## 10 by Lk Nurdyansyah

**Submission date:** 26-Oct-2023 12:20PM (UTC+0700)

**Submission ID:** 2207707953

File name: ge-Based\_Learning\_Media\_Innovation\_to\_Improve\_Creativity\_and.pdf (1.16M)

Word count: 8351

**Character count:** 46494



1 Volume 4 Issue 3 Year 2023 Pages 471-487 ISSN 2722-9688 e-ISSN 2722-9696 http://jiecr.org DOI: 10.46843/jiecr.v4i3.718

Imaginative Image-Based Learning Media Innovation to Improve Creativity and Psychomotor Abilities in Elementary Schools

## Nur Fazria Masfufah<sup>1\*</sup>, Nurdyamsyah<sup>1</sup>

<sup>1</sup>Universitas Muhammadiyah Sidoarjo, <mark>Indonesia</mark>

## \*Correspondence to: nurfazria.m@gmail.com

Abstract: In this elementary school, the creativity and psychomotor abilities of students in drawing are not good enough researchers want to make imaginative drawing media to increase the creativity and psychomotor abilities of students and determine the feasibility, practicality, and effectiveness of using media and strengthening creativity and psychomotor abilities. This research used the research and development (R&D) method to make certain products and test how well these products are used. The model used was the design of the Borg and Gall development model. Researchers collected data using questionnaires, document checklists, and documentation. The research subjects were 4th-grade students at an elementary school in Sidoarjo, East Java, totaling 30 students. Based on the validation test from media experts and learning de 33, h, an average value of 90% was obtained, which means it is very feasible to use. The product development practicality test obtained an average score of 3.89 (98.25%) included in the very attractive cate 22. It can be concluded that this imaginative drawing e-module is practical, interesting, and effective as a learning medium. The results of the t-test showed that there was a significant increase in the average learning outcomes of students 52 eativity and psychomotor abilities after receiving a different treatment, namely using the Imaginative Drawing e-Module. It can be concluded that this imaginative image media is practical, interesting, and effective as a learning medium.

Keywords: learning media, imaginative images, creativity, psychomotor ability

Recommended citation: Masfufah, N. F., & Nurdyansyah. (2023). Imaginative Image-Based Learning Media Innovation to Improve Creativity and Psychomotor Abilities in Elementary Schools. *Journal of Innovation in Educational and Cultural Research*, 4(3), 471-487.



## INTRODUCTION

One of the skills that students need to develop from an early age is the ability to be creative. Cognitive skills refer to real (concrete) thinking processes and abstract and logical concepts. The psychomotor aspect is involved in process skills because it in saves the use of tools and materials, measurement, preparation, or assembly of tools. (Chairilsyah, 2018). Ukar et al. (2020) state that deliving activities can increase students' drawing creativity and are very useful in fostering psychomotor abilities and creating a fun teaching and learning atmosphere by enriching drawing activities, one of which is by connecting dots to become drawing objects. Children can have freedom in determining pictures and colors. Lubis (2022) state that increasing students' creativity through works of art can be done by imaginative drawing activities in elementary schools.

Imaginative drawing activities are activities that can export creativity in imagining students to get ideas and pictures that they want to put into a sketch. Therefore, imaginative drawing requires creative ideas and thinking activities to create creativity in students. In this case, the teacher's task is to develop creativity and design learning so that students can express ideas, thoughts, and creativity in imaginative drawing. In creativity, students can come up with new ideas or designs that are arranged in-depth through participant education. Solving problems in a manner Creativity is a way out of a problem (Putra, 2020). Many empirical studies have revealed that imaginative image-based learning media can improve creativity and psychomotor abilities in elementary schools (Rachmawati et al., 2020; Fitrisia & Jalinus, 2019; Langgadesa et al., 2020; Setyaningrum & Hutami, 2021).

Creativity is needed to develop students' skills. Psychomotor skills are learning outcomes that are manifested in the form of individual skills and abilities. The psychomotor aspects observed included imitation, manipulation, experience, and articulation. But in reality, the teacher is still in control, measuring the cognitive and psychomotor abilities of students as a measure of learning success (Isnaini & Utami, 2020; Abubakar & Ngalimun, 2019; Putri, 2020). Creativity is a process of activity in responding to complexities, giving opinions, and finally getting results to solve complexities (Abubakar & Ngalimun, 2019). Hidayati and Permata (2020) state students' self-creativity can be boosted through work such as drawing and painting. At school, the base has one subject that can increase students' creativity and psychomotor abilities, namely learning Arts, Culture, and Crafts. An easy way to develop creativity in students is by making two-dimensional works, especially as imaginative drawing assignments (Sandi, 2020; Putri, 2020; Nurmi, 2020). Learning to draw in schools should

be prepared and designed in such a way that learning becomes optimal, including imaginative drawing (Gunarti, 2019; Surbakti et al., 2019; Yustiningrum et al., 2019).

Teachers can apply a variety of different ways, including using innovative and engaging learning environments or using more creative learning methods. An example is the free expression method, which is the most suitable method for teaching and learning activities to train imaginative drawing (Merliana et al., 2018; Sari et al., 2020). Widiyanto and Kamarudin (2020) argue that the psychomotor abilities of students when drawing imaginatively are often prioritized and it must be recognized that the motoric physical condition of students is indeed a concern and discussion because the child's growth and development process affects their lives. One suitable tool for learning to draw imaginatively is a photographic resource. Cahyani et al. (2021) explain that an imaginative an imaginative and imaginative and of the students. Before the teacher starts learning in the classroom the teacher must know the background of the students in advance to understand the art v.54 d of students who have developed so that the teacher can determine and choose strategies, approaches, and learning models that are appropriate to the background conditions of students (Faida et al., 2020; Imananda & Hendriani, 2020).

Imaginative images are one form of images that can guide students to focus on examples of events to offer creativity from different image elements (Khodijah, 2020). Media is the most appropriate method for imaginative drawing learning activities. The expression method is a method that is free to use to give freedom to students in expressing opinions (Isroyati et al., 2021). Imaginative drawing media is a two-dimensional visual medium on a blank paper surface without any streaks (Apsari & Sastiawati, 2021). Imaginative images look more concrete and can increase the competitiveness and reasoning power of students because the media images display illustrations and pictures and make it easier for students to understand (Puspitorini et al., 2022). Hanifah et al. (2020) convey that imaginative picture media is a tool or media used in learning practice. The success or failure of learning through imaginative image media is influenced by the teacher who uses it. The reality of the problems that occur in Elementary School is that students do not understand imaginative images. So that the creativity and psychomotor abilities of students are still low.

Schools make imaginative picture media as media besides using textbooks as learning resources. However, textbooks and media are still conventional in printed form. This causes a lack of creativity and psychomotor abilities in students. Interesting imaginative picture media is needed to increase the participants' creativity and educate them in learning. Imaginative image media is designed very attractively to achieve competencies according to the curriculum. Previous studies ave proven that the concept of developing this module emphasizes images related to the imagination in the 2013 curriculum. The results of the module evolution by the material expert validator obtained a score of 138 (81%) and media experts obtained a score of 114 (95%). The assessment by the arts and culture teacher showed a score of 283 (96%). These results can be used as evidence that imaginative image-based learning media is an alternative learning process because it can increase the participants.

