Padlet Application-Based Media on Many Facets Building Materials: Learning Media Innovation for Elementary Schools

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ABSTRACT

This research is motivated by the needs of educators at SD Negeri Kepuh Kiriman 1 where educators need distance learning media that can group learners' answers and not make educator storage memory full quickly. The purpose of this development research is to describe the development process. This study uses a type of Research and Development (R&D) research. This development research is adapted from the ADDIE development model (Analyse, Design, Develop, Implementation, and Evaluation), but is limited to the development stage. Data collection methods use documentation and questionnaires. The data analysis techniques used in this study use descriptive analysis to describe quantitative processes and analysis to determine product feasibility. The results showed that the product was developed through three stages, namely the Analysis stage (it takes a virtual distance learning media without a virtual face-to-face that can provide a concrete picture for class IV learners), Design (in the form of an initial framework in which it contains the content and content of Padlet digital learning media), Development (in the form of products resulting from the development of padlet application-based learning media on many facets of building materials).

Keywords: digital learning media; padlet; Build a lot of things.

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INTRODUCTION

Technological developments in the era of the industrial revolution 4.0 today make various changes to human life. In line with that Rachmadullah, et al (2020) said the development of education in the world always goes hand in hand with the development of the industrial revolution, because indirectly the technological development that occurs not only changes the economic order but also changes the educational order in a country. Aziz (2019) added that the development of the industrial revolution 4.0 also changed people's lifestyles, and culture to experience a shift from print media to digital media (digital era). As is the case in the field of education began to develop digital libraries that provide digital books (e-books) Makdis (2020).

Changes in the education sector do not only occur in printed books that become digital books. Technological developments in the education sector also bring benefits to learners and educators. As explained by Nasution (2018), the use of technology in the learning process brings benefits to students, including increasing motivation, attention, concentration and independence, as well as benefits for educators include reducing the use of time to deliver subject matter, making the learner's learning experience more enjoyable, and being able to package materials as attractive as possible.

The ability of educators in integrating technology into the learning process can be seen from the ability of TPACK (Technology Pedagogy and Content Knowledge) possessed by educators (Sintawati & Indriani (2019)). Pareto & Willermark (2018) added that TPACK is a theoretical framework (Framework) that contains technology (Technology Knowledge), pedagogy (Pedagogy Knowledge), and content / knowledge materials (Content Knowledge), and has a purpose building knowledge in the digital age.

From the results of research conducted by Baktiningsih, Reffiane, & Susanto (2020), the activities and learning outcomes of learners increased significantly after applying the TPACK approach. Obtained similar results in his research Fitriani (2020) He added that this is inseparable from the use of interesting learning media and integrating technology. This opinion is reinforced by Jennah (2009) learning media plays an important role in the process of transferring knowledge or channeling messages from educators to students.

Covid-19 Pandemic forces schools to shift learning in person or face-to-face to distance or virtual face-to-face learning (Saputra, Hikmah, Yustitia, Saoutra, & Wahab (2021)). In line with that Busa, Agusriandi, Elihami, & Mutmainnah (2020) added that the learning media distribution has become even more important in the current Covid-19 outbreak conditions to still be able to run distance learning and achieve learning goals. Like
one of the objectives of elementary mathematics learning presented by the Ministry of Education and Culture in Susanto (2013), students can determine the nature and elements of various flat wakes (wake up in terms of a lot).

In this multifaceted building material Ardilo (2019) in his research revealed that many mismatches of the learning process implemented by educators with the learning process expected by students. This causes many learners to be less motivated, and less interested in the learning process, so many learners pay less attention when the learning process takes place. so that many learners are still confused by the material of building a lot. This is similar to the results of observations made by researchers at SDN Kepuh Kiriman 1 on April 1, 2021 where class IV-D learners are less interested in building materials, thus causing misconceptions about the nature of the irregularity of the multifaceted body and the irregularity of the many-faceted wake. To deal with these conditions, achieving learning goals, and maintaining health in this pandemic condition, learning media are needed that can run distance learning process, as well as integrating technology to motivate, and attract the attention of learners. Maharani, et al (2021) added that in this Covid-19 pandemic, elementary school educators in Surakarta took advantage of TPACK’s ability to carry out distance learning. Educators use WhatsApp as a learning medium because it is widely used by learners and parents of learners, educators also take advantage of face-to-face meetings. Virtually use zoom meetings once a month. The obstacles experienced by educators are fast-running internet quotas and full fast storage memory. In contrast to the opinion above Kusmiharti & Yustitia (2020) said digital learning media is effective for use in distance learning mathematics. This is indicated by the increased problem-solving ability of learners.

