

Research Article

Development of Islamic-based interactive Powerpoint learning media on the material of many-sided flat buildings grade 4 Primary School

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ABSTRACT

Nowadays, the development of education is influenced by the rapid advancement of information and communication technology. One of them is affecting the development of learning media. The learning process can now be carried out by utilising various learning media, one of which is interactive powerpoint. The use of learning media to support the learning process needs to be developed in the education system. Learning media can be made using various applications, one of which is Microsoft Powerpoint. This research is included in the type of development research or commonly called RnD (Research and Development) by taking the ADDIE development model. The ADDIE development model includes five stages, namely analysis (Analysis), design (Design), development (Development), implementation (Implementation) and evaluation (Evaluation). From the five stages in the ADDIE model above, researchers only carry out up to the implementation stage, due to the lack of time so it is not possible to carry out all the stages. The interactive powerpoint learning media for mathematics on the material of flat faceted shapes has been successfully developed. With the acquisition of the percentage value of three expert validations classified as high at 92% and the acquisition of practicality tests from students showing very practical results of 93.3%, then based on these gains the learning media can be categorised as feasible for use in learning. Furthermore, it can be suggested to teachers and students to be able to utilise it as an alternative media in learning mathematics material of many-sided flat shapes.

Keywords: Learning Media; Interactive Power-Point; Maths; Primary School

1. INTRODUCTION

Nowadays, the development of education is influenced by the rapid advancement of information and communication technology. One of them is affecting the development of learning media. The learning process can now be carried out by utilising various learning media, one of which is interactive powerpoint. According to (Tafonao, 2018) The use of media will increase student learning motivation, improve speaking and writing skills, and excite the imagination. The use of learning media is also able to increase students' learning motivation. (Amanda *et al.*, 2019). Learning media is a tool for disseminating educational messages (Kamil, 2019). Mathematics has a big role in the development of elementary school students' reasoning. Since mathematics is a tool to shape students' everyday thinking, it should be introduced to students early on. (Maharani *et al.*, 2017).. So that students can learn information effectively, educators must always use creative teaching methods in the teaching materials provided to students. (Dewi Yuli Setyoningrum *et al.*, 2022; Kahfi, 2021).

The use of learning media to support the learning process needs to be developed in the education system (N. L. P. S. Dewi & Manuaba, 2021). Based on the results of interviews with fourth grade teachers of SDN Kaliglagah 04 Sumberbaru Subdistrict, it was found that in reality the use of technology-based learning media is still minimal. Learning media still use conventional media such as blackboards and supporting books from the government. So that students have difficulty in understanding mathematics lessons, especially in the material of many-sided flat shapes and have an impact on student learning scores or results. Students' poor mathematics learning outcomes are caused by various factors, one of which is the selection of learning media used by the teacher. (Sakiah & Effendi, 2021).

One of the efforts in overcoming these problems can of course be overcome in several ways, one of which is by developing learning media that utilise multimedia technology. Learning media can be created using various applications, one of which is Microsoft Powerpoint. This application can make it easier for teachers to create learning media by combining all

elements such as image, text, audio, and video objects so as to create interesting learning media. So far, PowerPoint is only used as a one-sided presentation tool (non-interactive), with students passively listening or watching rather than actively participating in the learning process. (Dila Rukmi Octaviana *et al.*, 2022). Power Point presentation materials are intended for interactive learning so they are created and equipped with controls that can be operated by the user, allowing users to choose the instructions, content, and practice questions they prefer (Andriani & Wahyudi, 2015). (Andriani & Wahyudi, 2016). In addition, to realise the objectives of national education where one of them is to believe and fear God Almighty. Then we can combine interactive powerpoint learning media with Islamic values. This effort is expected to foster a sense of faith and devotion in students.

This interactive powerpoint learning media development research is in line with research conducted by (Wijayanti & Christian Relmasira, 2019) with the acquisition of material expert validation of 75.5% in the high category and the acquisition of media expert validation of 46.25% in the high category. Then the use of powerpoint media also has an impact on student learning outcomes with the acquisition of an average score before the use of powerpoint media of 76, and after the use of powerpoint media the average score increases to 88. (Sapartien, 2017). In addition, the use of powerpoint media also makes learning practical (M. D. Dewi & Izzati, 2020). Based on previous research, it can be seen if powerpoint learning media is feasible to develop. The point of differentiating this research from previous research is that in this study, interactive powerpoint learning media was developed and focused on the subject of Mathematics, the material of flat faceted shapes for grade IV students at the elementary school level. This research aims to describe the process of developing interactive powerpoint learning media.

