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DEVELOPMENT OF LOCAL CULTURE-BASED MATHEMATICS LEARNING VIDEOS ASSISTED BY *THE KINEMASTER APPLICATION* TO IMPROVE STUDENT LEARNING OUTCOMES IN GRADE V ELEMENTARY SCHOOL

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Abstract

This research is motivated by the development of information and communication technology has had a significant impact on various aspects of life, including in the field of education. However, the use of this technology has not been fully optimal in various educational units, especially at the elementary school level. Based on the results of observations and interviews conducted at SDN 07 Pancung Soal that the media is still less interesting made by educators. The learning media used by teachers is image media, Media is less innovative in use when teaching, teachers only use lecture method. So students only as listeners so learning feels less interesting students become bored and less pay attention. This study aims to develop a local culture-based mathematics learning video assisted by the kinemaster application to improve student learning outcomes in grade V of elementary school. This study uses R&D (Research and Development) research with a 4D model, namely define, design, develop, and dissaminate. The results of the study indicate that the mathematics learning video in grade V of Elementary School is very valid with a design expert validation score of 94.44 with a very valid category, material expert validation with a score of 91.07 with a very valid category and language expert validation with a score of 92.30 with a very valid category, and the average overall validation score is with a score of 92.60 (Very Valid). For the Practicality results from educators, an average value of 96.15% was obtained with Very Practical assessment criteria, while for the practicality of the first twenty students, an average value of 91.11% with Very Practical criteria. For the Effectiveness results, an average value of 93.21% was obtained with very effective criteria. This video media can also get a positive response from students and teachers because it is easy to access and interesting. Thus, the use of local culture-based mathematics learning videos assisted by the kinemaster application can be an innovative solution in improving the quality of learning and student learning interest in the digital era.

Keywords: Video Development, Mathematics Learning, Improving Learning Outcomes

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INTRODUCTION

Education is an absolute necessity that must be fulfilled throughout life. Without education, it is very impossible for humans to live and develop in line with their ideals towards progress, welfare, and happiness, according to the concept of their outlook on life. In order for the achievement of the goals of education to be effective depends a lot on the learning process carried out.[1]

The development of science and technology has further encouraged reform efforts on the use of technological outputs in the learning process.[2] Teachers are required to be able to use the senses that can be provided by the school or educational institution or educator itself.[3] "The development of digital systems has increased the speed and accuracy of data collection in educational studies or the use of digital technology in educational research opens access to data sources that were previously difficult to reach".[4]

Mathematics is one of the main subjects in elementary schools that has an important role in shaping students' logical, systematic, critical, and creative thinking skills. Through mathematics learning, students are expected to be able to understand basic concepts that are useful in daily life and become provisions in learning science and technology at the next level of education. Therefore, mathematics learning in elementary schools needs to be designed meaningfully, contextually, and in accordance with the characteristics of student development.

However, the reality in the field shows that mathematics learning is still often considered a difficult and uninteresting subject for students. Many students have difficulty understanding abstract mathematical concepts, resulting in low learning outcomes. This condition is caused by several factors, including the use of learning methods that are still conventional, the lack of use of varied learning media, and the lack of association of mathematics materials with students' real lives.

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[1] Lukman Hakim, "Pemerataan Akses Pendidikan Bagi Rakyat Sesuai Dengan Amanat Undang-Undang Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional.," *EduTech: Jurnal Ilmu Pendidikan Dan Ilmu Sosial* 2, no. 1 (2016), https://doi.org/10.30596/edutech.v2i1.575.

[2] Eva Dewi, "Potret Pendidikan di Era Globalisasi Teknosentrisme dan Proses Dehumanisasi," *Sukma: Jurnal Pendidikan* 3, no. 1 (2019), https://doi.org/10.32533/03105.2019.

[3] Nurdin Arsyad et al., "Pengembangan Media Pembelajaran Matematika Berbasis Visual Basic Untuk Siswa Kelas VIII SMP," *Issues in Mathematics Education (IMED)* 5, no. 2 (2021), https://doi.org/10.35580/imed23848.

[4] Christo J. R. Masinambow et al., "Inovasi Digital dalam Manajemen Sekolah: Meningkatkan Kinerja Pendidikan di Era Teknologi," *Academy of Education Journal* 16, no. 1 (2025), https://doi.org/10.47200/aoej.v16i1.2686.

The development of science and technology in the 21st century requires the world of education to continue to adapt and innovate.[5] Teachers are required to be able to utilize technology as a means of supporting learning so that the teaching and learning process becomes more effective and interesting. Teachers no longer only play the role of conveying information, but as facilitators who are able to create an active, creative, and fun learning atmosphere. One form of learning innovation that can be done is through the use of technology-based learning media, such as learning videos.

According to Cheppy Riyana's opinion, learning video media is a media or tool that presents audio and *visible* which contains good learning messages that contain concepts, principles, procedures, theories of knowledge to help understand the material of a learning.[6] This video media can replace educators when students want to repeat the material that has been taught at school at any time according to the students' wishes.

