

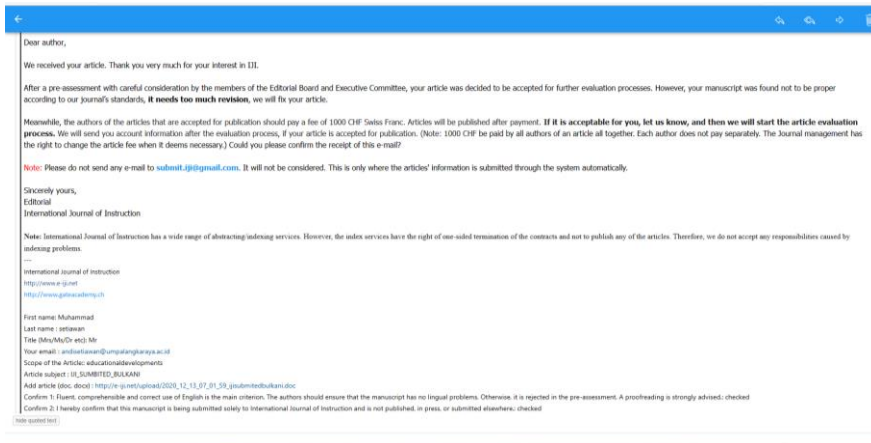
BUKTI KORESPONDENSI

Lampiran	Peer review proses korespondensi submit Publikasi Jurnal Ilmiah Internasional Bereputasi
Nama Jurnal	International Journal of Instruction
Index	Terindeks pada database internasional bereputasi dan berfaktor dampak (SCOPUS Q1)
Judul Jurnal	Development of Animation Learning Media Based on Local Wisdom in Elementary Schools during the Covid-19

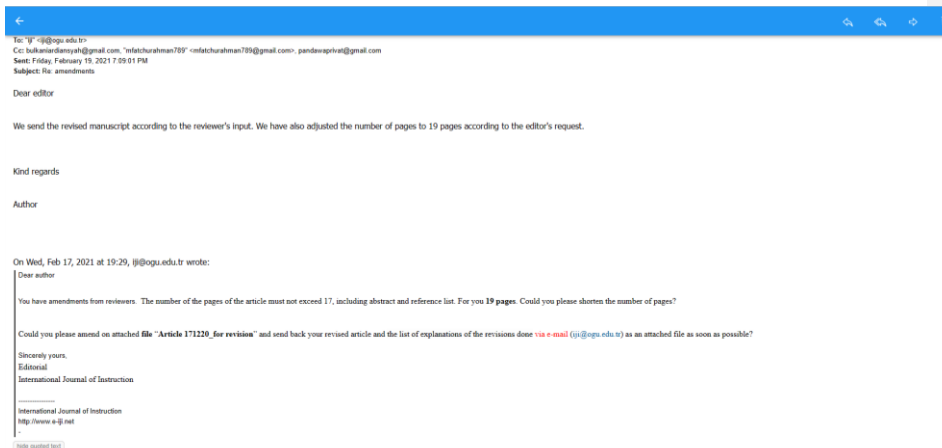
No	Item	Tanggal	Halaman
1	Submission article and acknowledgement of submission	26 Desember 2020	1
2	Review Process (Manuscript Needs Revision)	17 Februari 2021	2
3	Acknowledgement of revision	21 Februari 2021	2
4	Minor Amandement and acceptance	19 Maret 2021	24
5	Article Published	Januari 2022	24

Submitted

Review Process (Manuscript Needs Revision)



Acknowledgement of revision





International Journal of Instruction Article Evaluation Form

Mr. /Mrs.

It is to acknowledge you that the Executive Committee of International Journal of Instruction has decided that the article mentioned below would be reviewed by you. Thank you very much for your contributions.

Asim ARI
Editor in Chief

Name of the article: Development of Animation Learning Media Based on Local Wisdom in Elementary Schools during the Covid-19

After reviewing the attached article, please read each item carefully and select the response that best reflects your opinion. To register your response, please mark or type in the appropriate block.

Table with 3 columns: Question, Yes, Partially, No. Contains 15 evaluation questions regarding article quality.

- Evaluation:
- The article can be published as it is.
- The article can be published after some revision.
- The article must undergo a major revision before it can be resubmitted to the journal.
- The article cannot be published.

Would you like to see the revised article if you have suggested any revisions? Yes No

Please write your report either on this paper or on a spare paper.

REPORT

Table with 2 columns: Section of the Manuscript, Comments and Notes. Contains feedback on Title-Abstract-Summary and Introduction and Literature Review.



Research Methods	No comments. Ok
Research Findings	No comments. Ok
Discussion	It is recommended that authors elaborate on the success and outcomes of other successful mathematics learning models using similar formats. A comparison of how this study compares to other similar ones would be good.
Conclusion and Suggestions	No comments. Ok
References and Citation	Ok.
Language	It is highly recommended that the manuscript be proofread and edited to address the grammatical and syntax errors.
Other issues	Relook into term 'local wisdom' as it may cause confusion.



International Journal of Instruction Article Evaluation Form

Mr. /Mrs.

It is to acknowledge you that the Executive Committee of *International Journal of Instruction* has decided that the article mentioned below would be reviewed by you. Thank you very much for your contributions.

Asim ARI
Editor in Chief

Name of the article: Development of Animation Learning Media Based on Local Wisdom in Elementary Schools during the Covid-19

After reviewing the attached article, please read each item carefully and select the response that best reflects your opinion. To register your response, please **mark** or **type in** the appropriate block.

	Yes	Partially	No
Do you think the title is appropriate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the abstract summarize the article clearly and effectively?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the objectives set clearly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the issue stated clearly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the literature review adequate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the design of the research appropriate, and the exemplary, if any, suitable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the methodology consistent with the practice?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the findings expressed clearly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the presentation of the findings adequate and consistent?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the tables, if any, arranged well?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the conclusions and generalizations based on the findings?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the suggestions meaningful, valid, and based on the findings?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are the references adequate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the language clear and understandable?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is cohesion achieved throughout the article?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the work contributing to the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Evaluation:**
- The article can be published as it is.
 - The article can be published after some revision.
 - The article must undergo a major revision before it can be resubmitted to the journal.
 - The article cannot be published.

Would you like to see the revised article if you have suggested any revisions? Yes No

Please write your report either on this paper or on a spare paper.

REPORT

Section of the Manuscript	Comments and Notes
Title- Abstract- Summary	It is appropriate and clear.
Introduction and Literature Review	It understands easily.
Research Methods	There are many the steps of the research methods.
Research Findings	It expressed clearly.



Discussion	It presents adequate and suitable.
Conclusion and Suggestions	It is based on the finding but it should add more detail.
References and Citation	It is not adequate. It should be more citation.
Language	It is clear and understand.
Other issues	



International Journal of Instruction Article Evaluation Form

Mr. /Mrs.

It is to acknowledge you that the Executive Committee of *International Journal of Instruction* has decided that the article mentioned below would be reviewed by you. Thank you very much for your contributions.

Asim ARI
Editor in Chief

Name of the article: Development of Animation Learning Media Based on Local Wisdom in Elementary Schools during the Covid-19

After reviewing the attached article, please read each item carefully and select the response that best reflects your opinion. To register your response, please mark or type in the appropriate block.

	Yes	Partially	No
Do you think the title is appropriate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does the abstract summarize the article clearly and effectively?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the objectives set clearly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is the issue stated clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the literature review adequate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the design of the research appropriate, and the exemplary, if any, suitable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the methodology consistent with the practice?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the findings expressed clearly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the presentation of the findings adequate and consistent?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the tables, if any, arranged well?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the conclusions and generalizations based on the findings?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Are the suggestions meaningful, valid, and based on the findings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Are the references adequate?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the language clear and understandable?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is cohesion achieved throughout the article?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Is the work contributing to the field?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Evaluation:**
- The article can be published as it is.
 - The article can be published after some revision.
 - The article must undergo a major revision before it can be resubmitted to the journal.
 - The article cannot be published.