The results of observations made by researchers at SDN Kepuh Kiriman 1 on April 1, 2021 showed that virtual face-to-face distance learning cannot be done in all classes. This is because after some time starting online learning remotely face-to-virtual educators receive various inputs from parents of learners. Parents of learners ask for learning to continue but not through virtual face-to-face and suggest assignments only, because many learners do not yet have their own smartphones, and to do learning learners must wait for their parents to finish work. Educators agree to that however, providing a condition that in one week there is one virtual face-to-face meeting to discuss material that has not been understood by learners. .

Educators use WhatsApp to start distance learning. The way of learning is to send materials and tasks that will be taught into WhatsApp groups, and for collection usually through photos of tasks or videos of student activities in home. Educators realize that
WhatsApp is not a suitable learning medium to start distance learning because when educators post assignments, and learners answer, educators post, educator posts will be hoarded by the learner's answer. In addition, educators complain about the rapid storage of educator device memory that is full of learner tasks.

Based on the background description above, researchers offer padlet application-based digital learning media solutions. This is because by using Padlet educators can start the process of distance learning, educators can group learners' answers by asking learners to in response to educator posts in the comments field, Padlet can be used as cloud storage or can be linked to other cloud storage to save the educator's device memory storage, and pack it as attractive as possible. As stated by Indrasari (2019) Padlet can be used to create a virtual wall and can be used to accommodate tasks, as well as run the learning process.

With the purpose of this research is as follows: 1) To describe the process of developing digital learning media Padlet on a multifaceted building material. 2) To find out the feasibility of padlet learning media development products valid for use in many facets of building materials.

**METHODS**

This type of research is development research (R&D). Development research in the scope of education is used to overcome problems that occur within the scope of education. The development model in this study uses the ADDIE model. Quoted from the book by Suryani, Setiawan, & Putria (2018) explained the steps implemented in the development of learning media: **Analyze** (analysis), **Design** (Design), **Develop** (development), **Implementation** (implementation), and **evaluation** (evaluation).

![Figure 1. ADDIE Development Model Steps](https://jurnal.ustjogja.ac.id/index.php/union/)
**Padlet** application-based digital learning media development research procedures on many facets of building materials that refer to ADDIE procedures, but are limited to 3 stages of development, namely *Analyze* (This stage is used to determine subjects, Analysis of Core Competencies (KI), Basic Competencies (KD), indicators, learning objectives, analysis of multimedia needs, and analysis of needs to be adjusted to the level of ability and activities that will be conducted by students), *Design* (This stage is the planning stage of learning media design designed in accordance with KI, KD, indicators, and learning goals to be achieved, adjusted to the level of ability and activities that will be carried out by students), and *Develop* (This stage includes material collection, product manufacturing, evaluation of expert lecturers, to product improvement based on suggestions and criticisms from expert lecturers). This is due to limited research time. The data collection methods used in this development research are observations at SDN Kepuh Kiriman 1, documentation of the annual mathematics program class IV-D SDN Kepuh Kiriman 1, and product feasibility questionnaires.