Learning videos are audio-visual media that are able to present learning materials through a combination of images, text, sound, and animation. The use of learning videos can help students understand abstract material more concretely, increase learning motivation, and attract students' attention during the learning process. In addition, learning videos also allow students to learn independently both inside and outside the classroom, so that they can improve student understanding and learning outcomes.

In addition to the use of technology, effective learning also needs to be associated with the environment and culture of students. Local culture is part of students' daily lives which has great potential to be used as a learning resource.[7] The integration of local culture in mathematics learning can help students understand concepts contextually because the learning material is associated with real experiences that are close to their lives. In addition, learning based on local culture also plays a role in instilling the values of local wisdom and fostering a sense of love and pride for the local culture.[8]

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[5] Bustanul Arifin and Abdul Mu'id, "Pengembangan Kurikulum Berbasis Keterampilan Dalam Menghadapi Tuntutan Kompetensi Abad 21," *DAARUS TSAQOFAH Jurnal Pendidikan Pascasarjana Universitas Qomaruddin* 1, no. 2 (2024), https://doi.org/10.62740/jppuqg.v1i2.23.

[6] Riki Rikarno et al., "Mendesain Video Yang Menarik Dalam Pembelajaran Membaca Al-Quran Di Era New Normal," *Besaung : Jurnal Seni Desain dan Budaya* 6, no. 2 (2021), https://doi.org/10.36982/jsdb.v6i2.1710.

[7] Lelly Qodariah Dan Laely Armiyati, "Nilai-Nilai Kearifan Lokal Masyarakat Adat Kampung Naga Sebagai Alternatif Sumber Belajar," *SOCIA: Jurnal Ilmu-Ilmu Sosial* 10, no. 1 (2015), https://doi.org/10.21831/socia.v10i1.5338.

[8] Agus Efendi, "Implementasi Kearifan Budaya Lokal Pada Masyarakat Adat Kampung Kuta Sebagai Sumber Pembelajaran IPS," *Sosio-Didaktika: Social Science Education Journal* 1, no. 2 (2014), https://doi.org/10.15408/sd.v1i2.1263.

The development of mathematics learning videos based on local culture is one of the alternative solutions to overcome mathematics learning problems in elementary schools.[9] By integrating elements of local culture, such as community activities, the surrounding environment, traditional games, and cultural objects, into the learning video, it is hoped that students can more easily understand mathematical concepts and feel more interested in following the learning process.

The Kinemaster application is one of the video editing applications that is easy to use and has various supporting features, such as video cutting, text addition, animation, sound, and visual effects.[10] This application allows teachers to develop learning videos independently without the need for complicated technical skills. By utilizing the Kinemaster application, teachers can create learning videos that are creative, innovative, and in accordance with the needs and characteristics of elementary school students.

Based on the results of initial observations, mathematics learning in grade V of elementary school is still dominated by the use of textbooks and oral explanations from teachers. This condition causes students to tend to be passive, lack enthusiasm, and quickly feel bored during learning, thus having an impact on low student learning outcomes. Student learning outcomes become less than optimal, especially for those who need longer time to understand mathematics learning concepts. This can be seen from the results of pure scores for TP 1 (Unit 1) The addition and subtraction of fractions (Ordinary and mixed) of Mathematics semester 1 in the final summative assessment also showed low scores. Therefore, learning media that can increase student involvement and help them understand mathematics material better.

Table 1. Summative Assessment Scores of Class V Semester I Students at SDN 07 Pancung Questions

No	Student's Name	CD	Value	Remarks	
				Conclusion	Incomplete
1	AG	80	58		✓
2	HR	80	70		✓
3	YD	80	60		✓
4	RS	80	83	✓	

[9] Afifudin Lisgianto and Huri Suhendri, "Pengembangan Video Edukatif Volume Bangun Ruang Berbasis Etnomatematika Makanan Tradisonal Via Youtube," *Jurnal Derivat: Jurnal Matematika dan Pendidikan Matematika* 8, no. 2 (2021), https://doi.org/10.31316/j.derivat.v8i2.1964.

[10] Zainal Afandi et al., "Pelatihan Pembuatan Video Pembelajaran Menggunakan Aplikasi Kinemaster untuk Guru di SMAN 6 Kediri," *Jurnal Pengabdian Masyarakat (abdira)* 2, no. 1 (2022), https://doi.org/10.31004/abdira.v2i1.63.

5	EVERY	80	75		✓
6	LKA	80	75		✓
7	MY	80	50		✓
8	Z	80	55		✓
9	MRS	80	75		✓
10	SN	80	68		✓
11	N	80	80	✓	
12	Q	80	75		✓
13	F	80	68		✓
14	RZ	80	78		✓
15	NB	80	85	✓	
	Quantity		1055	3	12
	Average		70		
	Introduce yourself			20%	80%

Based on this description, the researcher wants to develop a learning video based on local culture. To improve learning in elementary schools by making interesting and fun learning videos in the process of imparting knowledge that can help students in understanding learning. So the researcher is interested in conducting a research entitled "Development of Local *Culture-Based Mathematics Learning Videos Assisted by Kinemaster to Improve the Learning Outcomes of Grade V Elementary School Students*

RESEARCH METHODS

This research uses a type of research and development (*Research and Development*). Research and development is a research method that aims to produce a certain product and test the effectiveness of the product in the learning process.[11] The product developed in this study is a local culture-based mathematics learning video assisted by the Kinemaster application for grade V elementary school students.