Would you like to see the revised article if you have suggested any revisions? Yes No

Please write your report either on this paper or on a spare paper.

REPORT

Section of the Manuscript	Comments and Notes
Title- Abstract- Summary	The use of the word: "during the Covid-19" in the title is unclear in context. Usually, the title of research and development describes the implementation of use clearly. Please include the variables used in this study so that their implementation is clear. Background on abstract is too long (there are some unimportant sentences). Please see the comments! Please see the comments! State the problem and goal in a clear, concise manner!
Introduction and Literature Review	The issue at the introduction is not clear enough. Please describe the introduction covering the following sections: problem statement, objectives, and literature review.



Research Methods	I do not find an explanation about how to implement the learning media that is being developed. Please describe the name of the data collection instrument and the stages of implementation that were carried out in this study.
Research Findings	Most of the data presented are the result of due diligence, and empirical evidence is lacking on the effectiveness of their implementation.
Discussion	I don't see any discussion here. It just review what is going on in the finding. The author need to come up with a reason why such a finding. Give an argument by stating the findings of previous studies
Conclusion and Suggestions	The conclusions do not explicitly describe the research findings. Please write down the following conclusions and suggestions based on the results of the research and discussion.
References and Citation	-
Language	There is an odd use of language. please correct the sentence well. A proofreading is strongly advised.
Other issues	-

Development of Animation Learning Media Based on Local Wisdom in Elementary Schools during the Covid-19

Covid-19 spreads throughout the world and affects all areas of human life. One of these fields is education. During the Covid-19 pandemic, teachers must be creative and innovative in contributing to online learning. We can make one effort to develop animation learning media based on local wisdom in online learning. This development carryout because elementary school students tended to pay attention to interesting things around them, high curiosity, rich in imagination. Seeing these students' characteristics, the researchers were interested in developing animated learning media based on local wisdom as one of the learning media during the Covid 19 pandemic. To achieve this, all researchers used a research and development approach to produce a product. This research model refers to the ADDIE model, which is a model that emphasizes the discovery of a model through the stages of Analysis, Design, Development, Implementation, Evaluation. The model trial subjects were 123 students from the Muhammadiyah elementary school Palangkaraya, the Panarung elementary school, the Pahandut public elementary school. This research results in innovative learning media based on local wisdom-based animation, which contains essential competencies, indicators, materials, display, button design, and local potential in Kalimantan Indonesia.

Keywords: Learning Solution, Media Animation, Local Wisdom, covid-19

INTRODUCTION

The educational process in Indonesia produces human resources who have cognitive, affective, and psychomotor abilities. Education facilitates students to develop themselves to be even better (Wiyarsi, 2020). Education in Indonesia has several levels of education, one of which is the primary school level. At the primary school level, the principles taught are basic. Therefore, at the stage of primary school education, it will significantly affect children's development. By looking at the changing times and current technological advances, education in Indonesia, especially elementary school teachers, must be innovative and creative using technology to improve students' quality (Hanif, 2020; Sarioğlu & Gırgın, 2020). The education process is carryout by implementing the curriculum so that learning runs systematically (Fujiawati, 2016). Knowledge is organizing and manipulating students' environment to encourage students to carry out the learning process (Fujiawati, 2016). Individuals can become qualified because of the quality education system (Atsani, rohmatun et al., 2020). The primary purpose of learning is to make students independent, understand social life, and organize themselves using effective means and quality education. One of the subjects in the elementary school curriculum is mathematics. Some students consider that Mathematics is a frightening specter because it requires a high enough understanding of reasoning, logic, and calculation rules that must be understood.

Mathematics learning at the elementary school level emphasizes understanding basic mathematics concepts and shows symbols (Nasir, 2018). Conveying mathematical concepts requires strategies, techniques, methods, and media to understand mathematics more efficiently. In addition to facilitating understanding, the use of practices, procedures, and media can make the learning process of mathematics more enjoyable. Learning mathematics is no longer a scourge of learning that is feared and even avoided by students. With current developments in technology and information, mathematics learning should be more creative, innovative, and fun so that learning outcomes and student learning achievements become better or increase (Aishah et al., 2020). Students' tendency to prefer to learn to use learning media such as the internet, animation and video makes it easier for them to understand mathematical concepts because mathematical ideas are prominent. The production of mathematical concepts is crucial because when the idea conveyed is wrong, it will make student reasoning or student logic wrong or wrong and vice versa. If the concept expressed is correct, then the student's reasoning or logic becomes correct, so that students easily develop into the next mathematical material.

The phenomenon in primary schools is that many students ignore the teacher's explanation in the teaching and learning process of mathematics. Students prefer to play with their friends; students have difficulty understanding the subject matter. From the weekly learning results obtained from the teacher, there were still many students who did not complete it. This phenomenon shows that mathematics learning is still not optimal. This condition can be due to the lack of strategies, techniques, methods, models, and media in the learning process. Exposure from the school, namely the principal and vice-principal in the field of curriculum, explains that teachers are still lacking in utilizing multimedia-based learning media. Most of the teaching teachers use books and pictures that cause mathematical concepts to be insufficient to support the

Commented [L1]: This title is only the limit of the prototype, it has not yet reached the implementation of the learning.

Commented [L2]: The relationship between this condition and animation media is unclear. Does this sentence still need to be maintained!

Commented [L3]: Sentence is too long, it should be simplified so that the problem and purpose are clear.

Commented [L4]: These findings just describe the media model. There may be a need for evidence of implementation from trials of media use on learning objectives

Commented [L5]: Explain where the concept goes!

Commented [L6]: Maybe this statement needs notation.

mathematics learning process. During the Covid pandemic, teachers must teach in virtual classrooms without reducing learning quality (Abdurrahman et al., 2019).

Mathematics is learning that presents abstract learning to be concrete. Therefore it is necessary to have learning media that can provide approval and come up with ideas. By conveying clear ideas through the media, students get clear reinforcement or support in understanding these abstract concepts. Media as a means to share information (Suryani, 2018; Tafonao, 2018). Media is a variety of objects, people, and the environment used to create conditions for information recipients to obtain information (Azhar, 2017). The media used in learning varies significantly according to the characteristics of these subjects. One of the interactive learning media is animation (Ngurah et al., 2020). The advantages of animation learning media are that they have an attractive appearance in moving images that can be combined with sound and can be operated independently by students to have an exciting and enjoyable experience (Alsubaie & Alabbad, 2020; Handayani & Ahmadi, 2020). Animated media for students is exciting and fun (Fatmawati et al., 2020). Besides, abstract concepts in mathematics learning are easy to present, display, and convey when using animation learning media.

The facts show that the teacher's skills in making animation are still lacking; the teacher rarely creates and applies various learning media. The reason is the lack of teacher skills in mastering technology. Creating or designing animation learning media requires skills in both design concepts and animation making skills. Teachers should always hone and improve their skills following technological advances (Aydin & Onsekiz, 2020). Learning media that take advantage of advances in information technology is one form of practical online learning (Andini & Supriadi, 2018; Yusuf et al., 2018). Media facilitates teachers so that they can design a better education (Poerwanti & Istiyati, 2019). The animation will explain students from a more exciting perspective (Fauzy & Revita, 2020).

They made animation learning media use various software (software) operated via a computer, laptop, or android. Much available software products for creating or designing animation and one of this software is Macromedia flash. In Macromedia, flash software provides various features to design or create animation (Masykur et al., 2017; Utomo et al., 2020). Macromedia flash is easy to use, and there are many tutorials for making animation in the form of books, modules, and videos. Macromedia Flash is an application operated using a computer; this application can present abstract concepts into the concrete through animated audiovisual displays.