The assessment instrument in this learning media development research is based on the criteria for the selection of learning media. Learning media selection criteria can be seen from three aspects, namely the display aspect, the material aspect, and the language aspect. The data analysis technique in this research uses development process analysis techniques in the form of semester program documentation and annual program Class IV-D SDN Kepuh Submission 1 and data collected from the review results in the form of improvement suggestions from validators and feasibility analysis is used to manage quantitative data validation results to know the decision making in improving the product developed. The calculation of validation results in this study uses the likert scale formula adapted from (Suharsimi (2014))

\[
P = \frac{\sum x}{\sum x_1} \times 100
\]

**Information:**
Q: Eligibility
\(\sum X\) : Answer to the total number of validator scores
\(\sum X_1\) : The highest number of answers

To determine the validity of the media using the criteria for scoring the validation results as follows.
Table 11. Validation result scoring criteria

<table>
<thead>
<tr>
<th>No.</th>
<th>Score</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>81-100</td>
<td>Very Valid</td>
</tr>
<tr>
<td>2.</td>
<td>61-80</td>
<td>Valid</td>
</tr>
<tr>
<td>3.</td>
<td>41-60</td>
<td>Valid Enough</td>
</tr>
<tr>
<td>4.</td>
<td>&lt; 40</td>
<td>Invalid</td>
</tr>
</tbody>
</table>

Adapted from (Afriani & Fitria, 2021)

This research involved three expert validators as follows: Dr. Reza Rachmadtullah, S.Pd., M.Pd. as a media expert validator, Inayatul Adhimah, S.Pd. as a material/content expert validator, and Cholifah Tur Rosidah, S.Pd., M.Pd. as a linguist validator.

RESULTS AND DISCUSSIONS

Result

The results of this study researchers outline the process of media development based on the ADDIE model (Analyze, Design, Develop, Implementation, and evaluation), but limited to the Develop stage as follows:

1. Analysis

At this stage, the researcher performs three stages of analysis, namely needs analysis, characteristic analysis and content analysis. From the needs analysis, researchers found that educators at SDN Kepuh Kiriman 1 used WhatsApp social media as a digital learning medium to start distance learning in a-synchrony. Educators have obstacles when educators post assignments educators will be hoarded by learners' answers. In addition, educators have obstacles to the rapid storage of educator device memory that is full of learner tasks.

In the analysis of the characteristics of researchers found that the characteristics of class IV-D students of SDN Kepuh Kiriman 1 have entered the stage of concrete operational development as well as students of class IV elementary school in general, Jean Piaget in (Nurdyansyah, 2019) where at this stage in understanding something learners need a concrete picture (real objects). From the observation results made by students of class IV-D SDN Kepuh Kiriman 1 are familiar and accustomed to the use of technology, students can already search for information from the internet and are accustomed to doing and sending tasks via WhatsApp.

In the analysis of the content of researchers get the subject to be studied is mathematics, with a lot of learning content. In the annual mathematics program class IV-D SDN Kepuh Submission 1 semester II of the material is limited to KI and KD, therefore
researchers develop indicators and learning goals that are in accordance with the KI and KD. Here are the indicators and learning objectives that have been developed by researchers:

Table 22. Basic Competencies and Learning Objectives

<table>
<thead>
<tr>
<th>Basic Competencies</th>
<th>Learning Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8</td>
<td>Distinguishing the properties of many irregular and irregular facets.</td>
</tr>
<tr>
<td></td>
<td>Distinguishing the nature of flat wake is not a lot, build flat aspects of irregularity, and build flat irregular many facets. (C4)</td>
</tr>
<tr>
<td></td>
<td>Making conclusions about the material build a lot. (C6)</td>
</tr>
</tbody>
</table>

Table 33. Basic Competencies and Learning Objectives

Learning Goals

a. Through question and answer activities and observing videos about the many facets that have been provided by educators on the Padlet wall, students can classify objects around that are in the form of a proper multi-faceted wake.

b. Through question and answer activities and observing videos about the many-sided building that educators have provided on the Padlet wall, students can distinguish the exact nature of the many-sided building.

2. Design

At this stage of the design, the researcher determines the content and materials (both images and videos) to be included in the Padlet application-based digital learning media. At this stage researchers are also integrating 4C (Critical Thinking, Creativity, Communication, and Collaboration) skills into the initial framework of Padlet's application-based digital learning media. Padlet application-based digital learning media design will be equipped with the title of the material, namely "Build a Lot of Facets". Learning media uses a list template so that each post or content added is neatly arranged as below screenshot shown. Learners can respond, comment, or ask educators through the comments field.

