AKSIOMA: Jurnal Program Studi Pendidikan Matematika
Volume 11, No. 1, 2022, 355-369

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i1.4602

SCIENTIFIC BASED SPARKOL VIDEOSCRIBE MEDIA: MATHEMATICS LEARNING MEDIA INNOVATION DURING THE PANDEMIC COVID 19

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Received 21 December 2021; Received in revised form 13 March 2022; Accepted 24 March 2022

Abstrak

Dampak penyebaran virus corona membuat seluruh sistem pendidikan telah beralih ke pembelajaran online. Tantangan utamanya adalah distribusi jaringan internet yang tidak merata dan penggunaan kuota yang mahal. Menciptakan materi pembelajaran yang memungkinkan siswa untuk belajar dari rumah tanpa bergantung pada internet atau kuota yang besar sangatlah penting. Salah satu pilihan pembelajaran terbaik di masa pandemi ini adalah pengembangan materi pembelajaran berbasis sparkol video scribe. Di masa pandemi Covid 19, penelitian ini bermaksud untuk membangun media video scriber sparkol berbasis ilmiah dan mendeskripsikan kualitas media video scribe sparkol berbasis ilmiah dalam pembelajaran matematika ditinjau dari validitas, kepraktisan, dan keefektifannya. Pendekatan penelitian adalah Research and Development (R&D), yang mengikuti kerangka ADDIE, terdiri dari lima langkah: perencanaan (design), pengembangan, implementasi, dan evaluasi. Subjek penelitian adalah 15 mahasiswa semester IV program studi pendidikan matematika Universitas Majalengka. Lembar uji validasi, lembar kepraktisan, dan lembar keefektifan termasuk di antara instrumen yang digunakan. Temuan menunjukkan bahwa media yang dikembangkan memenuhi standar yang ditetapkan oleh ahli media dan materi, digunakan di dalam kelas, dan efektif dalam meningkatkan minat siswa dalam belajar dan keterampilan berhitung. Di masa mewabahnya Covid 19, media video scribe sparkol layak dijadikan sebagai media pembelajaran alternatif

Kata kunci: Covid-19, Scientific, VideoScribe

Abstract

The spread of the coronavirus has made the entire educational system shift to online learning. The key challenges are the uneven distribution of the internet network and the expensive use of quotas. Creating learning material allows students to study from home without relying on the internet or massive quotas. One of the best learning options during this pandemic is developing sparkol video scribe-based learning material. During the Covid 19 pandemic, this study intends to build scientifically based sparkol video scribe media and describe the quality of scientifically based sparkol video scribe media in mathematics learning in terms of validity, practicality, and effectiveness. The research approach is Research and Development (R&D), which follows the ADDIE framework, consisting of five steps: planning (design), development, implementation, and evaluation. The research subjects were 15 students from the fourth semester of Universitas Majalengka's mathematics education studies program. Validation test sheets, practicality sheets, and effectiveness sheets were among the instruments employed. The findings revealed that developed media met the standards established by media and material experts, were used in classrooms, and effecinfluentialhanced student interest in learning and arithmetic skills. During the Covid 19 epidemic, the sparkol video scribe media deserves to be employed as an alternative learning medium.

***Keywords**: Covid-19, Scientific, VideoScribe*

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i1.4602

INTRODUCTION

The coronavirus outbreak's spread has had a devastating impact on various professions, including education. The corona pandemic is transforming public and private life on a never-before-seen scale. With a certain intensity, new insecurities and obstacles emerge. WFH use in education results in online learning or online education. Numerous educational activities are available online, including teaching, learning, practicum activities, assignments, conversations, and tests. Numerous face-to-face teaching and learning activities have been discontinued in favor of Work From Home opportunities (WFH). The Indonesian Ministry of Education directed teachers and lecturers to undertake WFH first (Purwanto, 2020). Due to the rising digital learning culture, Covid-19 has elevated schools and education to the forefront of media coverage, and researchers are now highlighting the remote school process in general (Torrau, 2020). The COVID-19 pandemic affects people from many walks of life, including those studying science and technology (Sommers et al., 2020).