METHOD

Research Design and Flow

This study uses research and development design. This design will produce innovation (Irianti et al., 2020; Kholidah et al., 2020; Nainggolan et al., 2020; Şilbir et al., 2020). The intended creation is animation learning media. The design used is the ADDIE model with the stages of analysis, design, development, implementation, and evaluation (Sofyan et al., 2020). The following are the stages of the ADDIE model development research:

Commented [L7]: Explain where the concept goes!

1. The analysis. The researcher digs up data about the real conditions related to learning facilities, teachers, students, and the ongoing learning process. The observations from the description show that: The curriculum used in schools is the 2013 curriculum. Based on the observations' results, the studied mathematical material is related to the perimeter and area of a square, long square, and triangle. The learning media used by the teacher during the observation were books and pictures. Researchers found that many students played and chatted during the teaching and learning process. The learning outcomes of many students are still below the average value of learning completeness.
2. Design. Researchers found a unique mathematics learning design model as a solution to the problem analysis. Mathematics requires reasoning and logic for abstract concepts. The animation will help make it easier to understand abstract concepts to be concrete. Furthermore, the researcher designed and presented a flat shape with its simulation to explain/show conceptual material with animation.
3. Development. After going through the design stage, the researcher then enters the development process. This developer's step is designing the model systematically as needed (Arslan et al., 2020). At the development stage, animation learning media is still in prototype form and cannot test because it has not received validation from media and field experts. The development carried out by researchers is to create a learning media model based on local wisdom using Macromedia flash software.
4. Implementation: The model implementation stage is a limited trial phase in three schools that have been determined by the researcher.

Commented [L8]: Needs an explanation of: purpose and stages of implementation

- Evaluation: The evaluation stage is carried out based on the media implementation results in the learning process. The assessment was carried out based on the products. The evaluation is carried out based on the students' pretest and post-test results obtained from measurements made before and after.

Population and sample

This study's population were all students at Muhammadiyah elementary school Palangkaraya with 308 students, 239 students at Pahandut Public Elementary School, 355 students from Panarung Public School, and 902 total population. As for the number of research samples, 123 students divide as follows.

Table 1

Research Sample

No	School	Class	Sample
1	Muhammadiyah Palangkaraya Elementary School	IVa	20
		IVb	21
2	Pahandut State Elementary School	IVa	22
		IVb	19
3	Panarung State Elementary School	IVa	20
		IVb	21
TOTAL			123

The sample selection is basing on the same class and level in each existing primary school. Sample selection using strata random sampling intends to maintain the quality of existing research data.

Instrument

The data collection instruments used were observation, validation sheets, FGD sheets, and tests. Statements use to collect data on the state of the school and problems that occur at school. The validation sheet intends to assess the model's suitability with the field's needs to adjust to its needs. Expert and practitioner validation sheets also prepare to know the model's feasibility from aspects, namely, the objectives, rationale, function, and role of the model to find out future improvements. FGDs conduct to test the feasibility of the models compiled by researchers. The components of the model in the FGD and subjected to validation tests were part of the essential competencies, indicators, materials, design of displays and buttons, and local potential in Indonesian Kalimantan. The research test here is a multiple choice to measure students' learning outcomes before and after treatment using animation learning media

Commented [L9]: Explain! What tests and what do you want to measure?

Data analysis technique

Learning media is considered feasible by being analyzed from the model validation analysis results, and the FGD carries out. Validation is analyzed descriptively to better describe the model after getting input from experts and practitioners in the field. Quantitative data analysis was obtained from multiple-choice test results and was used to determine learning outcomes between before and after receiving treatment (Reilly, 2020). The multiple-choice instrument consists of 11 multiple choice items. Research is said to have standard data or not by conducting normality tests and homogeneity tests to see whether the research sample is homogeneous or not

RESULTS

Results of the development of animation learning media

This research will produce a model by applying the ADDIE model as follows

Analysis

Curriculum analysis, based on observations made, the curriculum applied in elementary schools in the 2013 curriculum. The 2013 curriculum is thematic, wherein there are several subjects at the time of observation in grade IV. The theme studied is theme 4, namely various jobs, sub-themes 1, namely the types of work, and enter into learning 2. Some necessary competencies and indicators must achieve in learning. Material Analysis, based on observations, the learn being studied in mathematics. The field analysis results show that the need for a model in the field is related to subjects, particularly on the flat shape material.

Design

In this design stage, it is based on the results of the analysis conducted by the researcher. From the results of the research, the researcher designed a model. The model includes necessary competencies, indicators, materials needed for flat buildings, display design, interactive button design, back sound, and additional local potential in the form of other knowledge about the local potential in Central Kalimantan. The model design is as follows:

Table 2

Design Model

Intro (Opening/Initial Display)	This display will present in animation, learning media titles, interactive buttons to go to the next menu, and back sound (background music). This display has a function as a media opening display. It has increased student enthusiasm by displaying an attractive animation and back sound to improve student enthusiasm for learning. This intro display has an essential role because it is the first impression witnessed by students; therefore, the intro's appearance is made as attractive as possible to create a pleasant image to stimulate students to follow the subject matter
Menu 1	In this display, there is an animation of a child who will become a "friend" during learning media. At this stage, the child's energy introduces himself; then he explains the media's function, namely, learning about flat shapes and giving the enthusiasm to participate in learning. In this view, several interactive buttons have tasks according to their button names. When the button is pressed/clicked, it will display the material according to the button name. The buttons on this display are the necessary competency buttons and indicators, the square area button, the rectangular area, the triangle area, and the shape's perimeter. In this display, there is also a back sound in the form of musical instruments
Menu 2	This display is slightly different from the previous menu display because additional local potential buttons and practice questions buttons. This local wisdom button functions as other knowledge about local potential, especially the local potential of Central Kalimantan in knowledge about hornbills. This local potential included gaining an understanding of local wisdom found in Central Kalimantan. Besides, another function is as an interest to provide entertainment in the learning process
Basic competencies and indicators	In this display, the flat shape subject matter's essential competencies and indicators that must achieve in learning will display. This display's function is to determine the learning objectives to conduct to become directed and systematic. In this display, there are several buttons, namely the home button and volume
Square area	In this square area view, an illustration of the problem related to the square will present. After seeing the problem's description, students will invite to find a way to solve the problem. There is a simulation button; this button presents the stages/process of solving a square area's issues.
Square area simulation	The display in this square area simulation is the stage of solving the square area's problems. The concept of finding a formula for the area square with the help of animation will present so easily understood by students. In this view, there is a back sound in the form of a <i>sape</i> instrument (a traditional eastern Kalimantan musical instrument). Besides, there is an interactive button, namely the home button, which functions towards menu 2, then the next button to continue the next stage; otherwise, the back button repeats the previous step
Rectangular area	In the rectangular area view, an illustration of the problems related to the rectangle will present. Furthermore, after the students watched the description, the students were invited to solve the problem. In this display, a simulation button functions to display a simulation of solving research problems.
Rectangular simulation	The display in the rectangular area simulation is the stage/process of solving the rectangle area's problems. In this view, the concept of finding a formula for area rectangle will be presented with the help of animation so that the idea can be witnessed and easily understood by students. The process of finding the formula is carryout in stages. In this view, there is a back sound in the form of a <i>sape</i> instrument (a traditional eastern Kalimantan musical instrument). There is also an interactive button on this display, namely the home button, which functions towards menu 2. The next button is to continue the next stage; otherwise, the back button to repeat the previous step.