Figure 1. Padlet view with list template

Figure 2. shows in the opening section of padlet application-based digital learning media. The opening part of the padlet learning media includes usage procedures, KI, KD, Indicators, learning objectives, and a-perception.
After the opening part, continue with the core part of padlet application-based digital learning media. This core section contains subject matter packaged in the form of YouTube text, images, and videos. YouTube videos linked to Padlet can be spared from YouTube ads. The video view will be as in Figure 3.

![Figure 2. YouTube video view inside Padlet](image1)

![Figure 3. View of images uploaded to Padlet](image2)

At the end, it contains a description of the tasks of learners. The tasks of these learners will be linked to Google Form by clicking on the yellow writing as in Figure 4.

3. Development

Researchers develop learning media in accordance with the design that has been designed. Researchers also outline the feasibility of development products. Validity data is obtained from the results of three experts, namely two expert lecturers and one educator. From the results of validation of experts, quantitative data and qualitative data will be obtained. Quantitative data is obtained from the assessment questionnaire using the likert scale, while qualitative data is in the form of input or suggestions and criticisms from validators.

From the results of validation of digital learning media based on padlet application on the material build a lot by media experts, materials, and language above. The following are the product validation results presented in the form of a table.

<table>
<thead>
<tr>
<th>Expert Table</th>
<th>Score Table</th>
<th>Criterion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Media Expert</td>
<td>77,5</td>
<td>Valid</td>
</tr>
<tr>
<td>Material Expert/ Content</td>
<td>90</td>
<td>Very Valid</td>
</tr>
<tr>
<td>Linguist</td>
<td>90</td>
<td>Very Valid</td>
</tr>
</tbody>
</table>

Table 4.4 Validation results table
Based on Table 4, media experts state that the product has been valid for use with some revisions, the material/content expert stated that the product is very valid for use without revision, and the linguist stated that the media development product is very valid for use without revision. The following are some product revisions according to the advice of media expert validators presented in Table 5.

Table 5. Product Revisions

<table>
<thead>
<tr>
<th>No.</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Pay attention to typography (words using The Inggrih language must be italicized).</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Tidy up the writing (make it flat left-right).</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Sync the color of the entire post.</td>
<td></td>
</tr>
</tbody>
</table>
Discussion

Research on the development of padlet application-based digital learning media in this multi-faceted building material produces products in the form of padlet application-based learning media in many facets of building materials. The product has been passed through the validation process by media experts, material/content experts and linguists. Media experts state that the product developed has been valid for use with several revisions including typography, untidy writing (flat left), and synchronizing colors on each padlet post. Researchers have revised the product development results according to the advice of media experts. Material/content experts state that the product developed is very valid for use. Similarly, linguists state that the product is already very valid for use. This is in line with research related to the use of padlet media conducted by Siskaliani, Jerenah, & Ramadhana (2021) entitled the influence of the use of e-learning learning models by using padlet media on mathematics learning outcomes in high school students YP PGRI 3 Makassar. This study obtained quite satisfactory results, namely the results of learning mathematics of learners who were taught with an e-learning model using padlet media higher than the learning outcomes of learners who were taught with a direct learning model. Learners also gave quite positive to the e-learning model using padlet media, which was 67.8%.

CONCLUSION

Based on the development process and data on the results of the validation test of digital learning media products based on padlet applications on the building material, many conclusions were obtained as follows. Padlet application-based digital learning media on many facets of building materials is developed based on the ADDIE model (Analyze, Design, Develop, Implementation, and Evaluation). The development stage is limited to the Analyze (Analysis), Design (Design), and Development (development) stages. The development process carried out is as follows:

a. Analysis, at this stage researchers obtained the results of the analysis that educators at SDN Kepuh Kiriman 1 need a digital learning medium with communicative characteristics to do distance learning and run in asynchronous manner that can provide concrete images for class IV-D learners.

b. Design, at this stage the researcher creates an initial framework in which it contains content and content that will be in padlet digital learning media based on the results of the analysis.
c. Development, at this stage researchers develop designs that have been made into padlet, conduct validity tests, and revise according to the advice of the validation test results, to produce products that result from the development of padlet application-based digital learning media on many facets of the building material.

REFERENCES