This is in line with other research which states that the overall percentage results obtained from learning material experts are 87.2% with very feasible criteria and the overall percentage results obtained from learning media experts are 96% with very feasible criteria (Aldin, 2022). The results of the overall percentage of the feasibility of developing modules assisted by mind mapping-based media posters are 91.6% with very feasible criteria. In line with other research, Cerapi's innovative media gets a score of 76 with a percentage of 96% from material experts, which means it is very feasible to use, while the media presentation component gets a score 46 with a percentage of 95% from media experts, which means it is very feasible to use (Ikhsanudin, 2020). It can be concluded that the use of imaginative image media teaching materials is very suitable for use in an interactive learning process and is very interesting for students. In addition, e-modules also keep up with the times sq53 at they are easily accepted by students.

Based on the results of the researchers' observations in class IV SD, the creative and psychomotor abilities of students in drawing were not good. The researcher made direct observations and saw that in every student activity that was successfully observed by the researcher, it turned out that the method used still used conventional methods so the results were not optimal in creating students' creativity and psychomotor abilities. Therefore, it is necessary to have the creativity and psychomotor abilities of an educator in creating innovations, including in the form of imaginative image e-modules. Based on the background above, it is necessary to explore imaginative drawing e-modules to know the feasibility, practicality, and effectiveness of their use in strengthening creativity and psychomotor abilities in students. This imaginative drawing e-module is in the form of a very interesting book. It is said to be interesting because, in the imaginative picture book, various kinds of pictures attract students to develop their creativity and psychomotor abilities.

## **METHODS**



The research and development method used in this study is to make certain products [52] test how good these products are for use (8 tiyawati & Martadi, 2020). The model used is the design of the Borg and Gall's (1971) development model (Research and information collection, Planning, Developing a primary form of product, Preliminary field testing, Main product revision, Main field testing, Operational product, Preliminary field testing, Final product revision, Dissemination and implementation. The stages of the Borg and Gall model research activities can be seen in the information below.

The first stage involves collecting information on problems faced by students during teaching and learning activities. Conduct initial observations and interviews and analyze the needs of grade 4 students to adjust imaginative drawing material. The observations, documentation, interviews, and questionnaires were given to teachers and students in grade 4 of Elementary School. Information obtained from the results of observations made will later become material in product development. The second stage, after seeing the results of observations, interviews, and questionnaires that had been carried 30 in the elementary school. In this study, the researchers got the idea to develop learning media as a tool to make it easier for students to understand imaginative picture learning material. The third phase, the development of the product form begins with determining the imaginative image e-module cover design. This process will involve media and design experts. The product developed will be a ready-to-use product, in the manufacture of e-modules and validation sheets for media and design experts whose results can be used to guide the next steps and to prove that this e-module can be used. The fourth stage is validating to evaluate and test the feasibility of the resulting product design. Validation and evaluation can be carried out by bringing in experts who are experts in their field and already have experience in evaluating the planned product. The fifth stage, after being validated by media and design experts, can be seen the shortcomings of the imaginative image e-module media. From the validation results of several experts the e-module media needs to be improved so that it can improve to make better products.

The sixth stage, product testing, can be carried out on a small or large scale. Trial activities in learning aim to obtain information about products developed in learning Imaginative images can increase students' creativity and psychomotor abilities, motivation, and interest in learning in students' learning designs. seventh Stage, product revision, if the product test states that it is not perfect and there are still defects, then it is used as a material for repairing and perfecting modular mediator that it can produce good modular mediator and is suitable for teaching in schools. In the eighth stage, field trials will be carried out in the elementary school. The trial was carried out on grade 4 students, the number of students was 30 students. In the ninth stage, after the product trial received positive feedback from students and teachers regarding effectiveness, and increased students' creative thinking and psychomotor abilities, the development of this product produced the final product. In this phase, the researcher reviews the results of the previous phase to create valid and usable learning tools. The tenth stage, implementation is a product application that has been tested and evaluated in the field. Before being widely tested, individual trials were carried out with 10 students as research subjects and then tested on 30 students to determine the level of creativity and psychomotor students. This activity was carried out after the final product was produced which was declared effective in the second revision because it received input and improvements from media experts, designers, teachers, and students.

Data collection techniques use a) a questionnaire b) a document/observation checklist c) documentation. The questionnaire was given to 4th-grade students in the elementary school, totaling 30 students to measure students' creativity and p 44 homotor abilities. The document checklist is given to the expert team to see the feasibility of the e-module. Data analysis technique using linear regression. The trial in this study consisted of three stages, namely media feasibility test, material feasibility test, and design feasibility test. The feasibility test is carried out through expert validity on in as presented in Table 1.

Table 1. Likert Scale Assessment Categories

<b>Score</b> Intervention	Rating Category	Information
Score 5	Very worth it	No Revision
Score 4	Worthy	Enough
Score 3	Enough	Minor Revision
Score 2	Not feasible	Not worth using
Score 1	Very unworthy	Repeat product creation
		(Rina et al., 2020)

Table 2. Product vality criteria

Intervention score (%)	Assessment category	Information							
81-100	Very worth it	No revisions							
61-80	Worthy	Enough							
41-60	Fair	Minor revision							
21-40	Not feasible	Not worth using							
0-20	Very unworthy	Repeat product creation							
		(Rina et al. 2020)							

Table 3. Product practicality criteria

Table of the date								
Intervention score (%)	Assessment category	Information						
81-100	Very worth it	Very interesting						
61-80	Worthy	Interesting						
41-60	Fair	Fair						
21-40	Not feasible	Less attractive						
0-20	Very unworthy	Not attractive						

## RESULT AND DISCUSSION

The research conducted results in innovative learning media in the form of imaginative image media. This development uses the Bord and Gall model. Learning media innovation products in the form of imaginative image media used in schools to op 19 ize learning must be tested for validity. Validity checks were carried out by three teams of experts, namely media ex 49 ts, material experts, and design experts. The three experts are lecturers who have experience in the fields of media, materials, and learning design. The validity test of the expert team aims to see the quality of the products that have been developed. After going through the validity testing stage of the three expert teams, the imaginative image media product was tested. This trial aims to determine students' responses to the practicality and effectiveness of using imaginative image media. The trial was carried out in small groups consisting of 5 students in grade 4 of Elementary School. Furthermore, the imaginative image e-module development product was tested on 30 grade 4 students in Elementary School. After the students carried out the imaginative drawing activities the researcher distributed questionnaires in the form of the responses of each student so that the researchers could find out the practicality and interest of imaginative drawing media. The questionnaire distributed to students consisted of two indicators, namely convenience, and attractiveness.

