

Improved Learning Outcomes supported by Padlet Application- Based Learning Media

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ABSTRACT

This research has the aim of creating learning media products assisted by padlet, testing the validity of the media, knowing student responses, and learning outcomes before and after the use of learning media assisted by padlet applications in class X BD marketing basics subject SMK PGRI 2 Malang. This type of research uses R&D with the ADDIE model. Data collection was done by observation, interview, questionnaire, test and documentation. The results of the media expert assessment were valid, the material expert stated that it was very valid, and the student response was very interesting. The t-test results proved an increase in learning outcomes, where the learning outcomes after the use of the media increased compared to the results before the use of padlet learning media.

INTRODUCTION

With the rapid development of technology, the concept of internet-based learning is very important. Because technological progress is a worldly need so that technological progress becomes something that cannot be limited or avoided in today's life (Sanuhung et al., 2022). The advancement of information technology has a major positive impact on education (Khairuman et al., 2022). In the world of education, especially the learning process, information technology must be applied to assist students and teachers in accessing extensive and efficient learning resources. The development and advancement of information technology in education can change conventional learning patterns into interactive ones. Conventional learning patterns make teachers a source of information and students tend to be passive, lack motivation and the learning process becomes saturated (Yanuar & Pius, 2023). The impact of student learning outcomes does not increase so that it does not match the learning achievement target. The existence of technological advances allows for more intensive teacher-student interaction. One of the adaptations of technology in the world of education with applications as learning media. Interactive learning media can make the learning process more effective and interesting, so that students are actively involved in learning process activities.

Learning media becomes an intermediary in supporting teachers to convey and provide information to students during the learning process. (Syainatunnisa et al., 2024). Learning media has a role to create interactive and interesting learning conditions for students, so that the material is easier to understand. This is corroborated by the opinion of Nieto-Márquez (2020) digital learning media can provide feedback for students in making decisions and improving performance during the learning process. According to Holzberger (2013) Digital learning media is a delivery of material in the form of digital media via the internet such as text or images. In the learning process, teachers must be able to create various methods for students to have an interest in learning so that the material presented is easily understood (Sari et al., 2024). Interactive and interesting digital learning media needs to be developed so that interest in learning motivation increases and has an impact on learning outcomes.

One of the digital learning tools that can help the learning process in an interesting, interactive way is padlet application-based learning media. Padlet application is an internet-based learning tool developed by teachers to improve learning outcomes. Padlet application can overcome obstacles in a learning process such as the lack of active students by providing a virtual wall that students can use to contribute directly. Various features in padlet application help interactive learning, such as the ability to share text, images, videos, and links easily, and more easily express ideas and actively participate in discussions. In addition, using padlet app does not require much storage space (Hadi et al., 2022a). Padlet provides a virtual wall or free tool to support class attendance (Twiningsih, 2023). The padlet application has a feature to add a personal profile that users use to personalize their account and a search tool that makes it easy to search for specific content (Al-Fitrie et al., 2023). This padlet application will be suitable for use in supporting the learning process,

especially in marketing basics subjects. Students can increase their activeness and interest in marketing content through the features on the padlet.

Based on the findings of researchers during Teaching Assistance activities on February 19 - June 14, 2024, it shows that the learning process in class X BD in the subject of marketing basics is the learning process in the classroom is less interesting and quite boring so that students are less active in the teaching process. This can be seen from the lack of active participation of students during discussions and questions and answers during learning, as well as the lack of interest in learning and completing assignments. Students often become passive and wait for direction from the teacher so that they are not active in the learning process.

According to the results of interviews on September 25, 2024 with marketing basics subject teachers at SMK PGRI 2 Malang in class X majoring in Digital Business, it shows that the learning process is not going well. There are some students who still lack focus and interest in the learning process. Therefore, the learning outcomes of students to achieve the learning level do not meet the KKTP (Criteria for Achieving Learning Objectives) standard. This states that student understanding is still minimum and lack of interest in learning. This condition is caused by teachers at school still delivering material through learning media that tends to be monotonous, such as packet book media, google forms, google classroom and powerpoint media with the help of Gamma AI, where various media are less interesting so that they are quite boring which has an impact on the low interest of student motivation in the learning process.

Based on the above background, the researcher tries to develop interactive, effective and innovative Padlet learning media and present it in a new atmosphere with the aim that students can actively participate during the learning process and have a positive impact on improving learning outcomes.