The area of the triangle	The view triangle area is almost the same as the previous view of the square and the rectangle area. Still, the difference is that an illustration of problems related to the triangle will present in this view. Furthermore, after the students watched the example, the students were invited to solve the problem. In this display, a simulation button functions to display simulated problem solving related to the triangle area.
Triangle simulation	The display in the simulation of a triangle area is the stage/process of solving a triangle area problem. In this view, finding a triangle with animation will be presented as a concept that students can easily witness and easily understand. The process of finding the formula is carryout in stages. In this view, there is a back sound in the form of a sape instrument (a traditional eastern Kalimantan musical instrument). There is also an interactive button on this display, namely the home button, which functions towards menu 2. The next button is to continue the next stage; otherwise, the back button will repeat the previous step
Surround a flat shape	Furthermore, there is an illustration of the problem regarding the shape's perimeter in the perimeter view. Then students will be invited to solve the problem by finding the formula for the frame of a flat body. There is a simulation button on this display, wherein the simulation shows an animation displaying the circumference concept. After watching the travelling concept animation, the next button functions to explain the idea again to conclude travelling
Exercises	In this view, we will also discuss how to solve these problems in stages. In this display, a home button functions to go to menu 2, the next button to go to the next step, and a back button to repeat the previous stage
Local wisdom	In this display of local potential, knowledge of local wisdom found in Central Kalimantan will be presented, especially about hornbills; here, a video and a brief explanation of hornbills will show. This display serves to increase students' insight into local wisdom and intervention in the learning process to make learning more enjoyable. Besides that, the rhythm of the essential music in this model also uses typical Dayak music

Development

After carrying out the design process, they are then entering the development stage, namely making a model based on the design results. In this process, the researcher collected several components needed for the development stage. These components are as follows:

A laptop is a device in the form of a mini-computer that can carry anywhere. Macromedia flash software, which is software that is installed (installed) on a laptop. Images, namely images collected, were created and designed by researchers to develop animations, backgrounds, and interactive buttons—Background (background music), which manages several musical instruments, especially *sape* musical instruments. The *sape* instrument is a musical instrument that plays with traditional instruments from East Kalimantan. The purpose of selecting *sape* musical instruments is to raise local wisdom and relaxation music during the learning process—sound effects, unique sounds that will later use as button sound effects. Then there are the sound effects used by researchers as children's animated voice actors. Text, namely, creating, arranging, and designing text, words, and sentences in the model.

Furthermore, the modeling stage uses Macromedia flash software. In making this, the researcher creates a model tailored to the design of that design. Researchers make several flash files; flash files are product files produced by Macromedia flash when a product has been finished or stored; in these products, there can be animations, images, text, sound, and a combination of them. In the modeling stage, there are several techniques made by researchers, such as load movies, namely moving from one flash to another using an action script that install/programmed on a specific button. Besides, there is also a frame by frame technique, which moves from one frame to a flash file.

After the model finish, the next step is the validation process and the model's front group discussion. Validation carries out to determine the feasibility of the model. The validation process was carryout by researchers involving 8 class teachers and two media experts. The results of the model validation are as follows:

Table 3


Validation Results of the Animation Learning Media Model

Name	Score	Assessment	Repair
Dedy Setyawan, M.Pd	71	Very good	Reduce the use of colors that are too varied in the background
Dr. Chandra Anugerah P., S.Kom	68	Very good	Improve the appearance of the intro to make it more attractive. Change the background color of the writing column
Monika, S.Pd	56	good	This model can use because it can increase student motivation in learning
Utami Indah Paskawati, S.Pd	52	good	This model is good because it can help students' ability to understand flat shape material. This model is better introduced to schools to increase teachers' insight into learning strategies
Letha Luber, S.Pd	71	Very good	Pay attention to the school's facilities and infrastructure in applying this model, improvements to words and sentences in the model.
Nurminah, S.Pd	56	good	This model needs to be socialized to educators to broaden the educators' insight.
Linda Panjaitan, S.Pd	54	good	This model is excellent; it is necessary to pay attention to its facilities and infrastructure in its application.
Masrawan, S.Pd	64	good	This model is in a suitable category because learning will be more fun for students.
Adhyaksi Waty, S.Pd	64	good	This model is exciting and can make the learning atmosphere more interactive
Ulia Ulfah, S.Pd	67	Very good	In its application, it is necessary to pay attention to school facilities and infrastructure.
Total	623	Average 62,3	

After calculating the model validator's average score, the validator's mean score was 62.3. It can conclude that the learning media model is in a suitable category but requires a little improvement before it uses following the comments, suggestions, and gains from the validator. For this reason, a front group discussion also held related to the model development; from the results of the front group discussion with ten practitioners, some improvements obtain, namely as follows:

Table 4

Results of the FGD on the animation learning media model

No	Model before revision	After the revised model
1		
2		
3		

No	Model before revision	After the revised model
4	<p>Dapatkah kalian membantu Pak tukang menghitung berapa banyak ubin yang ia butuhkan untuk menutupi lantai kamar jika panjang kamar 3m dan lebarnya 2m sedangkan ukurannya memiliki panjang 1m dan lebarnya 1m</p>	<p>Dapatkah kalian membantu Pak tukang menghitung berapa banyak ubin yang ia butuhkan untuk menutupi lantai kamar jika panjang kamar 3m dan lebarnya 2m sedangkan ukurannya memiliki panjang 1m dan lebarnya 1m</p>
5	<p>Pak tani memiliki kebun dan dia ingin membangun sebuah pagar mengelilingi kebunnya, pagar yang ia bangun berbentuk persegi panjang dengan panjang 5m dan lebarnya 3m, dapatkah kalian membantu Pak tani berapa pagar yang ia bangun</p>	<p>Pak tani memiliki kebun dan dia ingin membangun sebuah pagar mengelilingi kebunnya, pagar yang ia bangun berbentuk persegi panjang dengan panjang 5m dan lebarnya 3m, dapatkah kalian membantu Pak tani berapa pagar yang ia bangun</p>
6	<p>Berapa tukang ingin memperbaiki atap yang berbentuk persegi, dengan panjang alas 5m dan tinggi 5m, dapatkah kalian membantu Pak tukang berapa atap yang diperlukinya</p>	<p>Berapa tukang ingin memperbaiki atap yang berbentuk persegi, dengan panjang alas 5m dan tinggi 5m, dapatkah kalian membantu Pak tukang berapa atap yang diperlukinya</p>
7	<p>Ditanya pagi Adi berlatih bersepeda mengelilingi sebuah lapangan berbentuk panjang lapangan 60m dan lebarnya 40m, berapa jarak yang dilalui Adi mengelilingi lapangan tersebut dalam 3 kali putaran</p>	<p>Ditanya pagi Adi berlatih bersepeda mengelilingi sebuah lapangan berbentuk panjang lapangan 60m dan lebarnya 40m, berapa jarak yang dilalui Adi mengelilingi lapangan tersebut dalam 3 kali putaran</p>

The results of the FGD with several practitioners showed an improvement in terms of appearance, namely, the use of color must be able to steer clear contrasts so that it is easy to read for students. After improving the developed model, developing an animation model based on local wisdom is created. This last model consists of several components; the following is the final model component for the animation based on local wisdom.

Table 5

Development Model of animation learning media

Initial model	Development model
Initial view	Initial view
In this model, the initial display is a background image of a whiteboard and learning equipment and the animation media title. This display will display for	In this developed model, the initial appearance is in the form of a study table background, study equipment, a title, and an additional animation of a flat shape that can

Initial model	Development model
about 5 seconds, then immediately switches to the menu display automatically.	change from a square, a triangle, and a circle. In this view, there is a development in adding a back sound or background music. In this view, an additional development form start button functions as a button to go to the menu

Menu display	Menu display
	

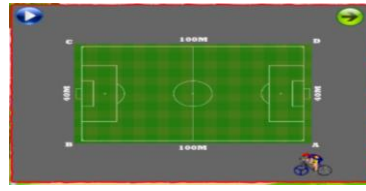
In the menu display, the introductory part shown in the form picture batik cloth with some questions regarding the observation results of the batik image

In this display, an animation will show, namely a child who introduces the animation media related to the material to teach.