[11] Okpatrioka Okpatrioka, "Research And Development (R&D) Penelitian Yang Inovatif Dalam Pendidikan," *Dharma Acariya Nusantara: Jurnal Pendidikan, Bahasa dan Budaya* 1, no. 1 (2023), https://doi.org/10.47861/jdan.v1i1.154.

This development research uses the 4-D model, which was proposed by Thiagarajan. According to Thiagarajan, the 4-D Model consists of four stages, namely: *definement,* design*,* development*,* and *dissemination).*[12]

1. Define Stage

   The definition stage aims to determine and define the needs in the development of local culture-based mathematics learning videos. At this stage, several analysis activities are carried out, namely:

   a. Initial Analysis and Needs Analysis

      The initial analysis was carried out to identify problems that occurred in the mathematics learning process in grade V of elementary school. Based on the results of observations and interviews with teachers, information was obtained that mathematics learning was still dominated by lecture methods and the use of textbooks, so that students were less active and experienced difficulties in understanding the material. Therefore, learning media that is interesting, contextual, and able to improve student learning outcomes is needed.

   b. Analysis of Student Characteristics

      Analysis of student characteristics is carried out to determine the conditions, initial abilities, and characteristics of grade V elementary school students. Students at this level are at a concrete operational stage, so they need learning media that can present material visually and contextually. The integration of local culture in learning is expected to help students understand mathematical concepts in a more concrete and meaningful way.

   c. Curriculum and Material Analysis

      Curriculum analysis is carried out by examining Core Competencies (KI), Basic Competencies (KD), indicators, and mathematics learning objectives for grade V in elementary school in accordance with the applicable Curriculum. The selected material is then adjusted to the local cultural context so that it is easy for students to understand.

   d. Concept Analysis

      Concept analysis is carried out to identify and compile mathematical concepts that will be presented in the learning video in a systematic and logical manner. These concepts are then associated with local cultural elements that are relevant to students' daily lives.

[12] Birru Muqdamien et al., "Tahap Definisi Dalam Four-D Model Pada Penelitian Research & Development (R&D) Alat Peraga Edukasi Ular Tangga Untuk Meningkatkan Pengetahuan Sains Dan Matematika Anak Usia 5-6 Tahun," *Intersections* 6, no. 1 (2021), https://doi.org/10.47200/intersections.v6i1.589.

2. Design Stage

The design stage aims to design an initial product of local culture-based math learning videos. Activities carried out at this stage include:

a. Preparation of Learning Objectives

Learning objectives are prepared based on the results of curriculum analysis and competency achievement indicators that have been determined.

b. Color Arrangement and Video Scenarios

The color selection in the video media is set in full *color,* where each writing in the video is given interesting and different colors so that students become interested in learning.

c. Letter Selection

The typeface used in this video media is *Biski Medium.* The use of this typeface makes the video media look more attractive.

d. Learning Video Media Planning

At this stage, the materials that will be used in making video media are as follows: *Background,* educator images, and video design forms. The author designs and creates video learning media using *the kinemaster application.*

3. Develop Stage

The development stage aims to produce a learning video product that is suitable for use. Activities carried out at this stage include:

a. Product Validation by Experts

The products that have been developed are then validated by material experts and media experts. Subject matter expert validation aims to assess the suitability of the content of the material with the curriculum, the accuracy of the concept, and the clarity of the presentation of the material. The validation of media experts aims to assess aspects of display, audio-visual quality, language, and ease of use of learning videos.

b. Product Revision

Based on suggestions and input from experts, improvements and improvements were made to the learning videos so that the products produced were really suitable for use.

c. Practicality

Practicality is the level of familiarity and implementation of digital video media by teachers and students, namely by carrying out mathematics learning on fractional operation materials using video media that has been revised based on validator assessments. Video media has high practicality, if it is practical and easy to administer. Practicality is determined by using practicality test instruments according to teachers and practicality test

instruments according to students. At this stage, the researcher provides questionnaires to grade V teachers and 10 students to assess the video media products that have been developed.

4. Disseminate Stage

The dissemination stage aims to introduce and disseminate the learning video products that have been developed. At this stage, learning videos are used in mathematics learning activities in grade V elementary school and are socialized to teachers as an alternative learning media. Dissemination is carried out on a limited basis according to the needs and conditions of the school.

RESULTS AND DISCUSSION

This development research produced a product in the form of a local culture-based mathematics learning video assisted by the Kinemaster application for grade V elementary school students. The results of the research were presented based on the stages of the 4D development model, including product validation results, test results, student responses, and student learning outcomes.