LITERATURE REVIEW

Learning Media

The word “media” is a form of the plural word medium which comes from the Latin *medius* which literally means ‘intermediary’ or “mediator” (Sapriyah, 2019). Media can be interpreted as an intermediary or means of channeling information from the sender to the recipient. Media in the world of education, especially in the learning process, is used to facilitate the delivery of material effectively and efficiently. Meanwhile, learning is a conscious effort of the teacher in helping students to learn according to their needs and interests.

Learning media itself means everything related to software and hardware that can be used as intermediaries to convey the content of teaching materials from various learning sources to students so as to enable the learning process to take place to be more effective in order to achieve learning objectives properly. Learning media has an important role in improving the quality of education and teaching because it can facilitate teachers in explaining the subject matter well so that students can understand the material easily (Daniyati et al., 2023).

Padlet Application

Padlet application is a learning media application used to create a virtual wall where users can share various types of content such as text, images, videos, links and documents (Susanto et al., 2021). This padlet application is usually developed in education as an interactive learning media because it has features that can support student learning. The padlet application is suitable for use in the learning process because it has advantages, among others :

- 1) Padlets are easily accessible to both teachers and students.
- 2) The padlet application is flexible
- 3) Padlet has features that add images, audio, notes and videos that can be used to show the creativity of teachers and students
- 4) Learning results in this padlet application can be exported in the form of jpg or pdf and can be shared.
- 5) In this padlet application, there is a comment feature where teachers, students can interact directly and give feedback quickly.
- 6) The padlet application has a privacy feature where users can determine who can access the padlet application.

Besides having advantages, padlet applications also have several disadvantages, there are:

- 1) This padlet app has limited features in the free version.
- 2) Padlet application must have stable internet access and sufficient device tools.

Learning Outcomes

Learning outcomes come from 2 words, namely results and learning. The word result means something a person achieves after doing an activity. While the word learning itself means an activity that has the aim of obtaining changes in the behavior of each individual in the form of knowledge, skills, and attitudes during the learning process. This is in accordance with Hamalik's (2013) statement that a person will experience changes in behavior after learning. Therefore, learning outcomes can be defined as an achievement of a person's ability after participating in the learning process. In the learning process itself, learning outcomes mean the accumulation of numbers or values resulting from the assessment of learning (Novita et al., 2019). Increasing student learning outcomes depends on their interest, motivation, activeness and understanding of the learning material. According to Bloom's taxonomy theory, learning outcomes are achieved through three categories of domains, including:

- a) The cognitive domain, this domain includes 6 aspects of the level of learning outcomes including the realm of knowledge (C1), the realm of understanding (C2), the realm of application (C3), the realm of analysis (C4), the realm of synthesis (C5), the realm of evaluation (C6).
- b) Affective domain, this domain includes 5 aspects of the level of learning outcomes, namely acceptance, response, appreciation, appreciation and practice.

- c) The psychomotor domain, for this domain includes 4 aspects of levels namely imitation (P1), manipulation (P2), determination (P3), articulation (P4).

METHODOLOGY

This research uses the R&D method where this method is to make a certain design, media, or design and can check its validity and effectiveness. The model in this study utilizes the ADDIE model to develop learning tools and teaching materials.

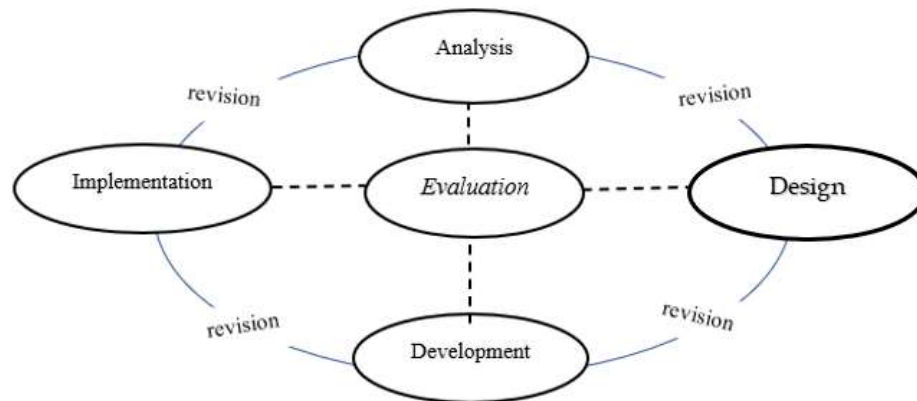


Figure 1. ADDIE Model

Source : Branch, 2009

In the analysis step, researchers conducted observations at SMK PGRI 2 Malang and conducted interviews with marketing basics teachers to identify problems that arose during the teaching process, especially in marketing basics subjects. The problem found was the lack of student learning outcomes and the learning media used daily in the monotonous learning process. At the design stage, researchers conceptualize the media design that will be made according to the learning objectives and desired learning outcomes. At the development stage, researchers began to take steps to produce Padlet application-based learning media according to previously designed concepts. At the implementation stage, researchers tested the media that had been made on class X BD students of SMK PGRI 2 Malang. At the evaluation stage, researchers conduct an evaluation or assessment by collecting data that has been carried out based on the previous stages for product improvement.