View perimeter of the rectangle	View perimeter of the rectangle
	

This view presents a question about a rectangular image. The image that is displayed is an animated line that forms a rectangular shape. Then after watching the animation, students are invited to calculate the circumference of the rectangle

In the developed model view, discussing a flat shape's circumference will first present a problem and calculate a perimeter. There is a simulation button functions to go material will discuss how to calculate the rim, as below:



In this display, an animation of a person cycling around a soccer field in a rectangular shape will present; then, students invite to calculate how much distance to go around the soccer field for one round. In this view, students expect to understand the concept of traveling.

Rectangular area view	Rectangular area view
	

In this view, you will immediately present with how to calculate the area of a rectangle. This view also showed an animation in a rectangular image divided into small columns that ultimately divide the

In the model developed when entering the material area, a problem related to a rectangle area related to everyday life will present. In this display, a simulation

Initial model

Development model

rectangle. Students are invited to count all the small columns that divide the rectangle.

button serves to illustrate discussion material regarding solving the rectangle's problems.



In this view, an explanation rectangle is presented, what is meant by the rectangle's width and length. There is also a next button that functions to the next display, and the back button functions to the previous show. If we click the following button, it will display a discussion on how to calculate the area of a rectangle, as below



In this view, a discussion calculates the rectangle area present to find the formula for a rectangle's space. In this display, background music adds in a sape instrument (a Dayak tribal musical instrument), which can be adjusted to a large or small volume, aiming to make the learning process less tense. The next development is the addition of material, namely material regarding the area of a square, as below:



The material developed next is about the area of a triangle.

Initial model

Development model

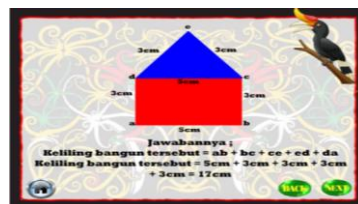


Exercise view

Exercise view



In this exercise view, there are several practice questions. The type of item is a form; students invite to choose one of the answers, then put the answer in the question column provided, then click check to see the results.



In the developed model, there are exercises. In this part of the activity, students invite to solve some of the questions and discuss them.

Some of the developments in this study are to display the initial media model. Internet access requires hardware, for example, a laptop or an Android cellphone, then open the Ministry of Education and Culture's learning resource site or website, then look for mobile media titles and rectangular areas for grade 4 Elementary school semester 2. After being developed, if they want to use the media, they do not need internet access; users only need files that have been saved on a laptop or android phone and then open/run. In the initial model, the way of presenting material without going through the contextual approach to students 'daily activities, but in the developed model, there is a contextual approach process in the form of problems that

often occur in students' daily lives. Besides that, at the discussion/simulation stage in the developed model, the process is presented. Sequential and gradual. The model developed by the media is increasingly attractive with the addition of sound. Sound effects on buttons and background music and various forms of animation and additional knowledge in local wisdom knowledge such as Sape instrument music and video hornbills are different from the initial model, which tends to silent (without sound). It creates a new learning experience for students using the model that has developed.

Commented [L10]: Is this statement right in this section? Doesn't this statement need the support of empirical evidence from your study?

Implementation

Furthermore, after making improvements to the model, the model becomes a final model that is ready to be tested, limited to class IV. In the trial process, the researchers used the pre-experimental pretest and post-test one-group design methods. Before conducting the test in class IV, the researcher validated the items, namely looking for valid questions by validating the items. After doing calculations with the SPSS application's help, the researcher found 11 right questions from the 20 things whose validity had sought. During the implementation, the researcher presented the material using animation media. Presentation of flat shape material is carried out in stages starting from conveying essential competencies and learning indicators. Every discussion will always start by presenting a square, rectangle, triangle, and shape perimeter. After submitting the problem, a simulation will give, namely a depiction of a system or process in solving the problems that occur, so that it will produce a conclusion in the form of formulas in determining the area of a square, rectangle, triangle, and perimeter of the shape.

Evaluation

The final stage is the trial results evaluation process to determine the effectiveness of animation learning media carried out by researchers in class IV. This study's initial animation model is a circumference and rectangular area of the animation learning media model for grade 4 semester two elementary school students on the Ministry of Education and Culture's learning resources website. The reliability level of the Cronbach Alpha Based value is 0.718, which means it has high reliability. Furthermore, after getting the pretest result data, the researcher conducted a normality test. Kolmogorov Smirnov normality test results obtained significance (Sig) of $0.086 > 0.050$; thus, pretest data distribution normal. For the post-test normality test, researchers used the Kolmogorov Smirnov test, a normality test often used for large samples and small sample sizes. Based on the post-test data distribution test results using the Kolmogorov Smirnov normality test, the Sig (significance) value was $0.61 > 0.050$. Thus, it can conclude that the distribution of post-test data normally distributed. The following is a graph of the calculation of the analysis of the pretest and post-test scores in the development of an animation learning media model based on local wisdom on the flat shape material in class IV.

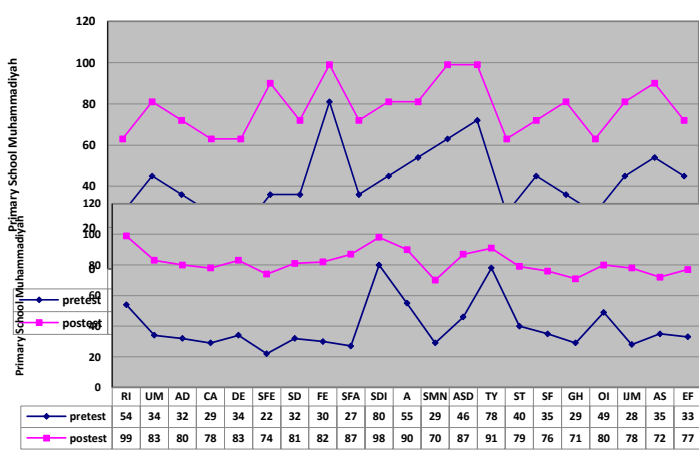


Figure 1

The calculation of the pretest and post-test scores of students class IVa

Figure 2

The calculation of the pretest and post-test scores of students class IVb

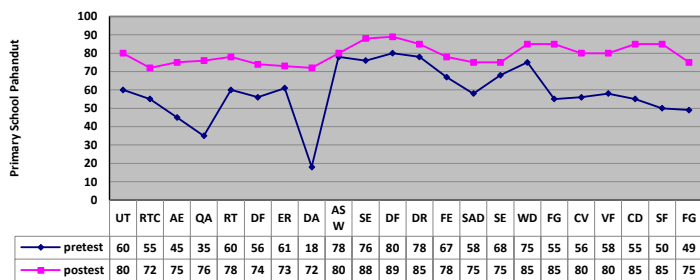
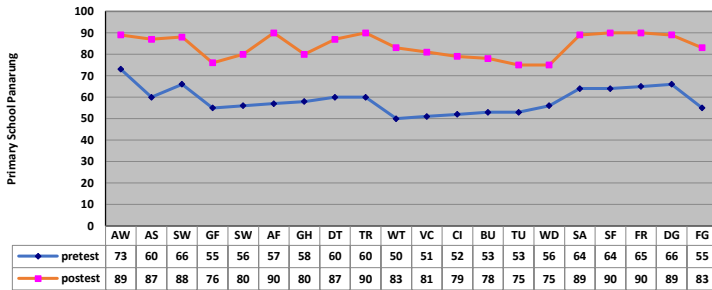