Before designing a product, the researcher first made observations to look for problems in grade 4. After these observations, the researcher conducted interviews with the grade 4 teacher of Elementary School. After observing and interviewing, researchers found problems in grade 4 SDN. The problem observed at school is that the teacher only uses the teacher's book as a learning resource, student's book and no media is used so students do not understand imaginative drawing and imaginative drawing learning is less effective in grade 4 as a result it has an impact on the development of students' creativity and psychomotor abilities. From these problems, researchers narrowed down the problem that the media used by teachers was less effective, causing a lack of enthusiasm. students in SBdP learning imaginative drawing material and lack of creativity and psychomotor abilities of students. Seeing the problems that exist in grade 4 Elementary School in Sidoarjo, the researchers developed innovative learning media based on imaginative drawing e-modules in SBdP learning imaginative drawing material.

Learning methods that are still conventional make students indifferent so that interesting learning does not occur. Teachers can use technology to support learning. In connection with technological developments, the teacher acts as a facilitator to be able to maximize the use of different media in the teaching and learning process. Learning technology and media are anything that can be used as a learning tool to achieve goals (Trisiana et al., 2020). The learning function itself can make abstract concepts concrete so that students are not confused. Researchers formulated and took the initiative to develop imaginative picture e-module-based learning media. By using imaginative image e-module media, students will understand the concept of imaginative images. Imaginative image-based learning media is a visual media that is not projected because imaginative image media is included in the graphic media of the cartoon group. For the selected media to provide the expected benefits, the teacher needs to pay attention to the media selection criteria.

Analysis of learning objectives based on the curriculum and learning materials. The curriculum used in grade 4 of Elementary School in Sidoarjo is the 2013 curriculum. In this curriculum, the teach 29 is only a facilitator and encourages students to be more active. This is following 21st-century skills, namely learning and innovation skills including critical thinking, communication, collaboration, and creativity. The material used in this research is imaginative drawing. Imaginative images occupy a very important role. Not only as a medium

of expression but especially to communicate design ideas. In its development, manual skills in making imaginative images are supported by modern tools (Isroyati et al., 2021). In more detail, Daryanto (2010: 108) explains that imaginative images are images that result from students' conscious thinking. Imaginative images look more concrete and can increase the competitiven [11] and reasoning power of students because in the media images display illustrations, videos, and pictures and make it easier for students to understand.

At the planning stage, the researcher obtained information from the teacher by interviewing and filling out a questionnaire, as well as making direct observations by observing the teads: 's teaching methods in a class. At the interview stage with the 4th-grade teacher of Elementary School based on the results of the interview the use of instructional media is very important to attract students' interest in learning because when students are interested in learning it will affect the assessment and subsequent processes. Conventional learning methods still do not arouse students' interest so learning does not affect students (4 a & Saifuddin, 2018). Therefore, the researchers developed an innovative learning environment as a tool that makes it easier for students to understand the material in imaginative e-modules.

At this stage, the design of interactive learning media products is carried out based on the results of the analysis stage. Researchers chose to use imaginative image e-modules so that the resulting missules could be interactive. The product design was designed after a needs analysis was carried out, namely to produce a product in the form of imaginative drawing e-module media, SBdP learning content, and imaginative drawing material. The development stage begins with determining the imaginative image module design. After the module design is determined, the imaginative image media is designed in such a way that the developed media attracts the interest of students to develop students' creativity and psychomotor abilities so that later it will produce a fun learning process. At this stage, several components needed in making learning media are designed. The components of tools and materials needed in designing imaginative picture module learning media are laptops/computers, A4 picture books, rulers and pencils, crayons, and erasers. The planning stages include several things, such as choosing to use the Canva application to design an imaginative image e-module cover. As for designing imaginative media images, several steps are taken, among others.

**Table 4.** Imaginative Image Component

## Component

The cover section consists of:

1. Media Type: Imaginative Image Module

2. Title: Imaginative Pictures

3. Target: Grade 1- IV Elementary School Students

4. Author Name: Nur Fazria Masfufah

5. Size: A4

6. Material: 230 Gram Ivory Paper

7. Illustration: Stationery, Colored Pencils

## Imaginative Drawing AMBAR

## Component

Roman Pages I Imaginative Image Media

1. Foreword

2. Material: HVS paper

3. Size: A4

## Imaginative Drawing



Roman Pages ii Imaginative Image Media

- 1. Basic competencies
- 2. Competencies to Be Achieved
- 3. Instructions for Using Media for Students
- 4. Material: A4 size HVS paper

The First Page of Imaginative Image Media

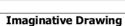
- 1. Flower Theme Imaginative Pictures
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. Example of a Flower Theme image



## Component

## Page Two Imaginative Image Media

- 1. Fish Pond Theme Imaginative Picture
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. Example of a Fish Pond Theme image





## Page Three Imaginative Image Media

- 1. Imaginative Images of the Atmosphere in the Sea
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. An example of a theme image of the atmosphere in the sea



## Page Four Imaginative Image Media

- 1. Imaginative Picture The theme of the road in the mountains
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. An example of a road theme image in the mountains



## Fifth Page of Imaginative Image Media

- 1. Imaginative Picture Sunset Theme
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. Example of a sunset theme image



Sixth page of Imaginative Image Media

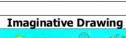
- 1. Aquarium Theme Imaginative Pictures
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. Example of an Aquarium Theme image



## Component

Seventh page of Imaginative Image Media

- 1. Urban Theme Imaginative Images
- Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. An example of an Urban Theme image





Page Eight Imaginative Image Media

- 1. Imaginative Theme Park Pictures
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. Example of a theme park image



Page Ninth Imaginative Image Media

- 1. Sea Theme Imaginative Pictures
- 2. Materials: HVS Paper, Stationery, Colored Pencils
- 3. A4 size
- 4. An example of an Ocean Theme image



In the next stage, researchers conducted initial trials with media experts and design experts. After looking at the imaginative image e-module media that has been made and seeing the attractiveness of the product applied to the selected location. The product being developed is being tested in the elementary school to be exact in grade 4. At this stage, the test is carried out to find out how students react to the product in the process of implementing learning.

The main product revision stage (evaluation) is a phase where researchers can see whether imaginative image learning can be successful. At this stage, a revision is made to the product being developed. Information received from teachers collected from student test results and expert validation. It can be said that the control phase collected information obtained in the implementation phase. After the product design has been validated by medial sperts and design experts, it can be seen about the shortcomings of the imaginative image e-module media. The results of the explanation of several experts regarding the shortcomings of imaginative image e-module media, were then corrected so that they could produce even better products. The following is a cover view of the imaginative image e-module that was developed.