1. Expert Validation Results

The learning videos that have been developed in the *development* stage are then validated by material experts and media experts to determine the feasibility of the product before being tested on students.

a. Material Expert Validation Results

Material validation is carried out on several aspects including identity completeness, indicator formulation, formulation of learning objectives, selection of teaching materials, selection of learning sources and media, preparation of learning activities, and assessment. The validation of this material was carried out by an expert validator, namely Mr. Dr. H. Hendrizal, M.Pd The results of the material validation for the identity aspect can be seen in the following table:

Table 2. Results of Material Validation by Mr. Dr. H. Hendrizal, M.Pd

Assessment aspects	Statement	Score			
		1	2	3	4
		SK	K	B	SB
Material Compatibility with CP	1. Contains clear learning objectives and can describe the achievement of core competencies and basic competencies.				√
	2. All CPs are presented in full in the material.				
	3. There are practice questions, assignments and the like that make it possible to measure students' mastery.				√
	4. Contextual, which is the material presented related to the atmosphere, task or context of the activities and environment of the students.				√
				√	
Suitability to the needs of learners	1. In accordance with the characteristics of the students.			√	
	2. Coherence and collapse according to the student's mindset.				√
	3. In accordance with the culture where students learn			√	
	4. Help students learn the material on Fractional Operations			√	
Material accuracy	1. . The facts and data presented are in accordance with reality and efficient to improve students' understanding.				√
	2. Examples and practice questions according to the concept.				√
Material updates	1. The material presented is in accordance with mathematical science.			√	
	2. The material presented is in accordance with the times.				√
	3. The material presented is in accordance with the concept map.				√
	4. Sample questions and practice questions according to the material concept.				√

Based on the table above, the math learning video material is feasible to be developed, with a score of 91.07%. This means that this material is "Valid" according to material experts with several improvements that must be corrected. In this stage, the author validated four times with improvement notes in accordance with the suggestions given by the validator.

b. Design Expert Validation Results

The assessment of the product validation test for video media is carried out to experts in the field of *design*. The design validator *of* this interactive mathematics learning video is Mr. Dr. Edo Andrefson, SE, MM, The results of the validation of the mathematics learning media that have been assessed can be seen in the following table:

Table 3. Design Validation Results by Mr. Dr. Edo Andrefson, SE, MM

Assessment Indicators	Assessment Items	Rating			
		1	2	3	4
		SK	K	B	SB
Video Presentation	1. Contains clear learning objectives and can describe the achievement of core competencies and basic competencies.				√
	2. Contains learning materials that are packaged in small/specific parts, making it easier to learn completely.				√
	3. Examples and illustrations are available that support the clarity of the presentation of the learning material.				
	4. There are practice questions, assignments and the like that make it possible to measure student satisfaction.			√	
	5. Contextual, namely the material presented related to the atmosphere, task or context of activities and the environment of the peseta didik.				√
					√
Graphic qualification	1. The language and images used are balanced, both from the aspect of the size of the comparison of language and images, as well as the message to be conveyed.				√
	2. The image caption is placed adjacent to the medium size of the letter.				
	3. The placement of illustrations/decorations on each page does not interfere with the clarity of information in the text which results in hindering students' understanding.				√
	4. Using 3 types of letters to distinguish the text in the material, information and sample questions and practice questions.			√	

Based on the design expert's table, the mathematics learning video is feasible to be developed with a percentage of 94.44%, meaning that this learning video media is in the "Very Valid" category according to design experts with several improvements that must be corrected. In this stage, the researcher validated twice with a note of improvement according to the suggestions given by the design expert.

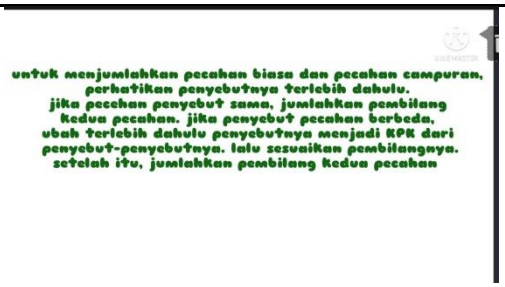
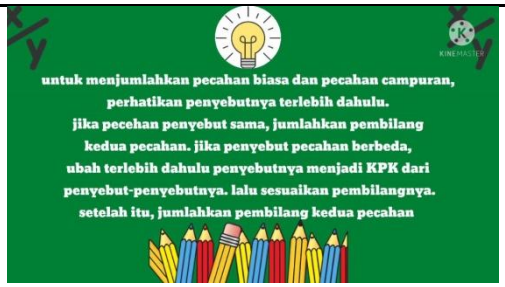
This makes learning media able to display learning materials with the characteristics of students' learning styles visually. Based on validation scores for the Material, Linguistics and *Design* aspects. In the Material Aspect, a score percentage of 91.07 was obtained with the category "Very valid". The Language aspect obtained a score percentage of 92.30 with the category "Very Valid" and, the *Design aspect* obtained a score percentage of 94.44 with the category "Very valid".

Thus, the average percentage of the overall score on the video media validation is 92.60 and is included in the "Very valid" category. This shows that the developed video media is very valid, thus meaning that the developed mathematics learning media is good and can be used as a learning resource for students in mathematics learning in grade V elementary school.

