

## DEVELOPMENT OF INTERACTIVE LEARNING MEDIA ASSISTED BY PADLETS ON THE THEME OF ENVIRONMENTAL CHANGE TO FOSTER STUDENT CREATIVE THINKING SKILLS

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**Abstract:** Creative thinking is one of the abilities that 21<sup>st</sup>-century students must possess. The importance of the ability to think creatively for students is so that students can spark ideas to find solutions in problem-solving. However, students' creative thinking skills still need to improve; this can be seen in the need for more active students in learning activities. Interactive learning media can attract students' attention so they can actively participate in learning activities. One application that can be used as a learning medium is Padlet. This study aims to analyze the efficiency level of Padlet-assisted interactive learning media with the theme of environmental change to foster the creative thinking abilities of class VII students. The method used is R&D (research and development) with a model that refers to Sugiono (2017), which is then modified and limited to the product trial stage. The result showed that the scores obtained on the validation and trial of Padlet-assisted interactive learning media were 94.25% in the "Very Valid" category, and the results of the media trials obtained a score of 89.93% in the "Very Efficient" category. The developed media can also foster creative thinking skills based on students' assessment of media trials on creative thinking indicators obtaining a percentage value of 85.91%. In conclusion, Padlet-assisted interactive learning media is very efficient and suitable for use in the field to foster the creative thinking abilities of class VII students on environmental change.

**Keywords:** *Creative Thinking, Interactive Learning Media, Padlet*

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### INTRODUCTION

Thinking creatively is one of the three abilities that must exist in 21<sup>st</sup>-century students. The other three abilities are communication skills, collaboration, and critical thinking [1]. The ability to think creatively is needed by students to spark creative ideas and find solutions to solve a problem so that they can face the challenges that exist in everyday life [2].

Science learning supports students in developing their ability to think creatively. It has the goal of bringing up an understanding of concepts and principles related to natural phenomena that can be applied in life. Therefore the ability to think creatively needs to be grown in science learning so that students can solve problems and provide solutions to problems related to environmental issues that are currently happening [3].

In the 2013 curriculum, it is explained that the science learning process in junior high schools is carried out in an integrated manner. Integrated natural science is integrated learning in a theme that is described from various aspects of science studies (physics, chemistry, biology, earth, and space sciences) so that it is more meaningful, effective, and efficient so that through natural science, students can know, respond to and understand science and technology, as well as getting used to thinking critically, creatively, scientifically and independently [4].

Based on the results of interviews from three junior high schools in Cilegon City, it is known that students' ability to think creatively is still low; this can be seen during learning activities students have not been able to provide ideas or ideas for questions raised by teachers, and also students are still not participating in responding to teachers during learning activities so that this can hinder students' ability to think creatively.

People who think creatively have the characteristics of having the ability to think fluently (can generate lots of ideas), think flexibly (produce variations of ideas and answers), think original (able to create new expressions), can detail, have high curiosity, dare in opinion and openness to experience [5].

The lack of learning media teachers use to attract students to science lessons also causes the learning process to run less interactively so that teachers, rather than students, dominate learning activities; this is one of the triggers for students' lack of creative thinking abilities. In the current era of digitalization, many websites or applications have been developed for education, one of which is the Padlet application. Padlet is an application useful as a container for sharing information in the form of text, documents, photos, links, and videos called walls [6].