While utilizing E-learning during a pandemic in general (and in scientific majors in particular) presents numerous problems, it also plays a critical role. E-learning implementation is not always seamless and practical. Throughout this COVID-19 pandemic, the college has accelerated the adoption of e-learning (Al Soub et al., 2021). The learning process faces numerous obstacles (Mustakim, 2020). including the following: (1) Unpreparedness of teachers/lecturers for distance learning media; (2) Inflexible learning methods; (3) Unequal distribution of science and technology mastery among teachers/lecturers; (4) Inequitable access to the internet network; (5) High internet quota; and (6) Less effective learning without direct supervision from teachers/lecturers.

Numerous challenges to learning that arose during the epidemic must still be overcome for the subject to be successfully transmitted. As a result, lecturers must be able to innovate learning through appropriate media. Following online learning, new media such as cellphones, social media, computers, virtual media tools, single media, and online games are the preferred instruments of this trying Covid19 time. The term "learning media" refers to a method or device that enhances the effectiveness and efficiency of educational activities, particularly when pupils are forced to study at home (Haryadi et al., 2019; Widodo & Wahyudin, 2018). Learning media should facilitate learning, not obstruct it (Kania, 2016). Media serves as a vehicle for transforming abstract information into physical form and overcoming the constraints of pupils' prior experience (Triastuti et al., 2017).

The critical role of media in supporting classroom learning (Rahmatika & Ratnasari, 2018) must also be influential in online learning. Thus, adaptable and high-quality learning media can help foster a positive learning environment and increase student learning outcomes (Husein Batubara & Noor Ariani, 2015). The selection and use of adaptive learning media to support online learning, among other things, can be accomplished by applying Bates's (Batubara & Batubara, 2020) SECTION model, which includes the following: Student (students), Ease of use (Ease of service), Cost/time (cost/time), Teaching (learning activities), I-interaction (interaction),

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

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Organizational issue (problem processing), Networking (expanding the network), and Security and privacy (security) and (Bates, 2019). The medium chosen must overcome the hurdles inherent in distance learning, which means that due to space constraints, the learning media must act as an intermediate between lecturers and students. The presence of auditory and visual components and the thoroughness of the material are prioritized to ensure that students comprehend the subject optimally.

Video learning is one type of learning media with auditory and visual advantages (Pamungkas et al., 2018). Students can grasp the content entirely with the use of instructional films. According to the Deakin Learning Future Teaching Development Team (Learning et al., 2014), audio and video assets can supplement learning resources by illustrating real-world settings, clarifying concepts, monitoring social groupings, and providing a catalyst for discussion. Additionally, they can introduce specialists and perspectives to the student learning experience, bringing issues 'to life' to stimulate conversation and motivate the study. With the advancement of science and technology, nearly everyone now owns a cellphone or laptop capable of opening various educational apps via videos.

Additionally, video is a popular technique for engaging students and enhancing their learning experience (Learning et al., 2014). Additionally, videos can be saved and viewed repeatedly, allowing students to study the topic at home thoroughly. As a result, instructional films are an appropriate mode of instruction for this COVID-19 course. Numerous applications have evolved at a breakneck pace in recent years. Sparkol Videoscribe is one application that can be used to create educational videos. Sparkol videoscribe is a fully-featured animated video-based learning platform. Sparkol video scribe can visually, audibly, and visually provide educational content, allowing students to enjoy learning (Pamungkas et al., 2018). Lecturers can also be recorded in this sparkol video scribe to explain the material according to the essential concept.

According to prior research, developing media with sparkol video scribe has a significant favorable effect on the learning process (Edison, 2017; M. Yusuf et al., 2016; Rahmatika & Ratnasari, 2018). The originality research is the development of the sparkol video scribe media, which was created as a learning medium during the COVID-19 epidemic and is based on scientific principles. The sparkol video scribe medium in this study will be built with various elements, including animation, photos, graphics, dubbing, material completeness, and scientific processes, all of which are highly beneficial for online learning and may be used while studying from home.