2. Product Revision Results

Based on input from material experts and media experts, revisions were made to the learning video. The revision included improving the language, adding examples of contextual questions based on local culture, improving the visual appearance, and adjusting the duration of the video. After the revision, the learning video was declared ready to be tested to students. The suggestions given by the validator can be seen in the following table:

Table 4. Revised Results Development of a local culture-based mathematics learning video using *the kinemaster application* to improve student learning outcomes in grade V of elementary school

Before Revision	**After Revision**
Revision I **Design Expert Lecturer: Dr. Edo Andrefson, SE, MM**	
	
Comments and suggestions : Beckground equalizes and the font is changed so that it is clear to the students.	**Repairs :** Beckground equalizes and the font has been replaced with a green Beckground in the explanation of the usual and mixed

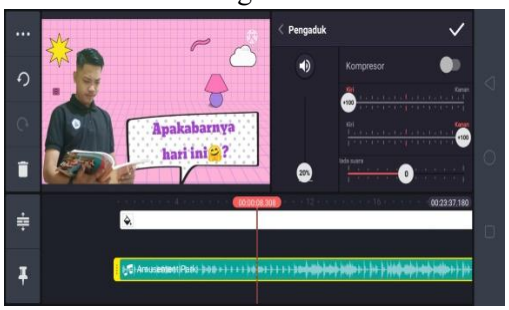
	summing material. 
Comments and suggestions : The sound back is arranged so that the sound of the material is clearer and louder than the music.	**Repairs :** The sound back has been lowered from 51% to 20%, so that the sound of the material is more clearly heard.

Table 5. Revised Results Development of local culture-based mathematics learning videos using *the kinemaster application* to improve student learning outcomes in grade V of elementary school

Before Revision	After Revision
Revision I **Linguist Lecturer : Dr. Jendriadi, M.Pd**	
	
Comments and suggestions : What is written and spoken must be consistent **Comments and suggestions :** Language in teaching materials is good. However, for intonation, it needs to be balanced in terms of high, medium and low voice.	**Repairs :** What is suggested by the validator has been fixed related to the word hmmm... what is said in the video upss... **Repairs :** What the validator suggested has been corrected according to what the validator conveyed.

Table 6. Revised Results Development of a local culture-based mathematics learning video using *the kinemaster application* to improve student learning outcomes in grade V of elementary school

Before Revision	After Revision
Revision I **Lecturer of Material Experts : Dr. H. Hendrizal, M.Pd**	
Comments and suggestions : Videos can be used without revision and make the video even more specific	**Repairs :** In the video, it has been specified again.

3. Practicality Results

At this practicality stage, the researcher provided a questionnaire along with displaying mathematics learning media carried out to 1 educator and 28 students, the product was made practical and made students more active in learning and understanding the material provided.

Table 7. Practicality Test for Educators

No	Practitioner Name	Departments	Total Score	Interval	Criteria
1	Wetrina, S.Pd	Classroom Educator	52	96,15%	Very Practical
Correspondence				96,15%	Very Practical

Based on the practicality test obtained from educators with an interval of 96.15%, an average score of 96.15% was obtained with the criterion of "Very Practical". Meanwhile, for the practicality test for students, the researcher used 28 students. The practicality test for students is as follows:

Table 8. Practicality Test for Students

No	Practitioner Name	Total Score	Interval	Criteria
1	Sahril	65	90,27%	Very Practical
2	Hafizzatul Risviani	64	88,88%	Very Practical
3	Mhd.Idris Siregar	66	91,66%	Very Practical
4	Jeslin Cristabel Dabutar	66	91,66%	Very Practical
5	M.Abil	66	91,66%	Very Practical
6	Hapnidah	63	87,5%	Very Practical
7	Viski Saputra	64	88,88%	Very Practical
8	Kholijah	66	91,66%	Very Practical
9	Parulian Simanjuntak	67	93,05%	Very Practical
10	Firatun Novos	65	90,27%	Very Practical
11	Diva Amanda	67	93,05%	Very Practical
12	Muhammat Farez	67	93,03%	Very Practical
13	Rehan Naldi P	67	93,03%	Very Practical
14	Olivia Gelvinda	66	91,66%	Very Practical

15	Hero Andhko Paydar	68	94,44%	Very Practical
16	Nurhidayah	64	88,88%	Very Practical
17	Rambe River	65	90,27%	Very Practical
18	Amira Zul Fitri	65	90,27%	Very Practical
19	Hafizah Helova	65	90,27%	Very Practical
20	Sifa Aulia Yasmin	64	88,88%	Very Practical
21	Alya Azizah	65	90,27%	Very Practical
22	Ilham Pratama Siregar	65	90,27%	Very Practical
23	Siti Rahma Aulia	66	91,66%	Very Practical
24	Sahru Raja	65	90,27%	Very Practical
25	Princess Octaviani	66	91,66%	Very Practical
26	Haikal AmaTt Dani	66	91,66%	Very Practical
27	Jesika Aulia Depal	67	93,03%	Very Practical
28	Dian Rafani	67	93,03%	Very Practical
Average			**91,11%**	**Very Practical**

Based on the practicality test obtained from the students, they got an average score 91,11%with the criteria of "Very Practical.