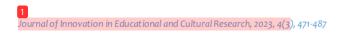


Table 5. Imaginative picture e-module cover display

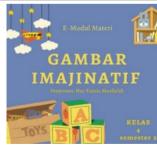
Validators	Criticism and suggestions	Information
	On the front cover, the color of the writing is less bright	Revised
Media Expert	In the image, the lines are clarified and added color so that the image does not look pale.	Revised
	On the front cover, the title is replaced with yellow	Revised
Design Expert	In the Structure of images, it is better to group and give imaginative image names for each theme.	Revised
Material Expert	In the image material that is made, a theme must be determined	Revised

**Table 6**. The results of the revision of the serial picture media learning media product

## Before Revision

## **After Revision**





Improved the front cover, the color of the writing is less bright

## **Before Revision**

## **After Revision**





Improvements to the image are clarified by lines and added color so that the image does not look pale

## **Before Revision**

## **After Revision**





Improvements to the image are clarified by lines and added color so that the image does not look pale.

# Before Revision After Revision

Improvements to the image are clarified by lines and added color so that the image does not look pale.

## Before Revision After Revision

Improvements to the image are clarified by lines and added color so that the image does not look pale.

**Before Revision** 

After Revision

Improvements to the image are clarified by lines and added color so that the image does not look pale.

## **Before Revision**

## **After Revision**





Improvements to the image are clarified by lines and added color so that the image does not look pale.

## **Before Revision**

## **After Revision**





Improvements to the image are clarified by lines and added color so that the image does not look pale.

## **Before Revision**

## After Revision





Improvements to the image are clarified by lines and added color so that the image does not look nale.

## **Before Revision**

## After Revision





Improvements to the image are clarified by lines and added color so that the image does not look pale.

The feasibility of a product to be developed before being tested on students must be reviewed and

## Journal of Innovation in Educational and Cultural Research, 2023, 4(3), 471-487

validated first by a team of experts. The results of the analysis of product testing in the form of the Imaginative Image e-Module involved 3 teams of experts constoning of 1 expert in the media field, an expert in the field of materials, and an expert in the field of design. The results of the validation assessment of media experts, material experts, and design experts can be seen in Table 7.

Table 7. Media Expert Validation Results

			Score			
Rated aspect	(SM) 5	(M) 4	(CM) 3	(KM) 2	(TM) 1	Criteria
Creative and innovative		√				Interesting
The cover design of the E-module is very attractive and can motivate students		$\checkmark$				Interesting
Clarity in pictures Easy to understand	√ √					Very interesting Very interesting
The color composition stimulates the senses of the learners	$\checkmark$					Very interesting
The theme of the images used is easy to understand		$\checkmark$				Interesting
The image pattern used is visible		$\checkmark$				Interesting
Elaboration in making drawings in detail	$\checkmark$					Very interesting
The image quality displayed is good		$\checkmark$				Interesting
The background color matches the image	$\checkmark$					Very interesting
Percentage			90%			Very interesting to use

Based on Table 7, the average value of the total aspects is 90 when referring to the criteria for determining the level of validity of predetermined learning media, it can be concluded that the validity results of the e-Module imaginative images that have been developed have a level of validity that is very feasible to use with an achievement value of 90 %. However, there are some inputs for improvement from media experts.

Table 8. Design Expert Validation Results

	'		Score	!		
Rated aspect	(SM)	(M)	(CM)	(KM)	(TM)	Criteria
Use of images	<u>5</u>	4	3			Very interesting
Compatibility of design with media images Compatibility of images with learning outcomes	√	$\checkmark$				Very interesting Interesting
Increase creativity The material in the learning media is easy to	$\checkmark$					Very interesting
follow	$\checkmark$					Very interesting
The clarity of the media in conveying the material is good		$\checkmark$				Interesting
Images contained in the media can clarify the material		$\checkmark$				Interesting
Increase interest in learning		$\checkmark$				Interesting
Percentage	93%		Very interesting to use			

Based on the data above, it can be seen that the validity of the imaginative image e-Module from the design expert is rated very valid with a value of 93%.

Table 9. Material Expert Validation Results

	[34]		Score	:		
Rated aspect	(SM)	(M)	(CM)	(KM)	(TM)	Criteria
	5	4	3	2	1	64
The images used in the Module are easy to understand	$\checkmark$					Very interesting
Does the sample suit the material?	$\checkmark$					Very interesting
Compatibility of tasks and exercises with the formulations indicators		$\checkmark$				Interesting
Suitability of the material presented with core						
competencies, basic competencies, and learning	$\checkmark$					Very interesting
indicators	,					
The picture adds to the knowledge of students	√	,				Very interesting
Ease of material presented		ν,				Interesting
The accuracy of terms on the material		V				Interesting
The suitability of the material presented with the stages of student development						Interesting
_						Very interesting
Percentage			93%			to use

If the imaginative image e-module product has been made, in the next stage the researcher conducts field trial activities of the imaginative image e-module product that has been made. Product testing for imaginative e-design modules can be done in small groups and large groups. The purpose of this research on image learning is to obtain information about designed imaginative image module products that can enhance students' creativity and psychomotor skills, motivation and interest in learning in the learning 45 cess, and imagination. media images 19 module is an interesting resource as a learning tool. The data from the results of the small group trial were validated by several experts in 61 ding media experts and design experts. After that, the first experimental stage was a small group trial 46 his small group experiment was conducted to obtain data on the quality of the resulting learning 23 dia. This small group experiment was conducted with 5 students. The selection of studen 63 as the subject of this small g 11 p research was carried out using a random procedure or random sampling. The results of small group trials can be seen in the following table:

Table 10. Small Group Product Trial Results

Table 10. Small Group Product Trial Results							
Assessment Aspects	s1	s2	s3	s4	s5	Average	Criteria
Fun imaginative drawing	5	5	5	5	5	5	16 Very interesting
After the imaginative picture, the E-module increased students' learning interests higher	5	4	5	5	5	4,8	Interesting
The developed imaginative image e-module can foster curiosity and hone students' psychomotor abilities	5	4	5	5	5	4,8	Interesting
Imaginative image e-module makes it easy to add to the creativity of students	4	5	5	5	5	4,8	Interesting
With the E-module imaginative images can help students to learn actively and independently	5	5	5	5	5	5	Very interesting
Page display Imaginative drawing e-module has attractive pictures and colors	5	5	5	5	5	5	Very interesting
The display of the imaginative image E-module that was developed is quite interesting	5	5	5	4	5	4,8	Interesting
Average	4.86	4.71	5	4.86	5	4.89	Very interesting
Percentage			9	8.25%			

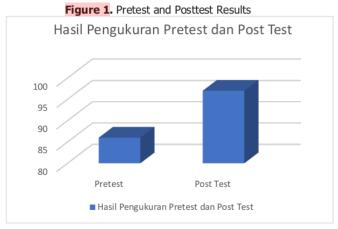
Based on the results of the small group test assessment by 5 students in the Imaginative Drawing e-Module, the mean value was 4.89 (98.25%). Thus, the results of the small group evaluation by 5 students which can be seen in Table 4 show that the Imaginative Image e-Module developed is in the very feasible and interesting category to use as a medium for learning imaginative image material.