The data in this research were analyzed qualitatively and quantitatively. Qualitative data is in the form of interview results, criticisms and suggestions from media experts, material experts and student responses. The results of the interview were used by researchers as guidelines in developing learning media products based on padlet applications, while for criticism and suggestions were used to improve the products produced. Quantitative data was obtained from questionnaires filled out by expert validators, student responses and evaluation scores. Data collection is utilized in the form of observations, questions and answers, questionnaires, and tests. The formula for processing the results of expert validators and student response questionnaires is as follows:

$$Vah/Vp = \frac{Tse}{Tsh} \times 100 \%$$

Source : (Akbar, 2016)

Explanation =

- Vah : Expert Validation
Vp : User validation
Tse : Total score obtained
Tsh : Total maximum score obtained

Data analysis of learning outcomes was processed using the normality test and t-test utilizing the SPSS application.

RESULT

Analysis

The analysis stage by means of observations and interviews with Marketing Basics subject teachers in class X BD SMK PGRI 2 Malang, shows that there are problems that have an unfavorable impact on student learning outcomes. These obstacles are during the learning process students lose focus on learning / concentration, lack of active participation during discussions and questions and answers, lack of interest in completing assignments and lack of interesting learning media..

Design

At this stage, the researcher drafts the content design by creating a story board with the aim of describing the flow of the learning media creation process more structured. The next stage, determining the material content of each element that will be included in the padlet application-based learning media. The material content is in the form of text, images, and videos that are in accordance with the learning of each element.

Development

In this step, the process of developing learning media products assisted by padlet applications in accordance with the previous design concept is carried out. The following is the media display made:

Early view

The initial display is the initial page that exists when the padlet application is opened. In the initial appearance of this padlet-assisted learning media contains pages about student attendance lists, learning objectives, triggering questions, powerpoints, learning materials, learning videos and learning evaluations. The following is an example of the initial appearance of each element content:



Figure 2. Landscape Early View

Material Display

The display contains material for each element. This page contains material in accordance with the learning objectives of each element. Here's an example of how it looks:



Figure 3. Portrait Material Display

The following is a presentation of the results of the expert validator questionnaire and small group student responses:

Table 1. Data Analysis Results

No.	Validation	Score (%)	Criteria
1.	Media Expert	76 %	Valid
2.	Material Expert	87 %	Very Valid
3.	Small Group Student Response	91%	Very Attractive

Source: processed by researcher, 2025

Based on the data above, it can be analyzed that padlet-assisted learning media is valid for use. In addition, researchers made improvements on suggestions from expert validators and small group student responses.

Implementation

At this stage, the padlet product is implemented to students during the teaching process. The subject of this learning media product trial was 34 students of class X BD SMK PGRI 2 Malang. This product trial was carried out to determine student responses and learning outcomes in using learning media based on padlet applications. Students are directed to use padlet as learning

media, starting from studying material, learning videos, discussions, and working on learning evaluations. This learning evaluation contains a posttest with HOTS questions in the form of multiple choice levels C4 and C5. After the implementation of padlet media, X BD students were directed to fill in responses through an online questionnaire (G-form).

Evaluation

In this final stage, researchers analyzed data on student responses and learning outcomes before and after using this media product and found out suggestions or criticisms about the media that had been made. The results of the analysis of student responses were 84% stated that the padlet media was interesting to use.

Analysis of Student Evaluation Results

The results of analyzing student evaluations by comparing the average score before and after the use of padlet application-based learning media. The data obtained before the use of the media was 66 and after use increased to 93. According to this data, it is concluded that there is an increase in the value of learning outcomes after the use of padlet media.

To determine the status of data normality, Shapiro-Wilk normality was tested with SPSS. The following are the results of the Shapiro-Wilk normality test:

Table 2. Normality Test Results

Value	Tests of Normality					
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Before	.146	34	.063	.961	34	.256
After	.118	34	.200*	.953	34	.153

*. This is a lower bound of the true significance.
 a. Lilliefors Significance Correction

Data source: SPSS Normality Test Data (2025)

The data above shows that the significance value (Sig.) for the value before is 0.256 while for the value after is 0.153. Based on the criteria, if the significance value (Sig.) ≥ 0.05 then the data distribution is normal.