4. Effectiveness

The effectiveness of video media was carried out in a trial for 28 students on November 2, December 2, 2025. The researcher displayed the mathematics learning video media that had been developed, namely the fraction counting operation. The effectiveness test was carried out by examining the results of the video media effectiveness evaluation test that the students did. The values obtained from the effectiveness are as follows:

Table 9. Effectiveness Test for Students

No	Practitioner Name	Total Score	Interval	Criteria
1	Sahril	100	100%	Highly Effective
2	Hafizzatul Risviani	90	90%	Highly Effective
3	Mhd.Idris Siregar	90	90%	Highly Effective
4	Jeslin Cristabel Dabutar	90	90%	Highly Effective
5	M.Abil	90	90%	Highly Effective

6	Hapnidah	100	100%	Highly Effective
7	Viski Saputra	100	100%	Highly Effective
8	Kholijah	90	90%	Highly Effective
9	Parulian Simanjuntak	100	100%	Highly Effective
10	Firatun Novos	90	90%	Highly Effective
11	Diva Amanda	90	90%	Highly Effective
12	Muhammat Farez	90	90%	Highly Effective
13	Rehan Naldi P	90	90%	Highly Effective
14	Olivia Gelvinda	100	100%	Highly Effective
15	Hero Andhko Paydar	90	90%	Highly Effective
16	Nurhidayah	100	100%	Highly Effective
17	Rambe River	90	90%	Highly Effective
18	Amira Zul Fitri	100	100%	Highly Effective
19	Hafizah Helova	100	100%	Highly Effective
20	Sifa Aulia Yasmin	90	90%	Highly Effective
21	Alya Azizah	100	100%	Highly Effective
22	Ilham Pratama Siregar	90	90%	Highly Effective
23	Siti Rahma Aulia	90	90%	Highly Effective
24	Sahru Raja	90	90%	Highly Effective
25	Princess Octaviani	90	90%	Highly Effective
26	Haikal AmaTt Dani	90	90%	Highly Effective
27	Jesika Aulia Depal	100	100%	Highly Effective
28	Dian Rafani	90	90%	Highly Effective
Average			**93,21%**	**Highly Effective**

Based on the effectiveness test obtained from 28 students, an average score of 93.21% was obtained with the criterion of "Very Effective".

Discussion

This research aims to produce valid, practical, and effective mathematics learning videos in improving the mathematics learning outcomes of grade V elementary school students. Based on the results of the research and analysis that has been carried out, the following is the answer to the problem formulation posed in the introductory chapter.

The Results of Mathematics Learning Videos

The development of mathematics learning videos in this study was carried out using a 4D model which includes the stages of definition, design, development, and dissemination. At the definition stage, the results of observations and interviews with teachers show that mathematics learning in class V still tends to be conventional with limited media, so that students have difficulty understanding abstract concepts and are less motivated to learn independently. This condition indicates the need for digital media innovations that can accommodate active learning, valid mathematics learning videos.

Validity Results of Math Learning Videos

Based on expert validation results *design,* Mathematics learning videos are feasible to be developed with a percentage of 94.44%, meaning that this learning video media is in the category of "Very Valid" according to design experts with several improvements that must be corrected. In this stage, the researcher validated twice with a record of improvement according to the suggestions given by the design expert.

This makes learning media able to display learning materials with the characteristics of students' learning styles visually. Based on validation scores for the Material, Linguistics and *Design* aspects. In the Material Aspect, a score percentage of 91.07 was obtained with the category "Very valid". The Language aspect obtained a score percentage of 92.30 with the category "Very Valid" and, the *Design aspect* obtained a score percentage of 94.44 with the category "Very valid".

Thus, the average percentage of the overall score in the validation of video media is 92.60 and is included in the category of "Very valid". This shows that the video media developed is very valid, thus meaning that the developed mathematics learning media is good and can be used as a learning resource for students in mathematics learning in grade V of elementary school.

Results of Practicality of Mathematics Learning Videos

Based on the practicality test obtained from educators with an interval of 96.15%, an average score of 96.15% was obtained with the criterion of "Very Practical". Meanwhile, for the practicality test for students, the researcher used 28 students. For students, this mathematics learning video is interesting because it displays a clear illustration of the five senses, a short video that is easy to understand. They feel motivated because they can bring the learning video home so that it can be understood at home.

Effectiveness of Math Learning Videos

The effectiveness of mathematics learning videos from a significant increase in student learning outcomes. Based on the effectiveness test obtained from 28 students, an average score of 93.21% was obtained with the criterion of "Very Effective". This means that there is a significant

difference between the learning outcomes of students who use learning videos and conventional learning.