Sparkol's scientifically based video scribe is a breakthrough in mathematics education. This educational media is visually appealing, makes it easier for kids to learn at home, and is aligned with curricular objectives. Most instructional media do not maximize pupils' potential (Nugroho & Purwati, 2015). Apart from facilitating online learning, Sparkol Videoscribe is expected to boost self-confidence. Because students are urged to actively explore their knowledge through the learning situations they participate in, it is claimed that the scientific approach develops students'

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i1.4602

higher-order thinking skills (Nurhikmayati & Jatisunda, 2019). Students studying mathematics require this capacity for higher-order thinking. Lecturers/Teachers must improve their ability to promote students' logical, systematic, and scientific thinking development. It is the scientific approach's guiding premise.

The purpose of this study is to develop scientific-based video scribe based mathematics learning media during the covid 19 pandemic, to describe the quality of science-based learning media produced in learning that is adapted to aspects of feasibility, practicality, and effectiveness, and to evaluate the effectiveness of science-based learning media developed in learning.

METHOD

This research and development endeavors to create a high-quality scientifically-based sparkol video scribe learning media that will aid students in their learning throughout the covid 19 pandemic. The generated product must meet three requirements for quality: it must be valid, practical, and effective (Nieveen, 1997). The ADDIE model consists of five stages of research: analysis, design, development, implementation, and evaluation.

The research step of the ADDIE model begins with the analysis stage involves conducting a preliminary study through field observations, literature research on video scribes, identifying field challenges, and analyzing student needs. Next, the planning step begins with creating a research flow, followed by selecting and designing products via creating a video scribe script. Following the completion of the screenplay, the next stage of development is the creation of products and research instruments. The initial product is referred to as product I, and at this stage, research instrument and product testing are also conducted. Two media experts and two material specialists then evaluated product I to create product II. Then, product II was assessed for its applicability and efficacy with the research subject, namely 15 students enrolled in the fifth semester of Majalengka University's Mathematics Education Study Program. The research subjects are chosen from students who have taken courses in elementary differential equations. In the end, the evaluation of effectiveness and practicality for improvement media developed. The final improvement of media becomes the final product of development.

Questionnaires, interviews, and expert validation were utilized to collect data. Expert validation data is used to establish the research product's validity, and expert recommendations and comments supplement the product assessment description. The questionnaire data will gauge student interest in learning during the covid 19 epidemic. The findings will be used to determine the effectiveness of the developed media and the feasibility of the media utilized during learning. Meanwhile, the outcomes of the interviews were used to do a needs analysis of the students.

Data collection techniques using tests, questionnaires, interviews, and expert validation. Expert validation is used to determine the validity of research products and expert advice and comments to support the description of the product assessment. The test result data was used to measure the effectiveness of the developed media, and Questionnaires were used to measure the practicality of the media

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

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used during, learning. The views were used to analyze student needs and make practical assessments more accurate.

Two material specialists were present at the validation test stage: Mrs. Vici Suciawati, M.Pd, and Mr. Erik Santoso, M.Pd, mathematics instructors at Majalengka University. Meanwhile, Mr. Sudianto, M.Pd, a lecturer in mathematics learning media at Majalengka University, and Mrs. Dewi Fitriyani, S.Pd, a learning media programmer, are two media specialists. The questionnaire has a four-point scale, namely strongly agree (score 4), agree (score 3), disagree (score 2), and strongly disagree (scoring 3). (score 1).

The following Table 1 contains indicators of product validity as determined by media and material specialists.

