trial process is useful for getting user responses or feedback regarding the sparkol videoscribe learning video product. The product trial went through two processes, including a small-scale trial and a large-scale trial. The small-scale trial process involved 6 students based on their level of thinking ability; high, medium, and low. The user response scores obtained in the product trial activity are attached in Table 6.

Table 6. The User Response Results Regarding Sparkol Videoscribe

Subject	Presentation	Criteria
User feedback (small scale)	90%	Very Worth It
User feedback (large scale)	82%	Very Worth It
Teacher's Response	95%	Very Worth It

Based on the results of Table 5 and Table 6, it is proven that the development of the Sparkol Videoscribe learning video is valid and very feasible for learning activities. The final stage of the ADDIE model is evaluation. This stage aims to obtain the results of the product development carried out, through improving student learning outcomes. The evaluation stage is carried out by analyzing student learning outcomes before treatment assisted by Sparkol Videoscribe learning media (pretest) and after treatment assisted by Sparkol Videoscribe learning media (posttest). In this development research, a normality test is used to analyze student learning outcome data whether it is included in the normal distribution or not using the Liliefors Test listed in Table 7.

Table 7. The Data Normality Test Results (Pretest Posttest)

Liliefors	Lo	Lt	Information
Pretest	0.167	0.242	Normal
Posttest	0.213	0.242	Normal

Based on the results listed in Table 7, it is proven that the calculation of the pretest data produces a value of 0.242 > 0.167, so the data is normally distributed. Likewise, the posttest data produces a value of 0.242 > 0.213, where Lt > Lo, so the data is normally distributed. Furthermore, the data was tested using a Paired Sample t-test to determine the effectiveness of the product with the help of SPSS version 25. Based on the results of the data analysis, the significance value (sig.) Is 0.000, which means that there is a significant difference in the pretest and posttest data. Furthermore, the data must be tested n-gain to determine the average increase between the pretest and posttest values, this is shown in Table 8.

Table 8. The N-Gain Test Results

Subject	Pre-test	Post-test	N-Gain	Criteria
Large scale assessment	55.8	80.3	0.5520	Currently

Based on the results in Table 8, it is proven that the n-gain value shows an increase in the moderate criteria in grade IV students of SDN Ngijo 02 Semarang with an average increase of 0.55. Thus, the sparkol videoscribe learning media is said to be worthy of being a science learning media and is able to improve student learning outcomes.

Discussion

The results of the data analysis show that the Sparkol Videoscribe learning media for human needs material is suitable for use in learning. This is due to the following factors. First, the Sparkol Videoscribe learning media is suitable for use in learning because it can improve student learning outcomes. Sparkol Videoscribe allows the use of attractive visuals and animations, so that the material presented becomes more concrete and interesting (Latifah et al., 2020; Pamungkas et al., 2018).This is what causes the Sparkol Videoscribe learning media to improve student learning outcomes because it makes it easier for students to learn. In addition, previous research findings also revealed that the use of learning videos can significantly improve student learning outcomes (Gae et al., 2021; Nurfadhillah et al., 2021; Panggabean et al., 2021).The developed learning media has fulfilled the content aspect of human needs. The material is adjusted to the level of student thinking and relates to the scope of student life, such as daily activities carried out by students. The material used must be in line with the learning objectives so that the learning objectives are implemented optimally (Cahyani & Jayanta, 2021; Santagata et al., 2021).

Second, Sparkol Videoscribe learning media is suitable for use in learning because it makes it easier for students to learn. Using media in learning, students will be facilitated to apply and understand the material presented by the teacher (Nur Jannah, 2020; Rasyid & Islamia, 2021; Ridha et al., 2021).Media development pays attention to the integration of several elements of images, text, audio and animation. Media is prepared as mature as possible to facilitate the learning process in the classroom and is packaged attractively so that the process of delivering information during learning can be fulfilled. Learning videos use message design science to make messages attract students' attention, make messages easy to understand and comprehend, and complement visual information (Cahyani & Jayanta, 2021; Prasetya et al., 2021; Santagata et al., 2021). Based on Edgar Dale's Cone of Experience, video-based media is at the visual engagement level in the video/film viewing section. This position is meaningfully 30% greater than audio media or media that only consist of images, because video media provides a visible and audible mediator that allows learners to gain knowledge (Novita et al., 2019; Prehanto et al., 2021).

Third, Sparkol Videoscribe learning media is suitable for use in learning because it improves the learning atmosphere. One of the most identical learning strategies in the 21st century is related to the use of various technology-based digital media (Ariani & Ujianti, 2021; Peña-Ayala, 2021; Widiyasanti & Ayriza, 2018).Overall, the use of learning media has been proven to have a positive influence on students in the form of an enthusiastic, happy, cooperative and independent attitude when learning (Ilsa et al., 2020; Octavyanti & Wulandari, 2021; Sukarini & Manuaba, 2021).The clarity of the text will certainly make it easier for students to receive information, while the selection of appropriate and consistent colors will attract students' attention in learning (Heryandi & Nur`aini, 2022).The Sparkol Video Scribe application produces conceptual animated videos combining images, voice-overs, animations and music to engage and trigger students' observation and concentration (Nurrohmah et al., 2018; Zulmiyetri et al., 2019).Sparkol Videoscribe presents interactive animations, so that students can be more active and involved in the learning process. This can improve student learning outcomes through the use of more interactive and dynamic technology (Fransisca & Mintohari, 2018; Nafisah & Pramudiani, 2023).Thus, Sparkol Videoscribe learning media can improve student learning outcomes in various ways, such as increasing the concreteness and attractiveness of the material, increasing student interaction and activity. Other relevant research shows the effectiveness of Sparkol Videoscribe learning media in optimizing student learning outcomes (Fadillah & Bilda, 2019; Rahayu & Masniladevi, 2020; Saragi & Tegeh, 2022).Sparkol Videoscribecan

stimulate students in mastering learning materials (Hanif, 2020; Hasan & Baroroh, 2019; Pratiwi et al., 2023).In addition, the questionnaire distributed to students showed that they were motivated and had critical thinking skills during the learning process, as well as very positive teacher responses. Sparkol videoscribe adds enthusiasm and motivates students (Juniarsih et al., 2021; Nafisah & Pramudiani, 2023).It can be concluded that several studies have provided evidence that the development of sparkol videoscribe media is able to provide good and effective results in learning. These findings are reinforced by previous studies with valid and effective media indicators in learning (Faizi et al., 2022; Rosyita & Tsurayya, 2021; Yuniarti & Trisna, 2022).The limitation of this research is that this research only developssparkol videoscribe learning media on human needs material in grade IV of elementary school. The implications of the research are that the sparkol videoscribe learning media on human needs material that is developed is suitable for use in learning. Sparkol videoscribe learning media on human needs material can facilitate students in learning so that it has an impact on increasing student learning outcomes.

4. CONCLUSION

The research on the development of Sparkol Videoscribe learning media on human needs material in grade IV of SDN Ngijo 02 Semarang is considered valid and feasible. This statement is proven by the assessment of the feasibility by two experts on the media and through user responses, namely teachers and students, with the acquisition of very feasible criteria. The results of the t-test showed a significant difference between the pre-test and post-test data. The results of the n-gain test showed an increase in the average learning outcomes with moderate criteria. It was concluded that the development of Sparkol Videoscribe learning media was declared valid, feasible, and effective to be applied to science learning on human needs material in grade IV of Elementary School.

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