2. RESEARCH METHOD

This research is included in the type of development research or commonly called RnD (Research and Development) by taking the ADDIE development model. The ADDIE development model includes five stages, namely analysis (Analysis), design (Design), development (Development), implementation (Implementation) and evaluation (Evaluation). (Cahyadi, 2019). From of the five stages in the ADDIE model above, researchers only carry out up to the implementation stage, due to lack of time so it is not possible to carry out all stages. This study took the subject of fourth grade students of SDN Kaliglagah 04 Sumberbaru District. This research was conducted from May 2023 to June 2023. In this study, the data analysis method used qualitative descriptive analysis and quantitative descriptive analysis. Qualitative descriptive analysis is used to analyse data from the results of input, criticism, and suggestions. While quantitative descriptive analysis is used to process data obtained from expert validation questionnaires through a Likert scale as follows,

Table 1. Likert Scale Rating Categories

No.	Part Name	Description
1	Score 1	Very Less
2	Score 2	Less
3	Score 3	Simply
4	Score 4	Good
5	Score 5	Very good

In order to be able to make decisions and give precise meaning to the results of expert assessment, a 5-scale conversion **Table 2.**

Table 2. Conversion of Achievement Level with Scale 5

No.	Percentage of Achievement	Qualification	Description
1	90 - 100 %	Very Valid	No need to revise
2	75 - 89 %	Valid	Slightly revised
3	65 - 74 %	Fairly Valid	Revised to taste
4	55 - 64 %	Less Valid	Many revised
5	1 - 54 %	Very Poorly Valid	Repeated making product

Then the student response questionnaire is seen using the category according to the following **Table 3.**

Table 3. Student Response Categories

Assessment	Interpretation Criteria
$80\% \leq p \leq 100\%$	Very Practical
$60\% \leq p < 80\%$	Practical
$40\% \leq p < 60\%$	Practical enough
$20\% \leq p < 40\%$	Not Practical
$0\% \leq p < 20\%$	Not Very Practical

While the analysis of student response questionnaires sought the percentage of response scores on each aspect of the statement using the following formula:

$$\% NR = \frac{\sum_{i=1}^n NR}{Maximum NR} \times 100\%$$

Description:

$\% NR$ = Percentage of Response Value (NR)

$\sum_{i=1}^n NR$ = Total score of response answers on each aspect

$Maximum NR$ = Total score of the entire response questionnaire on each aspect.

3. RESULTS AND DISCUSSION

3.1 Results

The main results of this research is an interactive Powerpoint learning media for Mathematics subjects on the material of flat faceted shapes for grade IV students of SDN Kaliglagah 04. This research uses the ADDIE type of development model which includes analysis (Analysis), design (Design), development (Development), implementation (Implementation) and evaluation (Evaluation). Researchers only carry out the ADDIE development model up to the development stage (Development) only, due to the lack of time so it is not possible to carry out all the stages. The stages of the development model can be described as follows:

The first stage is analysis (Analysis), this stage is carried out performance analysis, needs analysis, and analysis of learning objectives. In the performance analysis, it was found that at SDN Kaliglagah 04 some classes have implemented the independent curriculum and some are still implementing the 2013 curriculum. With the learning delivery model still using the old method of lecturing, and the use of media in the form of a blackboard and supporting textbooks. So that a sense of boredom arises in students in the classroom which results in material that cannot be understood optimally, especially in identifying flat and non-multiples flat shapes. Furthermore, the needs analysis is used to provide solutions to the problems found in the performance analysis. The results obtained show that there is a need for a learning media that can increase the activeness of students in learning and be able to provide illustrations of the shape of many-sided flat shapes and non-many-sided flat shapes. The last analysis is the analysis of learning objectives. Learning objectives can be formulated when indicators have been determined. So that learning objectives can be used as the basis for preparing interactive learning media materials.