Table 1. Validity Indicator for Media Experts

Aspect	**Indicator**
Suitability	The suitability of the size, color, and typeface used in the learning video
	The color combination used in the learning video
	Suitability of images/animations used in learning videos
	The usefulness of the sound and music used in the learning video
Convenience	Ease of use of learning videos
Attractiveness	The learning video used attracts students' attention
Communicative	The language used in the learning video is easy for students to understand
Clarity	The clarity in animation, sound, color, writing, and dialogue in the learning videos used
Usefulness	Learning videos have significant uses in improving students' abilities

Table 2. Validity Indicator for Material Expert

Aspect	**Indicator**
Suitability	Suitability and accuracy in the selection of material with the learning video model used
Convenience	Ease of language that students easily understand
Attractiveness	The material in the learning video used attracts students' attention.
Communicative	The material presented in the learning video is communicative and easy to understand
Completeness	The material and practice questions in the complete learning video follow the lesson plans and syllabus
Clarity	The clarity in the description of the material and the arrangement of the material in the learning video
Usefulness	Learning videos have significant uses in improving students' abilities

The validation questionnaire for media experts contains 18 statements and 13 statements for material experts. Each word is worth a maximum of four points. Each validator is prompted to select and complete one of the answer alternatives based on their rating. A questionnaire instrument was utilized to collect student answers to the generated product during the practicality assessment. There are twelve statements with four response options: highly agree

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

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(score 4), agree (score 3), disagree (score 2), and severely disagree (scoring 2). (score 1). Each student was asked to complete a questionnaire, selecting only one response to each statement. The following table 3 contains indicators of media practicality for pupils.

Table 3. Media Practicality Assessment Indicators for Students

Aspect	Indicator
Content Quality	1. The material is easy to understand
	2. The voice on the video scribe is clear
	3. The storyline is straightforward to understand
Happiness	1. There is a sense of pleasure during the learning process
	2. The displayed video scribe looks new
	3. The video scribe displayed looks interesting
	4. Videoscribe, which is used to foster student learning motivation
Grammar	1. The dialogue used uses easy-to-understand language
Use of illustrations	1. Pictures and illustrations are shown to follow the material
	2. Pictures and illustrations are displayed clearly and neatly
	3. The use of colors that match the characteristics of students
	4. The illustrations used to make students better understand the use of the material

A questionnaire sheet was given to students before using the video scribe in the effectiveness instrument. Students' responses to videoscribe could be seen on the effectiveness assessment of the development of the developed learning media. On the student effectiveness questionnaire, there are 10 statement items with four answer options, namely always (score 4), often (score 3), sometimes (score 2,) and never (score 1). The result of the student effectiveness questionnaire was then calculated to obtain an average rating and included in the effectiveness category. Table 4 is a media effectiveness assessment table for students adopted from (Safitri et al., 2020).

Table 4. Media Effectiveness Assessment Indicators for Student

Aspect	Indicators
Attention in Learning	1. Focus on watching the learning videos that are presented to completion
	2. Not sleepy when online learning is in progress
	3. Don't disturb friends when online learning is in progress
	4. Don't play anyone when online learning is in progress
Participation in Learning	1. Answering the questions given by the lecture
	2. Ask the teacher about the material that is not understood
	3. Comment on a friend's statement
Feeling Happy about Learning	1. Feeling happy using the video scribe learning media
	2. Feeling enthusiastic in learning when using the video scribe learning media
	3. Not bored with the learning process using video scribe

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

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The data analysis technique used is the descriptive quantitative analysis technique. The data were analyzed in the form of data from the instrument of material expert and media expert validation sheet, student response data, and student interest in learning data. In the data expert validation sheet analysis, the average score was calculated and converted into a quantitative category by referring to the categorization guidelines according to (Azwar, 2015). The types of validity and effectiveness categories in data analysis in this study are presented in Table 5 and Table 6.