Table 11. Results of the Teacher's Response Practicality Trial

Questionable Aspects	Score	Percentage
The overall display of imaginative image media increases student creativity and represents the contents of the book	5	100%
Image media imaginative image media to increase student creativity according to KI, KD, and Learning Indicators	4	80%
Images are dominant compared to the m43 rial text	4	80%
The type and size of the image used are attractive and easy for students to understand	5	100%
The suitability of the image corresponds to the material described	5	100%
The style in the picture is suitable for students	4	80%
The size of the image and the type of paper are appropriate so that it is easy for students to use	4	80%
Image media Imaginative image media to increase student creativity can help and facilitate teachers in conveying material	4	80%
The material presented is clear and easy to understand according to the level of thinking of students	4	80%
The evaluation given follows the material and learning objectives	4	80%
Percentage		88%

The teacher response questionnaire table above shows that there are 6 aspects of the questions that received a positive response, namely 80% on numbers 2, 3, 7, 8, 9, and 10, while the rest resting a 100% positive response. After testing the imaginative image e-module product in the next stage, a product revision is carried out based on the results of product testing. The next step is product revision based on the results of product trials. If the product trial shows that it is not perfect and still has deficiencies, it can be used as material to improve the imaginative image e-module, good imaginative images can produce media products that are suitable for use. The field test was conducted at SDN Sawohan 1 Buduran. The experiment was conducted for grade 4 students, 30 students participated. Each student and teacher received a questionnaire with several questions.

After the product tests were completed and the results of the product tests to be developed received positive feedback from students and teachers in terms of efficiency, usefulness, and improvement of students' creative and psychomotor thinking abilities, the development of this product produced the final product. At this stage, the researcher revises the resulting product from the previous stage to create valid and feasible learning tools. The implementation phase is a product application that has been tested and evaluated in the field. Before being widely tested, individual trials were carried out with 3 research subjects, then tested on 10 students, and then tested on 30 students to determine the level of creativity and psychomotor students. This activity was carried out after the final product was produced which was declared effective in the second revision because it had received input and improvements from material experts, teachers, and students. This test is carried out using products that have been developed directly in learning. To measure the effectiveness of the Imaginative space on the results of improving students' imaginative drawing learning outcomes can be seen in the following figure and table.



Based on the

data above, the

average value of increasi 28 creativity and psychomotor abilities for imaginative drawing material is 10%. By describing the number of students who experiences in learning outcomes, there were 27 students, the remaining 3 students. This means that 95% of students experienced an index in learning outcomes for imaginative drawing material after using the imaginative drawing e-Module. So, it can be concluded that the number of students who experience increased creativity and psychomotor abilities using the e-Module imaginative images that have been developed has a High/Effective success rate with an achievement of 95%.

 Table 118 Output Paired Samples Statistics

 Paired Samples Statistics

 Means
 N std. Deviation std. Error Means

 Pair 1 PRETEST
 70.3333
 30
 15.25266
 2.78474

 POSTTEST
 89.3333
 30
 10.56453
 1.92881

The table abov 15 nows an average value or mean pretest data of 70.33. Meanwhile, the post-test data was 89.33. This means that there is an average difference between the pretest and post-test data creativity and psychomotor abilities of students.

Table 13. Output Paired samples test

## **Paired Samples Test**

## **Paired Differences**

Pair

1

		Std.	Std. Error	95% Confide of the D		Sig. (2-	
	Mean	Deviation	Mean	Lower	Upper	t df	tailed)
PRETEST - POSTTEST	- 1.90000E1	6.74665	1.23176	-21.51924	-16.48076	- 15.425 <sup>29</sup>	.000

Based on the results of the table above, the value of Sig. (2-tailed) 0.000 <0.05 and thit value 15.425 > ttab 2.58. So, it can be decided that with a 95% confidence level, there is a positive and significant increase between imaginative image-based learning media with creativity and psychomotor abilities at SDN Sawohan 1 Buduran Sidoarjo. This means that there is a significant positive increase in students' calculated that imaginative image-based learning media treatment. So, it can be concluded that imaginative image-based learning media is very effective in efforts to increase the creativity and psychomotor abilities of class students.

One of the abilities in learners that needs to be built from an early age is the ability of creativity. Creativity is needed in the development of learners' abilities because the development of learners' abilities will impact on intelligence of the right brain and left brain. Creativity is a process that is responsive to problems, weaknesses, or shortcomings, compares opinions, and finally conveys the results (Kartika et al., 293). From the above opinion, creativity is the ability to solve problems in detail and communicate the results. To be able to do all that requires encouragement from the environment based on the creative potential that already exists in him. Thus, there is mutual support between environmental factors and the creative potential they have so that they can accelerate the development of creativity in individuals. Learners' creativity will develop if they understand that drawing is not just a reflection or recreation of the soul but contains the results of thoughts and feelings that are poured into the work so that drawing can be an indirect means of communication. The role of the teacher is very important to make students think about how to make works that can express their feelings (Cahyani et al., 2021).

Images in imaginative drawing media can help visualize abstract or complex concepts. With images that illustrate the steps or relationships between concepts, students can easily understand and see the images they see (Sugiartini, 2023). Imaginative drawing media can be used in 502 form of groups or individuals in the classroom, thus facilitating social interaction between students. This can increase students' participation in the learning process and build collaboration among them. However, keep in mind that the use of imaginative drawing media alone is not enough to guarantee the improvement of students' creativity and psychomotor ability. Other fac 503 such as teaching methods, material quality, teacher-student interaction, and learning environment also play an important role in influencing the improvement of students' creativity and psychomotor ability. Therefore, educators need to pay attention to all these aspects to achieve optimal results (Abdullatief et al., 202 42 Jurcahyo, 2020; Sobry & Sa'i, 2020; Kusuma, 2021; Asmawati, 2017).

The use of an aginative drawing media in learning can increase student engagement. Interesting and interactive images can attract students' attention and make them more focused and engaged in the learning process (Syahda et al., 2023). This can have a positive impact on creativity and better psychomotor skills.

Imaginative drawing media can stimulate student problem-solving. By visualizing situations or problems through images, students can see the relationship between various elements and find solutions more creatively. This can develop students' critical thinking skills, creativity, and psychomotor abilities. It is important to remember that the use of imaginative drawing media as the only factor does not guarantee a significant increase in creativity and psychomotor ability. Other factors such as teaching quality, teacher-student interaction, student motivation, family support, and learning environment also play an important role in influencing student learning outcomes. Therefore, a comprehensive and integrated approach to learning is necessary to achieve optimal learning 21 toomes in imaginative drawing (Nurmasyitah & Ely, 2019).

because the use of imaginative drawing media can improve the creativity and psychomotor abilities of fourth-grade elementary school students in drawing research stopped in cycle II. The ability of students in drawing has increased with the use of imaginative drawing media. After learning using imaginative drawing media, students can draw objects completely and clearly. The results show that the ability of learners in drawing improves with the use of imaginative drawing media.