The data on learning outcomes that have been distributed normally, after that the data is analyzed using the Paired Sample T-Test to show the difference in learning outcomes after using padlet media.

The following are the results of the Paired Sample T-Test data processing:

Table 3. Paired Sample T-test Results

Paired Samples Test				
Paired Differences	t	df	Sig. (2-tailed)	

		Mea	Std.	Std.	95%				
		n	Deviatio	Error	Confidence				
			n	Mean	Interval of				
					the				
					Difference				
					Low	Upp			
					r	er			
Pai	Learning	-	17.22795	2.954	-	-	-	33	.000
r 1	Outcome	2.74		57	33.48	21.45	9.		
	s Before -	706E			170	947	29		
	Learning	1					8		
	Outcome								
	s After								

Data source: SPSS data Paired Sample T-Test (2025)

Table 3 above describes the results of learning evaluation in class X Digital Business has a significant difference in learning outcomes.

DISCUSSION

Padlet Application Assisted Learning Media

Padlet learning media products focus on two elements, namely, elements of health, safety and security procedures at work and elements of consumer behavior. This padlet application-assisted learning media product is expected to be an alternative in supporting interactive learning and can support the improvement of student learning outcomes.

In the world of education, this technological development is used in the creation of interactive learning media (Rahayu & Ulumiyah, 2021). This padlet-assisted learning media can be accessed through an android smartphone. This media is designed with a background with attractive colors and clear writing so that it can increase visual appeal and help make learning more attractive. This media has several uniqueness including:

1. Padlet application-based learning media provides material content in the form of text, images, and videos to support student learning. The material in this padlet application-based learning media can be downloaded in the form of pdf or image (jpg) so that students can review learning materials without having to open the padlet application online.
2. Padlet application-based learning media has a board feature where this feature is a virtual board used by users to upload various types of content in one view.
3. Padlet app-based learning media provides a comment feature where learners can upload their comments for discussion. Teachers and students can write and upload any post in padlet openly.
4. Padlet-based learning media has a share link where this feature can facilitate learners in accessing. and users do not need space storage.
5. This padlet application-based learning media also provides privacy features where users can control the accessibility of content, such as who can view, edit or comment on materials that have been shared.

The development of learning media assisted by this padlet is useful because it can facilitate students in the learning process in class X BD and support student learning outcomes. This is according to research from Syainatunnisa et al. (2024), which explains that padlet media is proven media that can support a more interactive and interesting learning process Hardika et al. (2024), which describes technology-assisted learning media used in the learning process.

Feasibility of Padlet Application Assisted Learning Media

The validity of this media padlet is based on the assessment of expert validators. In terms of appearance, this media is quite suitable with the background color and the use of fonts, as well as for the selection of clear images and videos. Padlet application-based learning media is easy and flexible in its operation. However, there are suggestions from media expert validators, that the learning evaluation section needs revision, where the evaluation can be made more interesting by integrating with other applications such as quiz, kahoot, and others.

For the assessment of learning materials, it was declared very valid. The learning materials are complete, clear and in accordance with the learning objectives of each element. The use of language in the material is appropriate and easy to understand. Images and learning videos in the material are also in accordance with the material. In addition, the learning evaluation questions are in accordance with the learning objectives of each element and the level of difficulty of the questions is appropriate to measure students' abilities. However, the material expert validator suggested providing examples in real life or more contextualized.

Therefore, overall the learning media assisted by the padlet application is declared valid for use but there are some improvements in order to increase effectiveness in the learning process. After being declared feasible, this media product can be implemented by educators as a tool that supports student learning activities. In addition, this media can be used by teachers as a tool to deliver material in a more interactive, interesting, innovative and flexible manner. This learning media product can also be applied to various methods such as group discussions and self-study through the available features. This padlet application-based learning media is presented as interesting as possible by presenting learning content in the form of text, images, and videos to make it easier for students to understand the material of each element and increase learning achievement.

This is in line with several studies including Agustiningrum et al. (2021) , which states that padlets are very feasible to use in learning. Research from Khairuman et al. (2022), stated that the padlet media is considered feasible and can be used in the teaching process. Research from Simanjuntak & Naibaho (2023), stated that the padlet application is feasible to be field tested. (Artanto et al., 2022; Savitri et al., 2024) stated that padlet learning media is feasible to use with good qualifications. There is also, research Kasih et al. (2023) shows that padlet media is practical to use during the learning process. Research from

(Pratama & Nuryadi, 2022; Rahmawati et al., 2024) also stated that padlet media is more effective than the use of other applications.