Table 5. Videoscribe Media Validity Category

Score Interval	Category Validity
$4{,}01 < RTV \leq 5{,}00$	Very valid
$3{,}34 < RTV \leq 4{,}01$	Valid
$2{,}67 < RTV \leq 3{,}34$	Quite valid
$2{,}00 < RTV \leq 2{,}67$	Not valid
$1{,}00 < RTV \leq 2{,}00$	invalid

Table 6. Videoscribe Media Effectiveness Category

Score Interval	Category Validity
$3{,}51 < \bar{X} \leq 4{,}00$	very effective
$3{,}01 < \bar{X} \leq 4{,}51$	Effective
$2{,}51 < \bar{X} \leq 3{,}01$	Effective enough
$2{,}01 < \bar{X} \leq 2{,}51$	Less effective
$1{,}00 < \bar{X} \leq 2{,}01$	Not effective

Practicality data was taken using a practicality questionnaire and analyzed descriptively from the percentage of practicality aspects assessed. Effectiveness data were taken through the sparkol video scribe effectiveness questionnaire and analyzed descriptively and categorized according to Table 6.

RESULT AND DISCUSSION

Result

This research was conducted using the ADDIE Research and Development (R&D) approach on the fourth-semester elementary differential equations course for students of Mathematics Education at the University of Majalengka. ADDIE is a five-stage process that includes analysis, design, development, implementation, and evaluation. The creation of the video scribe is guided by the stages of the scientific learning model, ensuring that this learning medium is developed following technical requirements and current curriculum requirements.

Stage of Analysis

The analysis is the first step that must be taken before developing learning material. This stage involves examining and evaluating the issues raised by the research. According to the findings of observations made by researchers as instructors in elementary differential equations classes at Majalengka University's Mathematics Education Study Program, various factors serve as the foundation for generating media for this course, including the following:

First, the low learning outcomes of students in this course result from researchers' findings while teaching simple differential equations. It is calculated using the average quality value of students in 2019/2020, which remains within 65.83 with a grade of C. The majority of students struggle to learn the material in this course due to understanding the topic.

Second, based on the findings of questionnaires and interviews, most students claimed that the online learning component of this course had a significant impact on their grasp of the

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i1.4602

material. Students claimed to be bored and frequently tired during online learning sessions. Another factor contributing to the course's low grades is that the lecturer's delivery during the videoconference is still regarded as insufficient for comprehension of the material's substance. Many students continue to feel inadequate in their delivery of the topic.

Third, the most significant impediment to online learning is the uneven availability of internet connectivity in each student's neighborhood. Additionally, video conferencing takes much money to purchase an internet quota, and some students cannot attend college due to a lack of rations. Due to the limits imposed by the COVID-19 pandemic, not all pupils can fully acquire the material.

Fourth, because the current generation is a digital native intimately familiar with digital media, providing digital media-based learning will be uncomplicated. Students will be highly receptive and interested in various aspects of digital media. Thus, it is believed that learning using video scribe medium will be positively embraced.

According to the description above, the researchers designed a sparkol video scribe learning media to enable students to learn from home without requiring them to use the internet or a huge quota and better comprehend the phases of learning offered in the video scribe. Sparkol Videoscribe was chosen because it can deliver comprehensive learning content through materials, animated graphics, music, and beautiful designs, allowing students to enjoy the online learning process without becoming bored. The development of sparkol video scribe-based learning material is one of the most acceptable alternatives for improving the understanding of elementary differential equations during the COVID-19 pandemic.

Stage of Design

By creating competency maps, material maps, scientific model maps, and media scripts, the design step prepares students for learning media.

A competency map is a diagram or flow chart that contains indicators that students in the introductory differential equations course must master. This competency map is based on GBRP and RPS KKNI elementary differential equations courses. A material map is a diagram or flow chart that summarizes the introductory differential equations course's significant subjects. The scientific model map is a diagram or flow chart that details the processes required to supply material following the scientific model's steps. Additionally, media scripts serve as rules for instructing video scribes on learning media by using pre-designed competency maps, material maps, and scientific model maps. There were four media manuscripts in this study, each comprising multiple slides. Four learning videos were created using these four media scripts for four meetings. Scene descriptions, visual media descriptions, audio descriptions (bass sound), and narration comprise media manuscripts.