51

## CONCLUSION

Basyl on the research and development process of Imaginative Image media, it car 26 e concluded as follows. To find out the feasibility of this product, researchers conducted an assessment of media experts, material experts, and design experts. The validation results of media experts, material experts, and design experts amounted to 90% with very suitable status. The level of practicality of this Imaginative Image media is said to be practical and interesting to use because it can be proven by the results of product trials in a small group of 5 students and a large group of 30 students of the elementary school in Sidoarjo. The results of the assessment of Imaginative Image media in small groups of 5 students obtained an average value of 4.89 (98.25%). Thus, the results of the small group evaluation by 5 students show that the Imaginative Image media developed is in the very feasible and interesting category to use as a learning medium. Thus, this Imaginative Image media product can be said to be feasible, interesting, practical, and sective to use and has good quality for increasing students' creative results. This is because Imaginative Image media can make it easier for students to improve their psychomotor abilities and students' creativity.

## **REFERENCES**

- Abdullatief, N., Husain, R., & Pulukadang, W. T. (2023). Pengaruh Media Gambar Berseri Terhadap Minat Belajar Dan Hasil Belajar Siswa Kelas II Sekolah Dasar Negeri 8 Kwandang Kabupaten Gorontalo Utara. Innovative: Journal Of Social Science Research, 3(2), 11327-11340.
- Abubakar, H. M., & Ngalimun. (2019). Psikologi Perkembangan (konsep dasar pengembangan kreativitas anak). K-Media.
- Aldin, M. (2022). Pengembangan Modul Berbantuan Media Poster Berbasis Mind Mapping Pada Materi Usaha Dan Energi. Fakultas Tarbiyah dan Keguruan Universitas Islam Negeri (UIN) Ar-Raniry Banda Aceh.
- Apsari, N., & Sastiawati. (2021). Kemampuan Kognitif, Afektif Dan Psikomotorik Siswa Sekolah Dasar Pada Pembelajaran IPA Menggunakan Metode Inkuiri. *Jurnal Pendidikan Dasar*, 9(1).
- Asmawati, L. (2017). Peningkatan Kreativitas Anak Usia Dini Melalui Pembelajaran Terpadu Berbasis Kecerdasan Jamak. *Jurnal Pendidikan Usia Dini*, 11(1).
- Cahyani, C., Antosa, Z., & Noviana, E. (2021). Analisis Kemampuan Menggambar Imajinatif Siswa Kelas Ii Sd Negeri 018 Ujungbatu. Primary: Jurnal Pendidikan Guru Sekolah Dasar, 10(6), 1525.
- Chairilsyah, D. (2018). Mengidentifikasi Indikator Kognitif Dan Membuat Instrumen Perkembangan Kognitif Pada Aanak Usia Dini. Badan Penerbit Universitas Riau.
- Faida, P. E., Udin, T., & Latifah, L. (2020). Pengaruh metode eksplorasi seni menggambar terhadap kreativitas siswa kelas V Madrasah Ibtidaiyah. UNIEDU: Universal Journal of Educational Research, 1(2), 116-131.
- Fitrisia, R., & Jalinus, N. (2019). Komparasi Penggunaan Modul Cetak dengan Multimedia Interaktif Terhadap Hasil Belajar Ditinjau dari Kreativitas Siswa. *Invotek: Jurnal Inovasi Vokasional dan Teknologi*, 19(2), 67–74. https://doi.org/10.24036/invotek.v19i2.307
- Gunarti, P. (2019). Analisis Kemampuan Menggambar Ilustrasi Siswa Kelas V Sd Negeri Bulungan (Studi Kasus

- Di Sd Negeri Bulungan) [Undergraduate Thesis, Universitas Negeri Semarang].
- Hanifah., Afrikani, T., & Yani, I. (2020). Pengembangan Media Ajar E-Booklet Materi Plantae Untuk Meningkatkan Hasil Belajar Biologi Siswa. *Journal of Biology Education Research*, 1(1), 10–16.
- Hidayati, N., & Permata, R. D., (2020). Peningkatan Kreativitas Menggambar Melalui Pola Bentuk (Shape). Jurnal Teladan, 5(1), 27–37.
- Ikhsanudin, F. (2020). Pengembangan Media Permainan Inovatif Cerapi (Cerita Imajinasi Pola Lantai) Pada Pembelajaran Sbdp Untuk Siswa Kelas V Sdn Karangtengah 01 Batang. Universitas Negeri Semarang.
- Imananda, A. N., & Hendriani, W. (2020). Gambaran Kepuasan Kerja Pada Guru Honorer di Indonesia: Literature Review. Dalam Psychology Journal of Mental Health, 2(2). http://pjmh.ejournal.unsri.ac.id/
- Isnaini, A. I., & Utami, L. (2020). Pengembangan Instrumen Penilaian Kinerja untuk Mengukur Kemampuan Psikomotorik Siswa dalam Praktikum Laju Reaksi. Journal of The Indonesian Society of Integrated Chemistry, 12(1), 24–30. https://doi.org/10.22437/jisic.v12i1.9054
- Isroyati, I., Hapsari, F. S., & Prasasty, A. T. (2021). Penerapan Metode Sugesti-Imajinatif dengan Menggunakan Media Gambar Fotografi untuk Meningkatkan Kemampuan Menulis Karangan Deskripsi. *Jurnal Pendidikan: Riset dan Konseptual*, 5(2), 255-266.
- Kartika, P. Y., Syafryadin, S., Pratama, M. I. L., & Hendra, H. (2023). Optimalisasi Kreativitas Anak Melalui Pemanfaatan Program Media Menggambar Dan Mewarnai. Huidu Jurnal Pengabdian Masyarakat Geoscience, 2(1), 1-5.
- Khodijah, M. (2020). Analisis Kreativitas Karya Siswa Sekolah Dasar Melalui Gambar Motif Batik Kawung: Penelitian Kualitatif pada Siswa Kelas V SD Negeri 2 Gunung Bentang di Padalarang Kabupaten Bandung Barat [Undergraduate Thesis, Universitas Pendidikan Indonesia].
- Kusuma, I. (2021). Pengaruh Penggunaan Media Mozaik Terhadap Kreativitas Siswa Pada Mata Pelajaran Seni Budaya Dan Prakarya Di Kelas IV SDN 166 Seluma. Institut Agama Islam Negeri Bengkulu.
- Langgadesa, Y. R., Mursak, M., & Inayah, F. (2020). Efektivitas Penggunaan Cerita Anak Dalam Mengembangkan Kreativitas Menggambar Siswa SD di Kecamatan Banawa Kabupaten Donggala. *Jurnal Kreatif Online*, 8(4).
- Lubis, N. A. (2022). Meningkatkan Kreativitas Siswa Sekolah Dasar melalui Karya Seni Rupa Menggambar Imajinatif. Mahaguru: Jurnal Pendidikan Guru Sekolah Dasar, 3(2), 15-25.
- Merliana, A., Rengganis, I., & Djumhana, N. (2018). Penerapan pendekatan inspiratif untuk meingkatkan kreativitas menggambar siswa. Jurnal Pendidikan Guru Sekolah Dasar, 3(1), 13-22.
- Nurcahyo, L. (2020). Pendekatan konsep Merdeka Belajar dalam pembelajaran Seni Rupa di era industri 4.0. Seminar Nasional Seni dan Desain 2020 (pp. 143-150). Universitas Negeri Surabaya.
- Nurmasyitah, N., & Ely, R. (2020). Pengembangan Kreativitas Peserta Didik Pada Materi Seni Rupa Melalui Teknik Montase Kelas Iv Di Sd Negeri 3 Samadua Aceh Selatan. *Elementary Education Research*, 5(2).
- Nurmi, S. (2020). Meningkatkan Kreativitas Anak Didik Melalui Permainan Konstruktif Balok Kelompok B di Paud Pelangi Kecamatan Sinjai Barat Kabupaten Sinja. Universitas Muhammadiyah Makassar.
- Puspitorini, F., Hamdani, H., Zulfadhli, M., Muhendra, R., & Kusuma, A. P. (2022). Optimalisasi Media Ajar dalam Pengajaran Berbasis Digital di SD Negeri Muktiwari 01. Jurnal Komunitas: Jurnal Pengabdian kepada Masyarakat, 5(1), 67-73.
- Putra, I. B. K. S. (2020). Analisis Gambar Karya Anak Usia Dini Berdasarkan Teori Perkembangan Seni Rupa Anak Viktor. *Pratama Widya: Jurnal Pendidikan Anak Usia Dini*, 5(1), 43-51.
- Putri, F. A. (2020). Analisis Perkembangan Seni Kreativitas Siswa Kelas Rendah Muhammadiyah Pajangan 2 Yogyakarta. Al-Aulad: Journal of Islamic Primary Education, 3(1), 1-9.
- Rachmawati, D. A., Sumanto, S., & Cholifah, P. S. (2020). Studi Kemampuan Berkarya Seni Rupa Teknik Tempel pada Siswa Kelas IV Sekolah Dasar. Sekolah Dasar: Kajian Teori dan Praktik Pendidikan, 29(2), 102-118.
- Sandi, N. V. (2020). Menggambar dalam mengembangkan kreativitas dan bakat siswa sekolah