Figure 3

The calculation of the pretest and post-test scores of students class IVa

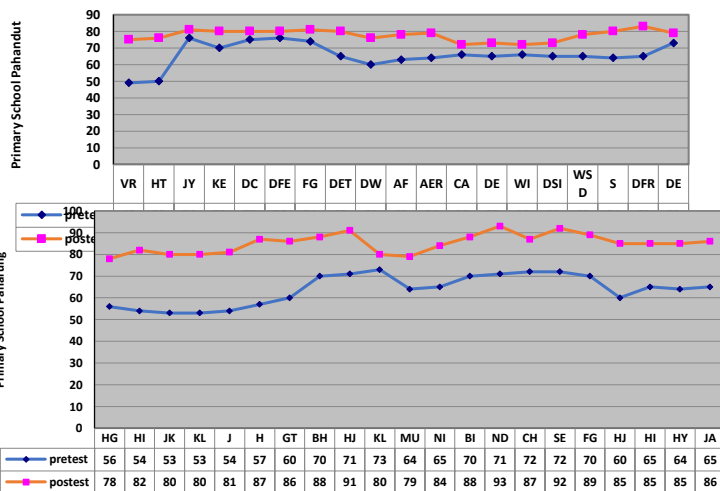


Figure 4
The calculation of the pretest and post-test scores of students class IVb
Figure 5
The calculation of

the pretest and post-test scores of students class IVa

Figure 6

The calculation of the pretest and post-test scores of students class IVb

Paired sample t-test

The paired sample t-test aims to determine whether there is a difference in the two paired samples' mean. The purpose of two paired samples is the same sample/subject but has two different data. In this study, the sample was all grade IV students from three schools totaling 123 people, while the two data were the pretest data and the post-test data. The results of the calculation of the paired sample t-test using SPSS obtained the sig value. 2-tailed 0.000 $< \alpha = 5\%$ or 0.050, it can be concluded that there is a significant difference between students' mathematics learning

Commented [L11]: The hypothesis to be tested is unclear!

Commented [L12]: This sentence deserves to be presented in the methodology section

Commented [L13]: It might be clearer if the t-test scores were presented before the level of significance

outcomes in the pretest before using animation learning media and students' post-test results after using animation learning media or hypothesis H_a is accepted.

Discussion

As one of the countries affected by Covid-19, Indonesia must adjust to the new normal conditions to carry out all activities correctly. The education sector is one of the fields that must be able to adapt to these conditions. Education plays a role in developing literacy, scientific methods, scientific concepts, and science (Dewi et al., 2019). As part of education, teachers try to adapt to new conditions during the covid-19 period. These efforts can be implementing innovative and creative learning that emphasizes aspects of information technology (Leasa et al., 2020). Advances in information technology currently positively impact education developments (Neta et al., 2020). Efforts that can do are designing innovative learning media in animation based on local wisdom. This learning media will help students make it easier to capture the contents of the lessons delivered by the teacher (Haviz et al., 2020). Animated learning media will train students to achieve learning goals well by creating innovative products (FitriaSari et al., 2020). The learning media developed emphasizes animation and local wisdom as part of learning. The animation chose because it saw students who had high imagination and curiosity during elementary school age. Students' curiosity is also great with the development of this learning media; it will increase interest and learning outcomes to achieve satisfactory results. The researchers conducted development research with the ADDIE model to produce this media, which consisted of the analysis, design, development, implementation, and evaluation stages.

The development results are in animation learning media products based on local wisdom used in mathematics learning activities. Mathematics for students is one of the subjects that students do not like. Many students complain and saturate with rigorous learning. Students at the elementary school level tend to prefer things that are fun and new. Animation is one of the most useful media in various fields (Amri et al., 2020). This animation learning media will further understand students to become more active and have a better interest in learning, especially mathematics.

The flow of developing animated learning media based on local wisdom is starting with curriculum analysis, analysis of the subject matter, analysis of learning media, analysis of the learning process, analysis of learning media, and analysis of learning outcomes. The second stage is designing and conceptualizing a learning media based on the results of the investigation. The development stage is collecting the necessary components and making animation learning media using Macromedia flash software. After making the media, the media is tested for its feasibility by the validator to obtain a final model in animation learning media ready to be tested. The next stage is a product trial or implementation. The results of the Macromedia flash animation learning media's effectiveness test on the flat shape material in class IV are said to be effective. The paired sample t-test results on the pretest and post-test results show the sig value of the paired-sample t-test, $0.000 < \alpha = 5\%$, or 0.050. Previous education research found that one of the factors influencing education quality was students' problem-solving abilities and academic achievement (Suratno et al., 2020). This study's results are also supported by other research that states that animation in learning positive response to teachers' learning outcomes (April & April 2020). Animation is a part of multimedia, which is very popular in the digital era (Sukmana, 2018).

The teacher made innovative learning media innovations to solve learning problems during the Covid-19 pandemic. Learning media is an intermediary or introduction to messages from senders to recipients (Siburian et al., 2020). The treatment results prove that animation learning media based on local wisdom contributes to learning mathematics. Students have a better interest in learning, and academic achievement has experienced significant changes for the better. The teacher becomes very helpful with this media's existence so that the teacher does not have to explain verbally to students. However, the results of this development are only limited to mathematics subjects in building materials. There is still much need for development in other materials so that learning during the Covid-19 pandemic can get good results.

Conclusions

Teachers have an essential role in learning during the Covid-19 pandemic, namely, with efforts to develop innovations in subjects used so that the learning process can still run well. This research provides an in-depth understanding for readers to compile a creative and innovative learning media. The development of the model that has carryout shows changes in learning outcomes for students. The development of this animated learning media has made a positive contribution to education during the Covid pandemic because teachers and students face tough challenges, especially in the online learning process.

Acknowledgments

Commented [L14]: The description in this section may be expanded by presenting advantages and disadvantages and confronts the findings of important studies with the results of previous studies.

Commented [L15]: Conclusions are not clear. Conclusion statements should be stated firmly based on the results of the research and discussion.

Our gratitude goes to The Muhammadiyah University of Palangkaraya and the Institute for research and community service, who have supported lecturers to conduct research and publish reputed international journals.