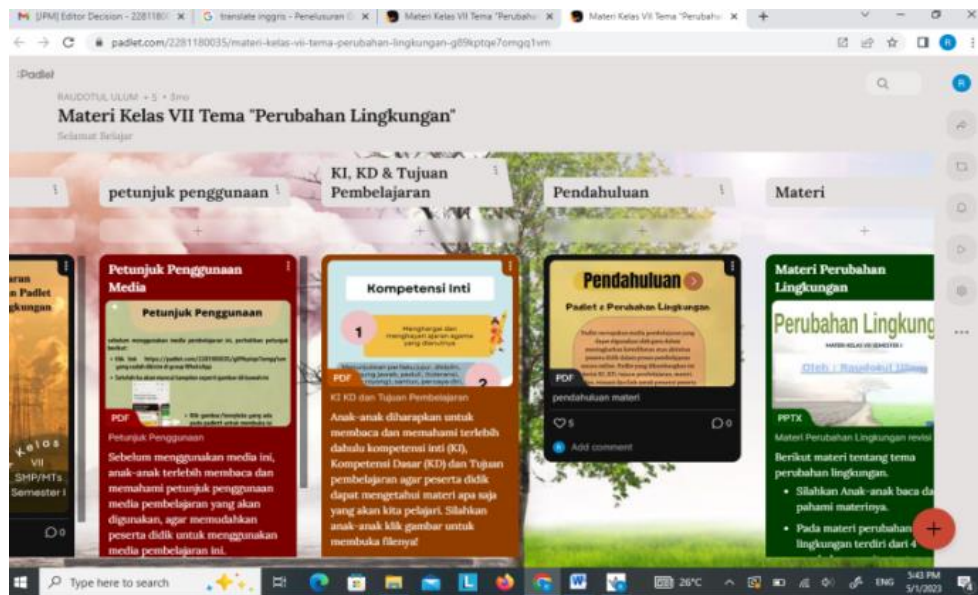


Figure 1. Display of the Developed Padlet Media

Based on this description, students' ability to think creatively needs to be grown so that students can solve a challenge found in learning activities and their life. Interactive learning media can attract students' attention so that students are motivated and can participate actively participate in science learning activities. The current study focuses on the Development of Padlet-Assisted Interactive Learning Media with the Theme of Environmental Change to Grow Creative Thinking Skills for Class VII Students.

## RESEARCH METHODS

In this study, the method used was the R&D (Research and Development) method which was based on research and development by Sugiono [7]. The steps include 1) potential problems, 2) data collection, 3) product design, 4) design validation, 5) product revision, and 6) media trials. The research location was conducted in 3 (three) junior high schools in Cilegon City. The object of this study is the seventh-grade students in the first semester.

This study aims to analyze the efficiency level of Padlet-assisted interactive learning media. Data was collected using qualitative data obtained from suggestions and input in the questionnaire sheet and quantitative data obtained from assessments in the questionnaire sheet. The instrument sheet is a closed questionnaire in the form of a Likert scale, with 4 rating scales, namely strongly agree, agree, quite agree, and disagree. The data obtained were then analyzed using descriptive analysis techniques.

## RESULTS AND DISCUSSION

In this study, the media developed was padlet learning media. The development was

carried out by adding several elements to the pallet media that the researcher had designed. The elements added in the development of this pallet include covers, KI, KD, instructions for using media, material in the form of power points, learning videos, and questions. In addition, the media presented also contains sound, animation, and images to make it more interesting. The following shows a display of the developed padlet media.

The media that has been designed is then validated and tested to determine its efficiency level. The following is an explanation of the results of the validation and trials of padlet-assisted interactive learning media.

## Results of Padlet Interactive Learning Media Validation

The validation of this Padlet-assisted interactive learning media was assessed by 5 validators, namely two lecturers, the first lecturer to validate the material, the second lecturer to validate it, and 3 educators as material and media validators. The results of the validation of interactive learning media assisted by Padlets on the theme of environmental change to foster the creative thinking skills of class VII students are presented in the following table 1. Table 1 shows that the media validation assessment received a score of 97.25% in the "Very Valid" category, and the material validation assessment received a score of 90.95%. The practicality of the information, the clarity of the presentation, and the language all play a role in the evaluation of material validation. The following figure displays the material validation findings.

Table 1. Validation Results of Padlet-Assisted Interactive Learning Media by Expert Validators

No.	Validator	Percentage	Category
1.	Material Expert	90.95%	Very Valid
2.	Media Expert	97.54%	Very Valid
	Keseluruhan	94.25%	Very Valid

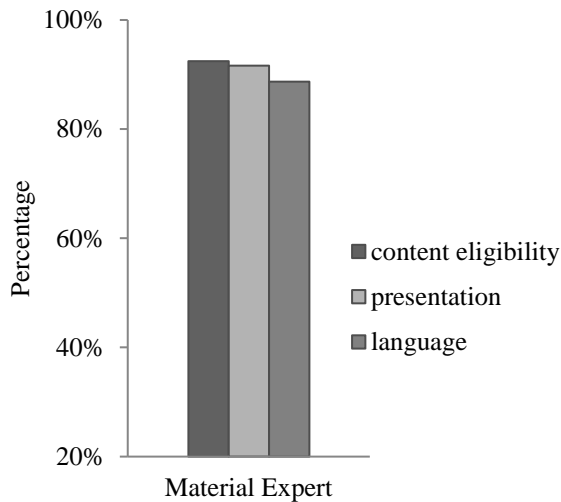


Figure 2. Validation Assessment on Material Aspects

Assessment of the feasibility aspect of the content gets a score of 92.46% in the "Very Valid" category; the assessment of the feasibility aspect of the content is obtained based on 5 indicators, namely the suitability of KI KD, material accuracy, material up-to-date, encourages curiosity and material suitability with creative thinking indicators. It shows that the contents of the Padlet learning media are appropriate. However, in this aspect, the maximum score has yet to be obtained because there are still deficiencies, such as the discussion of too shallow material, so it needs to be expanded and deepened. It is in line with the opinion of Camelia et al., who stated that if the material is presented too little, then the core competencies and basic competencies achieved will be lacking, and if it is too much, it will take time and energy to learn something, that does not have to be learned, so the material should not be presented too little or too much [8].