- dasar. Biormatika: Jurnal ilmiah fakultas keguruan dan ilmu pendidikan, 6(1), 79-87.
- Sarasehan, Y., Buaraheng, S., & Wahyuni, I. W. (2020). Pengembangan Seni Rupa Tiga Dimensi untuk Meningkatkan Kreativitas Anak melalui Media Playdough. NANAEKE: Indonesian Journal of Early Childhood Education, 3(1), 28-36.
- Sari, F. P., Azmi, A., & SND, R. B. (2020). Tinjauan Kemampuan Menggambar Menggunakan Pola Pada Anak di TK B RA Al-Fazwa Deli Serdang. *Gorga: Jurnal Seni Rupa*, 9(1), 176-181.
- Sugiartini, N. N. (2023). Implementasi Model Pembelajaran Treffinger pada Materi Keanekaragaman Hayati Dengan Bantuan Media Gambar Terhadap Hasil Belajar Biologi Siswa Kelas X di SMAN 8 Mataram [Undergraduate Thesis, Universitas Mataram].
- Ukar, D. S., Taib, B., & Alhadad, B. (2021). Analisis Kreativitas Menggambar Anak Melalui Kegiatan Menggambar. *Jurnal Ilmiah Cahaya Paud*, 3(1), 117-124.
- Setiyawati, D., & Martadi. (2020). Pengembangan Modul Materi "Gambar Imajinasi" Di Sma Negeri 4 Sidoarjo. Jurnal Seni Rupa, 8(3), 157–170.
- Setyaningrum, F., & Hutami, H. A. (2021). Pembentukan Kreativitas Melalui Pembelajaran Sbdp Kelas IV Pada Materi Melukis Di SD Muhammadiyah Condongcatur. *Taman Cendekia: Jurnal Pendidikan Ke-SD-an*, 5(1), 515-527.
- Sobry, M., & Sa'i, M. (2020). Penguatan Kompetensi Guru Melalui Pemanfaatan Media Sederhana Dan Modern. El-Tsaqafah Jurnal Jurusan PBA, 19(1), 97–118.
- Surbakti, T. I. P., Zulkifli, Z., Atmojo, W. T., & Mesra, M. (2019). Analisis Kreativitas Siswa Kelas III SD Swasta Yayasan Wanita Kereta Api "YWKA" Medan dalam Pembelajaran Menggambar Binatang. Gorga: Jurnal Seni Rupa, 8(1), 182-186.
- Syahda, S., & Harahap, D. A. (2023). Peningkatan Kemampuan Berbahasa Dengan Media Gambar pada Anak Usia Pra Sekolah di PAUD Terpadu Mutiara Bunda Kabupaten Kampar. *Dedikasi: Jurnal Pengabdian Pendidikan dan Teknologi Masyarakat*, 1(2), 85-89.
- Trisiana, A. (2020). Penguatan Pembelajaran Pendidikan Kewarganegaraan Melalui Digitalisasi Media Pembelajaran. *Jurnal Pendidikan Kewarganegaraan*, 10(2), 31-41.
- Ulfa, M., & Saifuddin. (2018). Terampil Memilih dan Menggunakan Metode Pembelajaran. Suhuf, 30(1), 35–56.
- Widiyanto, W. E., & Kamarudin. (2020). Optimalisasi Kemampuan Psikomotorik Peserta Didik Dalam Proses Pembelajaran Pendidikan Jasmani. *Tadulako Journal Sport Sciences And Physical Education*, 143–154.
- Yustiningrum, G. E., & Triyanto, T. (2019). Implementasi dan Hasil Kreativitas Pembelajaran Menggambar di TK Al-Falaq Kelurahan Pudak Payung Kota Semarang. Eduarts: Jurnal Pendidikan Seni, 8(2), 34-41.

## **ORIGINALITY REPORT** 12% SIMILARITY INDEX **INTERNET SOURCES PUBLICATIONS** STUDENT PAPERS **PRIMARY SOURCES** jiecr.org 2% Internet Source ijsoc.goacademica.com Internet Source journal2.um.ac.id Internet Source Mira Nurul Fitri, Budi Astuti. "Development of 0% 4 an E-Module to Improve Positive Body Image of Junior School Students in Facing Challenges of Society 5.0 Era", ICLIQE 2021: Proceeding of The 5th International Conference on Learning Innovation and Quality Education, 2021 Publication www.jiecr.org 5 Internet Source