Stages of Development

The development stage, or development stage, is the step of media production during which the video scribe material is created according to the intended script. After the media has been generated and checked by researchers, it is validated by media

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

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specialists and material experts to ensure that it is used correctly in learning. The sparkol video scribe educational media production process is divided into three stages: pre-production, production, and post-production. The pre-production stage begins with preparing all software and hardware necessary to create educational material. The hardware comprises a laptop and mouse, while Sparkol Videoscribe leads the software. Additionally, supporting software is included, including the Android application Kinemaster, which functions as an audio processor, Photoshop, which serves as a graphic design processor. Furthermore, Sony Vegas Prohich acts as a video processor.

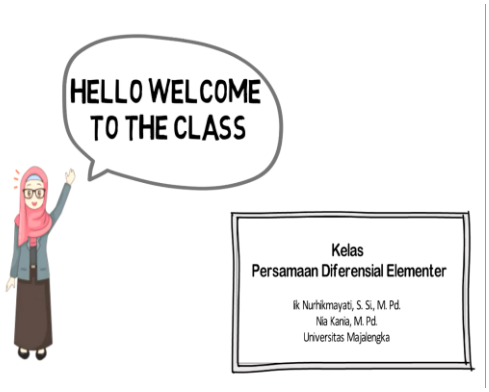

Figure 1. Lecturer Open the Class with Greetings

The introduction is the introductory section of the sparkol video scribe learning media. The opening depicts a lecturer greeting students in an elementary differential equations lesson with a "welcome to the class" sign. Next, the introduction, the following section defines the sub-chapters discussed. Learning through video scribe spiral is based on a scientific approach in describing the material. There are scientific processes in each segment, namely observing, asking, reasoning, attempting, and communicating—integrated scientific stages in learning through sparkol video scribe media.

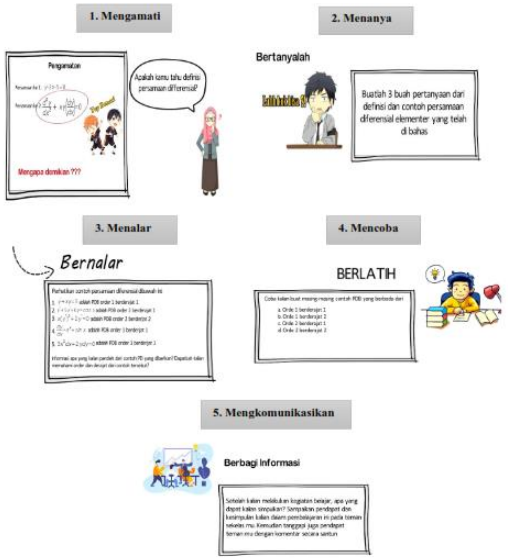

Figure 2. Scientific Steps in Learning Media Sparkol Videoscribe

The video scribe media developed is then examined and validated during the last design step in post-production. The validators are media experts, including Mr. Sudianto, M.Pd, a lecturer in teaching media, and Mrs. Dewi Fitriyani, S.Pd, a programmer and material expert, including Mrs. Vici Suciawati, a lecturer who has taught elementary differential equations courses, and Mr. Erik Santoso, a school math observer. The entire video scribe media was examined and approved by media and material professionals.

Here is Table 5 that presents the results of the validation by media expert:

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i1.4602

Table 7. Validation Results by Media Experts

No	Aspect	Validator 1	Validator 2	Validation Value	Category Validity
1.	Suitability	4,33	4,00	4,17	Very Valid
2.	Convenience	4,67	4,33	4,50	Very Valid
3.	Attractiveness	4,00	4,00	4,00	Valid
4.	Communicative	4,00	4,00	4,00	Valid
5.	Completeness	3,75	4,00	3,87	Valid
6.	Clarity	4,00	3,75	3,87	Valid
7.	Usefulness	4,67	4,50	4,58	Very Valid
Average total validation (RTV)				4,14	Very Valid

According to Table 7, the RTV value is 4.14, indicating that the sparkol video scribe learning medium received an excellent rating from the two media validators in outstanding. This category indicates that the created video satisfies all media validation standards. The sparkol video scribe media is considered to have excellent compatibility with writing, animation, sound, and music, to be straightforward to use in learning, attract students' attention, be communicative in understanding language, be precise, and be extremely useful for improving students' mathematical abilities. The following is Table 8, which presents the result of the validation by material experts.