Student Response to the Use of Learning Media Assisted by Padlet Application

The results of student responses to this media are very valid and well utilized. Students rated the learning media assisted by padlet application as interesting and easy to use. The clarity of the material presented in the form of text, images and videos supports a thorough understanding of the concept while the simple and communicative language in making the material can be better understood by students. In addition, the interactive features available such as comments, can make students more active in asking questions, discussing and developing an understanding of the material taught. This padlet application-based learning media helps in facilitating the learning process in class and independently. Flexible access and supportive features are one of the factors for this padlet application-assisted learning media to be favored, students can repeat the material at any time and can actively interact with the teacher and between students.

Students' interest can be seen from their attitude and behavior during the learning process. Students become more active in asking questions, expressing opinions and discussing, which shows that this padlet media increases involvement in learning. Some students also revealed that the use of padlets can foster their interest and motivation in learning, because the material presented is more interactive, not boring and easy to understand. A modern and flexible approach to learning can make students excited to follow the learning process, and provide a fun learning experience. The padlet learning media produced does not function as supporting media only but also as a tool that can encourage students' learning independence.

According to students' responses, it can be concluded that this padlet media can be used. This research is relevant to the results of (Rahmawati et al., 2024; Roshidah & Rahayu, 2022), stated that the results of the student response trial were categorized as good and interesting. Research by Rashid et al. (2019) stated that the padlet application can motivate students. Other research Qulub & Renhoat (2020) explained that padlet can attract students' interest. Research from Widiatmoko et al. (2024) shows that padlet media can make students enthusiastic during the learning process. This is reinforced research from Nurlaella & Susilo (2023), which shows that the utilization of padlet media gets a good response from students and the teaching process is more enjoyable.

Differences in Student Learning Outcomes in the Utilization of Learning Media Assisted with Padlet Applications

The results showed a comparison of achievement scores before and after the use of media, which is indicated by the average score after the use of padlet application-based learning media is higher than the score before the use of learning media. This increase confirms that the padlet application learning media not only adds to students' experience but can improve in-depth understanding of the material through interactive features provided by the padlet application.

The diversity of learning content in this application can provide fun learning participation and help students understand the concepts taught more easily. Therefore, padlet-assisted learning media is utilized as a supporting tool in the teaching and learning process to support the learning outcomes of X BD students of SMK PGRI 2 Malang. Learning media assisted by digital applications can create an interactive learning environment, so that students are more active in exploring the material and are involved in the learning process. The padlet application offers interactive features where students can collaborate, share opinions and can access various learning resources flexibly.

This is in line with several studies including research Fitri et al. (2024), explained that the use of padlet media can support student learning outcomes. Research from Susanto et al. (2021) explained that padlet media can improve students' abilities. Research Simanjuntak & Naibaho (2023), stated that the padlet application learning media is effective for increasing student enthusiasm for learning so that there is an increase in learning outcomes. Research Pratama & Nuryadi (2022), stated that the average student score after using padlet media increased. Research from Nurlaella & Susilo (2023), states that there is a significant difference in the use of padlet media. Research from Widyanto et al. (2021), stated that the average student learning outcomes in each cycle increased.

CONCLUSIONS AND RECOMMENDATIONS

The conclusions in this study are: learning media products assisted by padlet applications in marketing basics subjects with two elements, namely K3 procedure elements at work and behavioral elements declared valid with very valid material presentation. Based on this, learning media based on padlet applications are said to be feasible as learning media. Student responses obtained through small group and large group tests stated that padlet media was very interesting to use in the classroom and independent learning process. There are changes in learning outcomes after the use of this media which can be seen from the average posttest score higher than before the use of learning media based on the results of the Paired Sample T-Test test which shows a significant difference in student learning outcomes.

ADVANCED RESEARCH

This research still has limitations, further product development suggestions given by researchers for further developers, as follows:

- a) This product was developed specifically on the elements of K3 procedures in Work and elements of consumer behavior. so that the hope is to develop learning media for other elements or other subjects.
- b) Future researchers are expected to have better creativity in making learning content in the Padlet application in terms of appearance, content, and material.
- c) Evaluation of learning outcomes should be oriented towards evaluation with High Order Thinking Skills (HOTS) results in order to train students to always think critically.

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