This result is in line with the research of Sun, Wu, & Lee which states that learning videos are able to improve students' understanding, motivation, and practical skills.[13] Thus, mathematics learning videos have been proven to be valid, practical, and effective in improving mathematics learning outcomes of grade V elementary school students, especially in fractional operation materials. The development of this mathematics learning video refers to needs analysis, independent curriculum analysis, and student analysis, then a mathematics learning video design in grade V elementary school is produced which aims to make students' perception of mathematics learning develop in a better direction. The existence of mathematics learning media is expected to change students' perception so that they do not consider mathematics learning difficult and boring, but rather become fun learning.[14]

With video media, students will better understand the material conveyed through the video media shown.[15] With the existence of video media, it is proven that students are able to achieve abilities in the cognitive, affective, psychomotor realms and improve interpersonal skills. The results of Hafizatul Khaira's research entitled "The Utilization of *the Kinemaster* Application as an Ict-Based Learning Media" show that *the kinemaster* application in Mathematics learning video editing is highly recommended to be downloaded by educators because it is easy and effective if used by educators. *The kinemaster* application is one of the applications that is currently quite in demand by smartphone users, especially android for video editing. The connection with this research is that the use of *the kinemaster* application can provide convenience in learning media by educators and also students.[16] This research has been proven to be able to improve the quality and quality of learning between educators and students.

Based on the various research results above, it can be concluded that learning video media using any application when used in schools is effective in improving all aspects of learning such as, interest in mathematics learning, mathematics learning outcomes, students' activeness when learning mathematics and making it easier for educators to teach various materials in mathematics

[13] Mujiasih Mujiasih and Siti Alvi Pramesti, "Preferensi Platform Digital dan Intensi Penggunaan MOOCs dalam Pembelajaran Matematika Siswa SMA," *Nuris Journal of Education and Islamic Studies* 5, no. 2 (2025), https://doi.org/10.52620/jeis.v5i2.122.

[14] Titin Supriyatin, "Persepsi Siswa Terhadap Penggunaan Quizizz dalam Pembelajaran Matematika," *Journal of Nusantara Education* 3, no. 2 (2024), https://doi.org/10.57176/jn.v3i2.88.

[15] Norma Norma, "Meningkatkan Hasil Belajar Peserta Didik Melalui Media Video Pembelajaran Pada Pembelajaran Jarak Jauh Di Masa Pandemi Covid-19," *SOCIAL : Jurnal Inovasi Pendidikan IPS* 1, no. 2 (2021), https://doi.org/10.51878/social.v1i2.697.

[16] Rusi Rusmiati Aliyyah et al., "Upaya Meningkatkan Hasil Belajar Ipa Melalui Penggunaan Media Video Pembelajaran," *Jurnal Sosial Humaniora* 12, no. 1 (2021), https://doi.org/10.30997/jsh.v12i1.4034.

learning. All of the above research is in accordance with the results of the research conducted by the author on the development of mathematics learning videos in grade V of elementary school. The research that the author has conducted at UPT SD Negeri 07 Pancung Soal uses mathematics learning videos is also effective in improving student learning outcomes. Thus, the use of video learning videos should be developed in mathematics learning in elementary schools.

CONCLUSION

Based on the results of research and discussion on the development of local culture-based mathematics learning videos assisted by the Kinemaster application for grade V elementary school students, it can be concluded that learning videos developed through the 4D development model (Define, Design, Develop, and Disseminate) have succeeded in producing learning media products that are feasible and effective in the learning process.

The results of validation conducted by material experts and media experts show that mathematics learning videos based on local culture are in the category of being very feasible to use. The material presented is in accordance with the curriculum, indicators, and learning objectives, and is delivered systematically and easily understood by students. From the media aspect, the learning video has an attractive appearance, good audio-visual quality, and is easy to use in learning.

In addition, the use of local culture-based mathematics learning videos assisted by the Kinemaster application has been proven to improve the learning outcomes of grade V elementary school students. This is shown by the increase in student learning test results and the achievement of learning completeness in accordance with the Minimum Completeness Criteria (KKM).

Thus, it can be concluded that mathematics learning videos based on local culture assisted by the Kinemaster application are feasible and effective to be used as an alternative mathematics learning media in elementary schools and can support the creation of learning that is contextual, innovative, and in accordance with student characteristics.

ADVICE

Based on the discussion of the results of the development of interactive video-based mathematics learning media in grade V of Elementary School, some of the suggestions submitted include:

1. In the development of interactive video-based mathematics learning media in grade V of elementary schools, it is hoped that it can have a positive impact on mathematics learning because the problems presented are in accordance with the actual reality, the discussion is close to the daily lives of students. It is also necessary to hold further research and

development regarding video media in other learning so that it can complement the needs of learning resources in schools.

2. The validation carried out in this development study shows that the video media designed is suitable for use in grade V of elementary school with an average score of 92.60 with a very valid category and is expected to be used as an alternative learning media in the form of video to teach fraction summation operations in grade V of elementary school.

BIBLIOGRAPHY

Afandi, Zainal, Yatmin Yatmin, Agus Budianto, et al. "Pelatihan Pembuatan Video Pembelajaran Menggunakan Aplikasi Kinemaster untuk Guru di SMAN 6 Kediri." *Jurnal Pengabdian Masyarakat (abdira)* 2, no. 1 (2022). https://doi.org/10.31004/abdira.v2i1.63.

Aliyyah, Rusi Rusmiati, Alfatia Amini, Iman Subasman, Endang Sri Budi Herawati, and Susan Febiantina. "Upaya Meningkatkan Hasil Belajar Ipa Melalui Penggunaan Media Video Pembelajaran." *Jurnal Sosial Humaniora* 12, no. 1 (2021). https://doi.org/10.30997/jsh.v12i1.4034.