Table 8. Validation Results by Material Experts

No	Aspect	Validator 1	Validator 2	Validation Value	Category Validity
1.	Suitability	4,00	4,33	4,17	Very Valid
2.	Convenience	4,33	3,75	4,04	Very Valid
3.	Attractiveness	3,75	3.75	3,75	Valid
4.	Communicative	3,50	4,00	3,75	Valid
5.	Completeness	3,75	3,50	3,63	Valid
6.	Clarity	4,00	3,75	3,87	Valid
7.	Usefulness	4,50	4,67	4,58	Very Valid
Average total validation (RTV)				3,97	Valid

According to Table 8, the RTV rating of 3.97 is excellent in all measured parameters. The two validators generally agreed that the developed media were of high quality in terms of material. The topic chosen is deemed appropriate and appropriate, and the language utilized is simple to comprehend. Have a reasonable level of interest, are communicative in their content delivery, provide complete material following lesson plans and syllabi, the material supplied is precise and orderly. It is instrumental in enhancing students' mathematical ability.

ISSN 2089-8703 (Print)
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Stage of Implementation

At this point, the sparkol video scribe media that has been created and validated is tested in learning activities. Students in the second semester of the 2020/2021 Even Academic year's elementary differential equations course in Majalengka University's Mathematics Education Study Program employ instructional videos. The learning takes place online because the KBM problem results from the Covid 19 epidemic. Six meetings are presented using learning videos via Zoom meetings. Additionally, pupils are provided with instructional films to study at their homes. The following is Table 7, which shows the percentage of practicality assessment of sparkol video scribe by students.

Table 9. The Percentage of Practicality Assessment of Sparkol Videoscribe by Students

No.	Rated Aspect	Percentage of Media Practicality Rating			
		SS (4)	S (3)	TS (2)	STS (1)
1.	Content Quality	60%	26,7%	6,7%	6,7%
2.	Happiness	53,3%	33,3%	6,7%	6,7%
3.	Grammar	66,7%	20%	13,3%	0%
4.	Use of illustrations	46,7%	40%	6,7%	6,7%
Average Percentage		56,7%	30%	8,3%	5,0%

According to Table 9, the average percentage of students responding to sparkol video scribes media is 56.7 percent, with 30% answering strongly agree and 30% responding to each component tested. Only approximately 13.3 percent of students who replied disagreed with the assessed statements. The percentage collected indicates that most pupils believe the sparkol video scribe media helped learn maths during the Covid 19 epidemic. It is seen as attractive and gives a high motivation for learning. Additionally, the sparkol media is considered simple for educational purposes, with relevant and explicit material and pictures. Thus, it can be inferred that the sparkol video scribe media generated during the Covid 19 period is practically employed for educational purposes.

Stage of Evaluation

The last stage of development is to evaluate the sparkol video scribe implemented in online learning. The evaluation in question is to analyze and clarify based on an assessment of the effectiveness of media used in learning differential equation courses. The data to be analyzed was obtained from the results of the effectiveness questionnaire on the research subject as many as 15 students who took elementary differential equations classes. The data from this questionnaire is used to measure the effectiveness of the media that has been produced. Here Table 10 is the results of the sparkol video scribe effectiveness assessment questionnaire.