This assessment was based on four indicators, including presentation strategies, presentation, learning presentation, and thought flow coherence. The result for the presentation component was a score of 91.66% in the "Very Valid" category. The webbed learning model was used for packaging Padlet's content to foster active and creative learning. As a result, the webbed learning model can encourage students to engage in teaching and learning activities in the classroom actively. It is consistent with Armadi & Astuti's narrative, which claims that the webbed model is a learning paradigm that unites numerous fundamental skills under a single subject to make

learning enjoyable and capable of providing students with memorable experiences [9]. Thus students are expected to be able to obtain the theme of environmental change as a whole. However, in this aspect, the maximum score has not been obtained because, according to the validator, there are still deficiencies, such as the coherence between the topics that need to be clarified so that there is a connection between the material and one another, so it needs to be improved.

In the linguistic aspect, the score obtained was 88.72% in the "Very Valid" category. The language used in the Padlet is well structured communicatively to make it easy for students to understand the information the author conveys. This statement follows following Tarigan, which states that the language used in teaching materials must be easy to understand or communicative [10]. Communicative can be seen from understanding content or information and language politeness. However, in this aspect, the maximum score has yet to be obtained because there are still some words whose writing is still a typo or not quite right. And need to use dialogic and interactive language to make it more interesting. It is in line with the statement of the Ministry of National Education, which states that the language used in teaching materials should be able to arouse pleasure and stimulate students to be active in learning activities [11]. The language used in the pallet media follows good Indonesian rules and refers to enhanced spelling guidelines. Solchan stated that the language used must use standardized language [12].

Assessment of media validation is based on two aspects, namely, the graphic feasibility aspect and the media flexibility aspect. The following shows the results of the validation of the Padlet media:

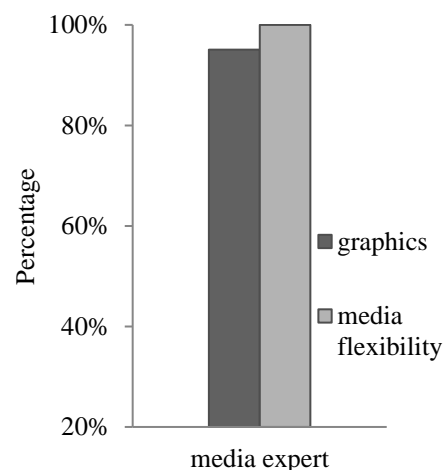


Figure 3. Rating Graph on the Media Aspect

Figure 3 shows that they scored 95.08% in the "Very Valid" category; this assessment is based on three indicators: the appearance of each media in the

Padlet, the initial display design, and the media content design. That means the Padlet media display is good. The initial appearance/cover on the Padlet already contains harmonious color, illustration, and typography elements, and the placement of the layout elements on the initial appearance of the media is also appropriate. Layout elements (titles, subtitles, illustrations) are consistently placed in each section of the media; this can be seen in the contents of the media; each title is always placed at the top position, then below the title, there is a subtitle and also an image as a compliment. The placement of illustrations as backgrounds does not affect the clarity of the text, making it easier for students to understand the contents of the material. However, in this aspect, the maximum score has yet to be obtained because, according to the validator, the images used in the material should be adapted to the current situation in the field so that students can more easily understand them. Marsella et al. argues that the images or illustrations used have a function, one of which is to make concepts more concrete to explain by using shorter and clearer illustrations of the concepts being explained [13].

The assessment on media flexibility gets a score of 100% in the "Very Valid" category; this assessment is based on one indicator, namely the ease of use of the Padlet media. Padlet media is very easy to reach because it can be accessed by everyone for free, both teachers and students, so it can be used to support learning activities, besides that Padlets can be used anywhere and anytime because Padlets are digital media, so using them is not fixated on space and time. It is in line with Masrah, who said that the Padlet application makes it easy to communicate between teachers and students or students and other students without being constrained by time and place [14]. In addition, according to the expert validator, the Padlet media is easy to use because the Padlet developed already contains instructions for using the Padlet, core competencies, basic competencies, learning objectives, and material. The material presented is also packed with interactive power points, which include pictures, videos, and animations so that they can attract students' attention so that students can understand the material being studied.

**Padlet Interactive Learning Media Trial Results**

The media that has been validated is then tested on students. The tested students were ten from class VII junior high school. The following table presents the results of student responses to Padlet-assisted interactive learning media.