References

- Abdurrahman, A., Setyaningsih, C. A., & Jalmo, T. (2019). Implementating multiple representation-based worksheet to develop critical thinking skills. *Journal of Turkish Science Education*, 16(1), 138–155. <https://doi.org/10.12973/tused.10271a>
- Aishah, S., Bani, S., & Nordin, N. M. (2020). *Using YouTube as Learning Tool for Children : A Case Study of Kuntum Animation YouTube Channel*. 2(2), 43–53.
- Alherz, A., Tsuruta, N., & Kondo, K. (2020). Multiple-character Animation Systems for Children at Different Educational Stages. *International Journal of Asis Digital Art & Design*, 1–7.
- Alsubaie, S. S., & Alabbad, A. M. (2020). *The Effect of Japanese Animation Series on Informal Third Language Acquisition among Arabic Native Speakers*. 13(8), 91–119. <https://doi.org/10.5539/elt.v13n8p91>
- Amri, I., Amiruddin, R., Palutturi, S., & Mallongi, A. (2020). *The Influence of Disaster Counseling with Animation Video on Preparednes Students in Elementary School in Palu*. 1302–1306.
- Andini, D., & Supriadi, N. (2018). Media Animasi Menggunakan Macromedia Flash Berbasis Pemahaman Konsep Pokok Bahasan Persegi dan Persegi Panjang. *Desimal: Jurnal Matematika*, 1(2), 149. <https://doi.org/10.24042/djm.v1i2.2278>
- Arslan, R., Kofoğlu, M., & Dargut, C. (2020). Development of augmented reality application for biology education. *Journal of Turkish Science Education*, 17(1), 62–72. <https://doi.org/10.36681/tused.2020.13>
- Atsani, rohmatun, N., Asrowi, & Tr, M. (2020). The effectiveness of value clarification technique (VCT) and problem-based learning (PBL) models on social problem-solving skills viewed from emotional intelligence. *Elementary Education Online*, 19(20), 1751–1767. <https://doi.org/10.17051/ilkonline.2020.734977>
- Aydin, G., & Onsekiz, Ç. (2020). *The effects of guided inquiry-based learning implementations on 4 th grades students and elementary teacher ; a case study 1*. 19(3), 1155–1184. <https://doi.org/10.17051/ilkonline.2020.727298>
- Azhar, A. (2017). *Media Pembelajaran*. Rajawali Pers.
- Dewi, N. R., Magfiroh, L., Nurkhalisa, S., & Dwijayanti, I. (2019). The development of contextual-based science digital storytelling teaching materials to improve students' critical thinking on classification theme. *Journal of Turkish Science Education*, 16(3), 364–378. <https://doi.org/10.12973/tused.10288a>
- Fatmawati, K., Arief, Y. S., & Kurnia, I. D. (2020). *The effect of animation video modeling on mother ' s ability in preparing toilet training in toddler*. 1581(July 2019), 1575–1581.
- Fauzy, R., & Revita, I. (2020). " MUHSIN AND MAHASIN " AND ITS IMPLEMENTATION IN EDUCATION AND TEACHING. 5(1). <https://doi.org/10.22216/jcc.2020.v5i1.4150>
- FitriaSari, Oktariana, D., & N, S. (2020). Creativity of mathematics education students in producing instructional media-based on macromedia flash through blended learning Creativity of mathematics education students in producing instructional media-based on macromedia flash through blended learni. *Journal of Physics Ceonference Series*, 1521, 8–13. <https://doi.org/10.1088/1742-6596/1521/3/032085>
- Fujiawati, F. S. (2016). Pemahaman Konsep Kurikulum dan Pembelajaran dengan Peta Konsep Bagi Mahasiswa Pendidikan Seni. *Jurnal Pendidikan Dan Kajian Seni*, 1(1), 16–28.
- Handayani, S., & Ahmadi, F. (2020). *The Effectiveness of Animation Film Media to Know Ability Mathematical Concept of Early Childhood Based on Gender*. 9(2), 161–167.
- Hanif, M. (2020). *The Development and Effectiveness of Motion Graphic Animation Videos to Improve Primary School Students ' Sciences Learning Outcomes*. 13(3).

- Haviz, M., Maris, I. M., Adripen, Lufri, David, & Fudholi, A. (2020). Assessing pre-service teachers' perception on 21st century skills in Indonesia. *Journal of Turkish Science Education*, 17(3), 351–363. <https://doi.org/10.36681/tused.2020.32>
- Irianti, R., Darmono, & Mahrudin. (2020). Development of Biology Learning Media Based on Macromedia Flash in the Era of. *International Conference on Educational Research and Innovation*, 401(Iceri 2019), 57–60.
- Kholidah, N., Yusuf, A., Yuni, S. A., Margono, H. M., & Rahmatika, E. (2020). *The effectiveness of Animation-Cognitive Behavior Therapy (A-CBT) on Self-efficacy to Prevent Sexual Abuse among Children in Primary School of Surabaya City*. 3(3), 411–417. <https://doi.org/10.35654/ijnhs.v3i3.240>
- Leasa, M., Corebima, A. D., & Batlolona, J. R. (2020). The effect of learning styles on the critical thinking skills in natural science learning of elementary school students. *Elementary Education Online*, 19(4), 2086–2097. <https://doi.org/10.17051/ilkonline.2020.763449>
- Masykur, R., Nofrizal, N., & Syazali, M. (2017). Pengembangan Media Pembelajaran Matematika dengan Macromedia Flash. *Al-Jabar : Jurnal Pendidikan Matematika*, 8(2), 177. <https://doi.org/10.24042/ajpm.v8i2.2014>
- Nainggolan, B., Hutabarat, W., Situmorang, M., & Sitorus, M. (2020). Developing innovative chemistry laboratory workbook integrated with project-based learning and character-based chemistry. *International Journal of Instruction*, 13(3), 895–908. <https://doi.org/10.29333/iji.2020.13359a>
- Nasir, M. (2018). *Design and Development of Physics Learning Media of Three Dimensional Animation Using Blender Applications on Atomic Core Material*. 2(2), 23–32.
- Neta, F., Yulius, R., Fajri, M., & Nasrullah, A. (2020). *Effectiveness of Using 2D Animation Video with Live Shoot Motion Graphic*. 423(Imc 2019), 119–127.
- Ngurah, G., Pramana, Y., Sudana, O., Made, G., & Sasmita, A. (2020). *3D Animation Learning Media Regarding The Teachings Of Kanda Pat Sari*. 4(3), 1–5.
- Poerwanti, J. I. S., & Istiyati, S. (2019). Context-based evaluation materials in elementary teacher education program: A developmental research. *Journal of Turkish Science Education*, 16(3), 325–335. <https://doi.org/10.12973/tused.10285a>
- Reilly, P. (2020). The development of student motivation to learn english at a university in Mexico. *International Journal of Instruction*, 13(3), 401–416. <https://doi.org/10.29333/iji.2020.13328a>
- Sarioğlu, S., & Girgin, S. (2020). The effect of using virtual reality in 6th grade science course the cell topic on students' academic achievements and attitudes towards the course. *Journal of Turkish Science Education*, 17(1), 109–125. <https://doi.org/10.36681/tused.2020.16>
- Sibirian, S., Hutagalung, S. M., & Daulay, S. (2020). Development of Adobe Flash CS6 Learning Media in Short Story- Based on Learning Text of Advanced Local Community of Batak Toba Students in Tanjungmorawa. *BirLE-Journal*, 3(1), 591–599. <https://doi.org/https://doi.org/10.33258/birle.v3i1.855591>
- Şilbir, L., Mevhibe, A., & Kartal, Y. (2020). *Graphic Symbol Based Interactive Animation Development Process for Deaf or Hard of Hearing Students*. 12(4), 371–382. <https://doi.org/10.26822/iejee.2020459466>
- Sofyan, H., Hartati, S., Anggereini, E., Muazzomi, N., & Ramadhan, S. (2020). *Developing e-module local wisdom based for learning at kindergarten In Jambi , Indonesia*. 19(4), 2074–2085. <https://doi.org/10.17051/ilkonline.2020.763331>
- Sukmana, J. (2018). Metode 2D Hybrid Animaton Dalam Pembuatan Film Animasi Di Macromedia Flash Mx. *Pseudocode*, 5(1), 29–36. <https://doi.org/10.33369/pseudocode.5.1.29-36>
- Suratno, Bevo, W., Chen-Yen, C., Arini, R., & Yushardi. (2020). Exploring a Direct Relationship between Students' Problem - Solving Abilities and Academic Achievement : A STEM Education at a Coffee Plantation Area. *TÜRK FEN EĞİTİMİ DERGİSİ*, 17(2), 211–224. <https://doi.org/10.36681/tused.2020.22>
- Suryani, N. (2018). *Media Pembelajaran Inovatif dan Pengembangannya*. Remaja Rosdakarya.