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

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Table 10. Media Effectiveness Assessment Result Data Based on Questionnaire

Evaluation	**Statement Item**									
	1	2	3	4	5	6	7	8	9	10
Average Score (X)	3,13	3,25	3,40	3,33	3,50	3,38	2,87	3,00	3,00	3,13
Average Total Score ($\bar{X}$)					3,33					

Table 10 provides an overview of the effectiveness of the sparkol video scribe used in learning based on the sparkol videoscorbe effectiveness questionnaire that was given after learning in the elementary differential equations course was carried out. Based on the results of practical data analysis, the average score was 3,33; this shows that the sparkol video scribe implemented is effectively used in online learning and is included in the **effective** category.

DISCUSSION

COVID-19's development has had severe consequences for public institutions, including a considerable impact on the education system. Face-to-face learning, formerly discouraged, is now encouraged through computers and digital technologies. Adapting to technological use is both a hope and a challenge. The use of e-learning is both a hope and a difficulty (Ramdani et al., 2021). While m-learning offers several benefits, as shown in the literature, its success is not guaranteed unless properly accepted and executed (Acikgül & Sad, 2020).

According to media and material specialists, the Sparkol videoscribe was valid when developed. The scientific-based sparkol video scribe is an effective tool for online learning that dramatically increases student interest in learning, particularly in elementary differential equations. Sparkol Videoscribe is a video-based educational medium that features appealing animated sequences. Following the assertion (Pamungkas et al., 2018). Sparkol Videoscribe can appealingly offer academic knowledge by integrating visuals, sounds, and designs, allowing students to enjoy the learning process.

Elementary differential equations are courses that contain a lot of mathematical equations and are less attractive to students, especially during a pandemic. The use of sparkol video scribe media in this course is very suitable for seeing how influential the media is. The results showed that sparkol video scribes could increase students' interest in learning and increase the ability to understand the material presented. Learning videos during education can trigger discussions between students and explain concepts clearly, sequentially, and repeatedly so that students' understanding and critical thinking skills increase. Using video to support teacher learning is a common practice internationally (Amador et al., 2020). Audio and video materials can enhance learning resources by showing real-life scenarios, explaining concepts, observing social groups, and acting as triggers for discussion (Learning et al., 2014).

Saturation always occurs during the online learning process. Sparkol videoscribe can be the right solution to increase interest in learning and train students' independence. Increasing student interest in learning through

ISSN 2089-8703 (Print)
ISSN 2442-5419 (Online)

DOI: https://doi.org/10.24127/ajpm.v11i1.4602

sparkol media can be an alternative for teachers or lecturers to apply varied and innovative learning to materials considered less attractive to students. Implementing e-learning can fully influence students' attitudes and learning achievement (Ramdani et al., 2021). A good interest in learning will result in good learning outcomes as well.

The scientific approach integrated into the production of sparkol video scribe can also convey the concept of material clearly and orderly. Starting from observing, asking, reasoning, trying, and communicating are the proper steps in increasing understanding of concepts. Scientific integration is also one of the reasons for improving the effectiveness of using sparkol in learning. Every scientific activity encourages students to analyze concepts, statements, or questions given and gradually find patterns that lead to a logical conclusion (Nurhikmayati & Jatisunda, 2019)

This research was conducted during the Covid 19 pandemic in online learning. The research results are limited to data obtained indirectly. It allows data analysis that is not following the actual situation because researchers cannot directly meet students during the learning process. However, research findings generally show results in line with expectations, so the sparkol video scribe learning media should be used as an alternative learning media during a pandemic.

CONCLUSION AND SUGGESTION

The sparkol video scribe learning developed has met the valid, practical, and effective criteria for use in education, especially online education. The four validators indicate the media validity assessment as media experts and material experts who provide an average validity assessment in the valid category. The evaluation of the practicality of the media is shown based on the percentage of student responses, with 86,7% giving an upbeat assessment on every aspect that is assessed so that it can be concluded that sparkol media is practically used in learning. Effectiveness assessment is shown by the average score of the sparkol video scribe effectiveness assessment after education, which is included in the effective category. Based on the findings, it can be concluded that the scientific-based sparkol video scribe learning media deserves to be used as an alternative learning media during the Covid 19 pandemic.

Research must provide advice, both for stakeholders and further research.

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