Arsyad, Nurdin, N. Nasrullah, and Adinda Rezeky Anggriani. "Pengembangan Media Pembelajaran Matematika Berbasis Visual Basic Untuk Siswa Kelas VIII SMP." *Issues in Mathematics Education (IMED)* 5, no. 2 (2021). https://doi.org/10.35580/imed23848.

Bustanul Arifin and Abdul Mu'id. "Pengembangan Kurikulum Berbasis Keterampilan Dalam Menghadapi Tuntutan Kompetensi Abad 21." *DAARUS TSAQOFAH Jurnal Pendidikan Pascasarjana Universitas Qomaruddin* 1, no. 2 (2024). https://doi.org/10.62740/jppuqg.v1i2.23.

Dewi, Eva. "Potret Pendidikan di Era Globalisasi Teknosentrisme dan Proses Dehumanisasi." *Sukma: Jurnal Pendidikan* 3, no. 1 (2019): 93–116. https://doi.org/10.32533/03105.2019.

Efendi, Agus. "Implementasi Kearifan Budaya Lokal Pada Masyarakat Adat Kampung Kuta Sebagai Sumber Pembelajaran IPS." *Sosio-Didaktika: Social Science Education Journal* 1, no. 2 (2014). https://doi.org/10.15408/sd.v1i2.1263.

Hakim, Lukman. *Pemerataan Akses Pendidikan Bagi Rakyat Sesuai Dengan Amanat Undang-Undang Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional*. 2, no. 1 (2016).

Hakim, Lukman. "Pemerataan Akses Pendidikan Bagi Rakyat Sesuai Dengan Amanat Undang-Undang Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional." *EduTech: Jurnal Ilmu Pendidikan Dan Ilmu Sosial* 2, no. 1 (2016). https://doi.org/10.30596/edutech.v2i1.575.

Lelly Qodariah Dan Laely Armiyati. "Nilai-Nilai Kearifan Lokal Masyarakat Adat Kampung Naga Sebagai Alternatif Sumber Belajar." *SOCIA: Jurnal Ilmu-Ilmu Sosial* 10, no. 1 (2015). https://doi.org/10.21831/socia.v10i1.5338.

Lisgianto, Afifudin, and Huri Suhendri. "Pengembangan Video Edukatif Volume Bangun Ruang Berbasis Etnomatematika Makanan Tradisonal Via Youtube." *Jurnal Derivat: Jurnal Matematika dan Pendidikan Matematika* 8, no. 2 (2021). https://doi.org/10.31316/j.derivat.v8i2.1964.

Masinambow, Christo J. R., Jefrry S. J. Lengkong, and Viktory N. J. Rotty. "Inovasi Digital dalam Manajemen Sekolah: Meningkatkan Kinerja Pendidikan di Era Teknologi."

Academy of Education Journal 16, no. 1 (2025). https://doi.org/10.47200/aoej.v16i1.2686.

Mujiasih, Mujiasih, and Siti Alvi Pramesti. "Preferensi Platform Digital dan Intensi Penggunaan MOOCs dalam Pembelajaran Matematika Siswa SMA." *Nuris Journal of Education and Islamic Studies* 5, no. 2 (2025). https://doi.org/10.52620/jeis.v5i2.122.

Muqdamien, Birru, Umayah Umayah, Juhri Juhri, and Desty Puji Raraswaty. "Tahap Definisi Dalam Four-D Model Pada Penelitian Research & Development (R&D) Alat Peraga Edukasi Ular Tangga Untuk Meningkatkan Pengetahuan Sains Dan Matematika Anak Usia 5-6 Tahun." *Intersections* 6, no. 1 (2021). https://doi.org/10.47200/intersections.v6i1.589.

Norma, Norma. "Meningkatkan Hasil Belajar Peserta Didik Melalui Media Video Pembelajaran Pada Pembelajaran Jarak Jauh Di Masa Pandemi Covid-19." *SOCIAL : Jurnal Inovasi Pendidikan IPS* 1, no. 2 (2021). https://doi.org/10.51878/social.v1i2.697.

Okpatrioka Okpatrioka. "Research And Development (R&D) Penelitian Yang Inovatif Dalam Pendidikan." *Dharma Acariya Nusantara: Jurnal Pendidikan, Bahasa dan Budaya* 1, no. 1 (2023). https://doi.org/10.47861/jdan.v1i1.154.

Rikarno, Riki, Romi Maimori, and Tri Yuliani. "Mendesain Video Yang Menarik Dalam Pembelajaran Membaca Al-Quran Di Era New Normal." *Besaung : Jurnal Seni Desain dan Budaya* 6, no. 2 (2021). https://doi.org/10.36982/jsdb.v6i2.1710.

Supriyatin, Titin. "Persepsi Siswa Terhadap Penggunaan Quizizz dalam Pembelajaran Matematika." *Journal of Nusantara Education* 3, no. 2 (2024). https://doi.org/10.57176/jn.v3i2.88.