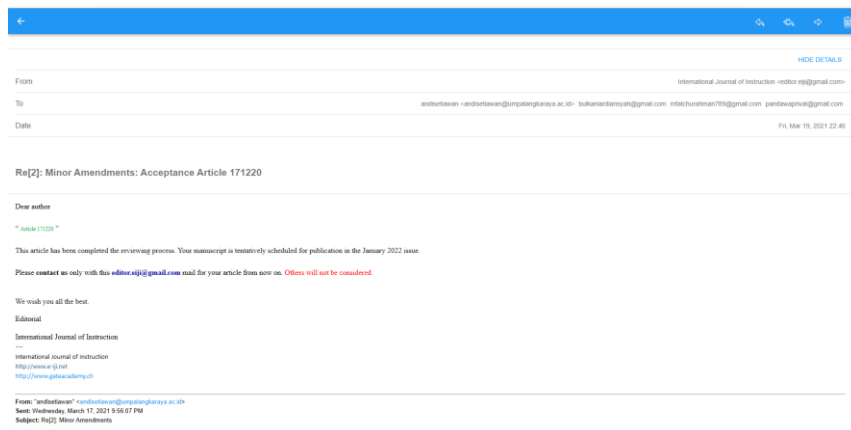
Tafonao, T. (2018). Peranan Media Pembelajaran Dalam Meningkatkan Minat Belajar Mahasiswa. *Jurnal Komunikasi Pendidikan*, 2(2), 103. <https://doi.org/10.32585/jkp.v2i2.113>

Utomo, A. P., Lutfiah, H., Erlia, N., Suratno, & Nurul, U. (2020). The Effectiveness of STEAM-Based Biotechnology Module Equipped with Flash Animation for Biology Learning in High School. *International Journal of Instruction*, 13(2), 463–476. <https://doi.org/https://doi.org/10.29333/iji.2020.13232a>

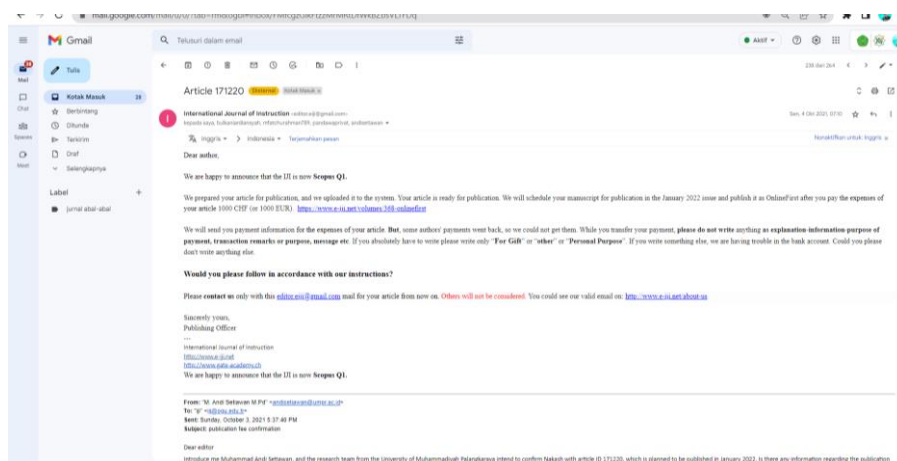
Wiyarsi, A. (2020). *Vocational High School Students' Chemical Literacy on Context-Based Learning: A Case of Petroleum Topic*. 17(1). <https://doi.org/10.36681/tused.2020.18>

Yusuf, I., Widyaningsih, S. W., & Sebayang, S. R. B. (2018). Implementation of E-learning based-STEM on quantum physics subject to student HOTS ability. *Journal of Turkish Science Education*, 15(Special Issue), 67–75. <https://doi.org/10.12973/tused.10258a>

Minor Amendment



Article Published



International Journal of Instruction

HOME PAGE ABOUT US VOLUMES CONTACT

You are here: e-ij-net - Home Page VOLUMES January 2022, Volume 15, Number 1

Search ...

January 2022, Volume 15, Number 1

ISSN: 12547

Contents

Federal Education and Switzerland
Adin Ari, Florian Feldner
 Design and Validation of a Questionnaire to Assess Student Satisfaction with Mathematics Study Materials
Tereza González-Romero, Adán García-Hernández
 Attitude and Cross-cultural Differences of UCSI University Undergraduates towards Multicultural Group Work
Liu Siwei Ling, Shuphaini Kun Khye Ling, Chang Kuan Lin
 Influence of Facilitating and Hindering Variables of Academic Engagement in Spanish Secondary Students
Marta Oporto Alonso, Marina Fernández Andujar, Carolina Calderon
 Development of Animation Learning Media Based on Local Wisdom to Improve Student Learning Outcomes in Elementary Schools
Bulkani, M. Fatchurahman, Hariyanto Adella, M. Andi Setiawan
 A Linguistic Philology of Discursive Identitas of an English for Medical Purposes (EMP) Teacher
Omar Ali Al-Saudi, Radwanah Al-Rasbi, Badaruddin Jusuf, Hadef Saad
 Assessment Quality, Well-Being and Lifelong Learning: A Meta-analytic Analysis
Rizka Hikmah, Zeynab Meenani, Hermawan, Zulhafidh, Pramesia Hadisaputra
 The Effect of Instructional Leadership and Creative Teaching on Student Actualization: Student Satisfaction as a Mediator Variable
Muhammad Supadi, Supriyo, Atan Syukur Rahmatullah, Julia Rachmanawati, Nani Hariyati
 Middle-School Online Learning Management in Higher Education
Iman Makrif, Andi Arif Rifa', Yunika Triana
 Enhancement of Preservice Islamic Studies Teachers' Autonomous Learning Skills: Designing a Reverse Learning Project
Eldhwan Alkandari, Adhaliq Al-Falikhani
 The Effectiveness of the TASC, CPS, and DI on Divergent Thinking Skill at Elementary School in Indonesia
Ji Marwaningih, Muna Fauziah
 Accessible Flipped Classroom Model for Pronunciation Instruction: Its Effectiveness and Students' Perception
Dewanto Khannash, Rizki Fidi Sugeng

E-IJINET

- Editorial Board
- Advisory Board
- Abstracting / Indexing
- Author Guidelines
- Manuscript Template
- Notes to Contributors
- Notes to Editorials
- Open Access Policy
- Publication Ethics & Malpractice Statement
- Submit Your Article

ARTICLE STATISTICS

Article Submitted: 11195
 Article Published: 1466

extension://bldogalmeddiphojckpkdkkkl/pdf/viewer.html?file=http%3A%2F%2Fwww.e-ij.net%2Fdoi%2F10.21203%2F.1.4.pdf

1 of 18 Automatic Zoom

International Journal of Instruction
 e-ISSN: 1308-1470 • www.e-ij.net

January 2022 • Vol.15, No.1
 p-ISSN: 1694-609X
 pp. 55-72

Article submission code: 20201213070159
 Received: 13/12/2020
 Revision: 29/05/2021
 Accepted: 28/06/2021
 OnlineFirst: 10/10/2021

Development of Animation Learning Media Based on Local Wisdom to Improve Student Learning Outcomes in Elementary Schools

Bulkani
 Muhammadiyah University of Palangkaraya, Indonesia, bulkaniardiansyah@gmail.com

M. Fatchurahman
 Muhammadiyah University of Palangkaraya, Indonesia, mfatchurahman759@gmail.com

Hariyanto Adella
 Muhammadiyah University of Palangkaraya, Indonesia, pandavaprivat@gmail.com

M. Andi Setiawan
 Muhammadiyah University of Palangkaraya, Indonesia, andi.setiawan@umpalangkaraya.ac.id

Teachers play an active, creative and innovative role in online learning so that student learning outcomes get maximum results. One of the efforts made is to develop animation learning media based on local wisdom in online learning. Animation media chose because students tend to be more interested in exciting things around them. To achieve this, researchers use a research and development approach to produce a product. This research model refers to the ADDIE development model. The model trial subjects were 123 students of elementary school Muhammadiyah Palangkaraya, elementary school Panarung, elementary