Submitted to Universitas Negeri Surabaya
The State University of Surabaya

<1%

Student Paper

jppipa.unram.ac.id

**Internet Source** 

17	obsesi.or.id Internet Source	<1%
18	etheses.uin-malang.ac.id Internet Source	<1%
19	journal.stkipsingkawang.ac.id Internet Source	<1%
20	Dewi Handayani, Endang Widi Winarni, Agus Sundaryono, M.Lutfi Firdaus, Muzanip Alperi Alperi. "Development of Organic Chemistry Teaching Materials on The Topic of Lipid Using Android STEM Based Approach", International Journal of Interactive Mobile Technologies (iJIM), 2022 Publication	<1%
21	Lilis Suparti Suparti, Poni Poni Poni, Pranichayudha Rohsulina Rohsulina. "Use Google Sites to Increase Interest Learning Geography High School in Sukoharjo", Journal of Geography Science and Education, 2021	<1%
22	www.scribd.com Internet Source	<1%
23	"Development of Integration Education Model Pela-Gandong Local Based on Local Content in Primary Schools in Ambon City",	<1%

## International Journal of Recent Technology and Engineering, 2019

**Publication** 

24

Rully Aprilia Zandra. "Daily Score Cards on Android Smartphones", KnE Social Sciences, 2020

<1%

Publication

25

Lely Widorini Kurniawati. "Effect of Flash Card Media Effectiveness on Beginning Reading Ability and Symbolic Thinking in Early Childhood 5-6 Years: Case Study in Kindergarten. Imam Syafi'I Jember Odd Semester 2022-2023 Academic Yea", Journal of Education Technology and Inovation, 2023

<1%

Publication

26

Alkhadad Feri, Zulherman Zulherman.
"Development of nearpod-based e module on science material "energy and its changes" to improve elementary school student learning achievement", International Journal of Education and Learning, 2021

<1%

Publication

27

Darsan Darsan. "Improving Student Interests and Learning Outcomes With the Jigsaw Type Cooperative Learning Model Approach in Al Madinah Elementary School Students, Jember", Journal of Education Technology and Inovation, 2023

<1%

Publication

28	Uulia 'Iffa, Edi Supriana, Sutopo. "Drawing ability of force diagram with modeling instruction based free-body diagram learning", AIP Publishing, 2020 Publication	<1%
29	www.ctap10.org Internet Source	<1%
30	Irfan Taufik Nurdin, Harry Dwi Putra, Wahyu Hidayat. "The Development of Problem Based Learning Google Sites-Assisted Digital Teaching Materials to Improve Students' Mathematical Critical Thinking Ability", (JIML) JOURNAL OF INNOVATIVE MATHEMATICS LEARNING, 2023 Publication	<1%
31	P S Putra, N B Asi, M E Anggraeni, Karelius. "Development of android-based chemistry learning media for experimenting", Journal of Physics: Conference Series, 2020 Publication	<1%
32	ojs.unpkediri.ac.id Internet Source	<1%
33	Sigit Dwi Saputro, Tukiran Tukiran, Zainal Arifin Imam Supardi. "Design clarity learning model to improve advanced clarification ability on physics courses", Cypriot Journal of Educational Sciences, 2022	<1%

34	innspub.net Internet Source	<1%
35	ojs.unida.ac.id Internet Source	<1%
36	H Sugilar, I Nuraida, F S Irwansyah, M A Ramdhani. "Algebraic experience material with lectora inspire", IOP Conference Series: Materials Science and Engineering, 2018 Publication	<1%
37	K A Aka. "Integration Borg & Gall (1983) and Lee & Owen (2004) models as an alternative model of design-based research of interactive multimedia in elementary school", Journal of Physics: Conference Series, 2019 Publication	<1%
38	aip.scitation.org Internet Source	<1%
39	docplayer.info Internet Source	<1%
40	ejournal.ust.ac.id Internet Source	<1%
41	eprints.iain-surakarta.ac.id Internet Source	<1%
42	repo.uinsatu.ac.id Internet Source	<1%



Diena Rauda Ramdania, Maisevli Harika, Sandi Rahmadika, Gina Giftia Azmiana. "The

48

Use of Relations and Functions Games Based on Balanced Design in Mathematics Subjects to Improve Student Learning Outcomes", Journal of Physics: Conference Series, 2019

Publication

Hariyanto Hariyanto, Soetarno Joyoatmojo,
Joko Nurkamto, Gunarhadi Gunarhadi.
"Developing Inquiry-Based Learning Materials
to Promote Students' Academic
Achievement", International Journal of
Learning, Teaching and Educational Research,
2019

Publication

Vina Iman Adhiana, Yuniawatika Yuniawatika, Erif Ahdhianto, Jan Wantoro. "Interactive Media Development Using Articulate Storyline-Based Instructional Games for Teaching Fractions", Profesi Pendidikan Dasar, 2022

Publication

journal.upgris.ac.id

**Internet Source** 

<1%

<1%

<1%

jurnal.radenfatah.ac.id

<1%

jurnal.ustjogja.ac.id

<1%

mathline.unwir.ac.id

		< 1 %
55	musikolastika.ppj.unp.ac.id Internet Source	<1%
56	repo.uum.edu.my Internet Source	<1%
57	Aulia Fonda, Sumargiyani Sumargiyani. "THE DEVELOPING MATH ELECTRONIC MODULE WITH SCIENTIFIC APPROACH USING KVISOFT FLIPBOOK MAKER PRO FOR XI GRADE OF SENIOR HIGH SCHOOL STUDENTS", Infinity Journal, 2018 Publication	<1%
58	Dinar Bulawan Permatasari, Zulkarnaen Zulkarnaen. "ANALYSIS OF THE DRAWING STAGES OF CHILDREN AGED 5-6 YEARS", Early Childhood Research Journal (ECRJ), 2023 Publication	<1%
59	I Rozana, M Makmuri, L E Hakim. "Problembased and thinking talk write learning model, mathematical reasoning, and transformation geometry", Journal of Physics: Conference Series, 2020 Publication	<1%
60	Rohati Rohati, Ade Kumalasari, Marlina Marlina, Naya Junia. "THE DEVELOPMENT OF	<1%

TOONDOO ONLINE COMIC BASED ON RME

## TO SUPPORT STUDENT'S MATHEMATICAL LITERACY SKILLS", AKSIOMA: Jurnal Program Studi Pendidikan Matematika, 2021

Publication

Dyah Ayu Karindra Oktaviane, Rooselyna Ekawati. "Development of Electronic Students' Worksheet Linear Function-Problem Based Using Desmos Application", Jurnal Cendekia: Jurnal Pendidikan Matematika, 2022

<1%

- Publication
- Fahrudin Fahrudin, Moch Asmawi,
  Firmansyah Dlis, Resty Gustiawati.
  "Development Fundamental Movement
  Learning Model Based On Team Games
  Tournament (TGT) For Elementary School
  Children", Kinestetik: Jurnal Ilmiah Pendidikan
  Jasmani, 2020

<1%

- Publication
- Ida Wahyuni, Teguh Febri Sudarma. "Design of Learning Media Physics based on Website", Journal of Physics: Conference Series, 2018

<1%

Nadya Kirana Nareswari, Alvanov Zpalanzani Mansoor. "Business-to-Business Opportunity for a Creative Writing Agency Seen from the Industry's Potential and Its Impact on the Society", European Journal of Business and Management Research, 2022

<1%

Publication

Exclude quotes On Exclude matches Off

Exclude bibliography On