Table 2 shows that the average value obtained in the Padlet-assisted interactive learning media trial was 89.93% in the "Very Efficient" category. The

assessment is based on 7 (seven) aspects, namely aspects of convenience, helpfulness, interest, liveliness, fun, media appearance, and aspects of creative thinking. It shows that Padlet-assisted interactive learning media can provide convenience and assist students in learning activities. The contents of the Padlet are also made interactive and interesting by displaying pictures, videos, power points, text, and audio so that students don't feel bored and can motivate students in learning activities. Aimah & Faradila stated that appropriate media is needed so that students will participate in learning with pleasure because there are media that support students' interest in learning so that it will produce a good output [15-17].

Table 2. Results of Student Responses to Padlet-Assisted Interactive Learning Media on the Theme of Environmental Change

No.	Aspect	Percentage	Category
1.	Convenience	89.38%	Very Efficient
2.	Help	93.75%	Very Efficient
3.	Interest	92.5%	Very Efficient
4.	Liveliness	90.83%	Very Efficient
5.	Happiness	87.5%	Very Efficient
6.	Media Display	89.69%	Very Efficient
7.	Think Creatively	85.91%	Very Efficient
Score		89.93%	Very Efficient

Padlet learning media also supports students in responding to each question presented because, in the Padlet, there is a comment column feature; through this feature, students can respond to questions posed by the teacher or friends. This statement is supported by the opinion of Al-ghozi et al., who stated that in the Padlet, there is a virtual space useful for discussion activities that can be accessed via devices connected to the internet. Therefore Padlets can be applied by teachers and students to assist in learning activities [18-21].

Regarding creative thinking, the percentage value obtained is 85.91% in the "Very Efficient" category. The assessment is based on the results of the four indicators assessed, which can be seen in the following figure:

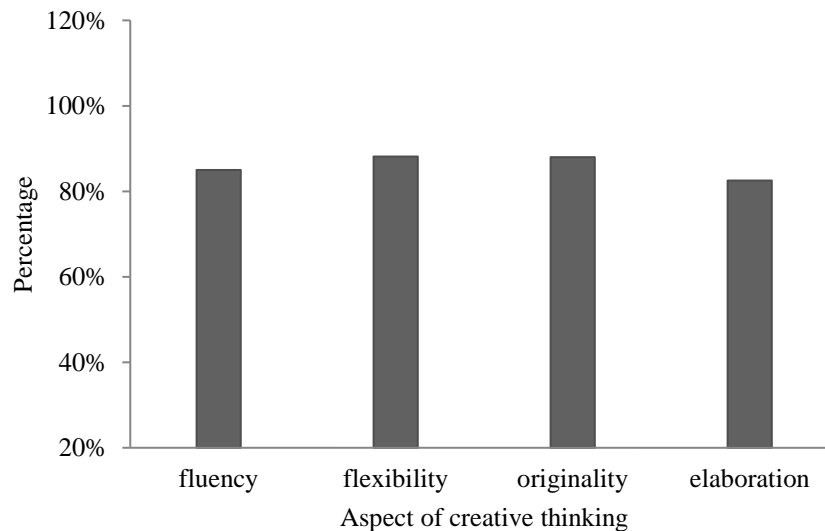


Figure 3. Graph of Student Response Results on Creative Thinking Aspects

The value obtained for this aspect of creative thinking is obtained from the average results of the 4 (four) indicators, namely the fluency indicator, which obtains a percentage value of 85% in the "Highly Efficient" category; the flexibility indicator obtained a percentage value of 88% in the "Highly Efficient" category. "Very Efficient," the originality indicator obtained a percentage value of 88% in the "Very Efficient" category, and the elaboration indicator obtained a percentage value of 82.50% in the "Very Efficient" category.

The ability to think creatively that wants to grow is fluency, in which students are trained to convey their arguments in learning activities by communicating the results of assignments given through video recordings. The flexibility of the ability to be trained, namely, students can produce ideas for various answers, to support students so that they can have these abilities is presented in investigative activities. The originality of the ability that students want to grow is generating new ideas in solving a problem; an observation task is presented. The elaboration of the ability that you want to grow is that students can detail an object or idea to make it more interesting. Students are tasked with analyzing videos about human activities that cause environmental changes to practice this ability.

## CONCLUSION

The research and development of interactive learning media assisted by Padlets on the theme of environmental change reached the "Very Valid" and "Very Efficient" categories, with the percentage value obtained in media validation that is equal to 94.25% and the percentage value in the media trial that is equal to 89.93%. So interactive learning media assisted by Padlets with the theme of environmental change is appropriate for fostering students' creative thinking abilities.

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