The second stage is design, at this stage designing interactive powerpoint learning media products and designing learning materials. Interactive powerpoint learning media products are designed with various instructions and navigation buttons with an attractive appearance through a combination of colours, objects, sounds, and animations. Furthermore, the design of learning materials is carried out by assessing core competencies and basic competencies so as to produce indicators and learning objectives. Then the Basic Competencies, Indicators, and learning objectives can be seen in the following [Table 4](#).

Table 4. Basic Competencies, Indicators, and Learning Objectives

Basic Competence	
3.8	Analysing regular and irregular quadrilaterals
4.8	Identifying regular and irregular quadrilaterals
Indicators	
3.8.1	Get to know regular and irregular quadrilaterals
4.8.1	Differentiating regular and irregular quadrilaterals
Learning Objectives	
1.	Students are able to understand the definition of a quadrilateral
2.	Students are able to recognise the names of quadrilaterals
3.	Students are able to distinguish the names of the facets
4.	Students are able to distinguish which ones are multiples and which ones are not.
5.	Students are able to identify regular and irregular quadrilaterals

The third stage is the *development stage (Development)*, at this stage the researcher applies the product design that has been done before. In the learning media development process, researchers used Microsoft Powerpoint software and produced interactive powerpoint learning media as follows:



Figure 1. Front page view of interactive learning media



Figure 2. Display of subject matter options



Figure 3. Display of question practice options

At this stage of development, product validation is also carried out to linguists, material experts, and teaching material experts. After filling in the validation instrument, the validator will provide suggestions for improvement as a reference if revisions are still needed to the product. The results of expert validation can be seen in the **Table 5**.

Table 5. Interactive Powerpoint Media Validation Results

No	Validators	Total Score	Max Score	%
1	Material Expert	70	80	87,5%
2	Linguist	34	35	97%
3	Media Expert	94	100	89,5%
Total		198	215	92%

Based on the results of expert validation testing of the product, an assessment of 92% is obtained which is included in the category of very valid or feasible to use. The fourth stage is the implementation stage, at this stage a perception sheet is used to implement interactive powerpoint learning media, the opinions and reactions of students are used to determine whether or not the use of interactive powerpoint learning media in learning. The results of the analysis of student response questionnaires after the learning process can be seen in the **Table 6**.

Table 6. Results of Response Questionnaire Analysis

Aspects and Assessment Criteria	NR Response Value
Overall average of student response scores	4,66
%NR	93,3 %
Category	Very practical

Based on the **Table 6**, it can be seen that the results of the analysis of student response questionnaires show a value of 93.3% which can be categorised as very practical. So that interactive powerpoint learning media in mathematics subjects on the material of many- sided flat buildings is very practical to use.

3.2 Discussion

Data analysis shows that interactive powerpoint learning media in mathematics subjects on the material of building multiples data can be said to be very feasible to develop. The needs of students in today's progress can be one of the supporting factors in the development of this learning media. Learning media must be in line with technological advances that are able to facilitate students in technological progress (Effendi & Wahidy, 2019; Puspitasari, 2019). Learning using interactive powerpoint media can help students in receiving subject matter information and support students to be able to learn independently. Powerpoint learning media is packaged interactively to foster students' enthusiasm, interest, and activeness in learning. (Dila Rukmi Octaviana *et al.*, 2022). In addition, in this interactive powerpoint learning media, material is given about regular quadrilateral flat shapes, irregular quadrilateral flat shapes, and not flat shapes clearly accompanied by examples and reasons. So that the combination of images, text, and animation can clarify the concepts of material that is almost indistinguishable or abstract. (Prasetio, 2022; Ageng *et al.*, 2022). In this learning media, practice questions and evaluations are also presented at the end of the interactive powerpoint slides. So that students are able to know and measure how far the understanding of the material they have learned. This is reinforced by (Kahfi, 2021) which states that learning media can make students play an active role so that they can increase student interest in learning.

The material in the interactive powerpoint learning media is feasible and has a validity value of 87.5% with good qualifications. This indicates that the interactive powerpoint learning media in mathematics subject matter of flat faceted shapes is in accordance with the Core Competencies (KI) and Basic Competencies (KD). Media requirements for students must be fully based on the curriculum, therefore the development of learning media content must be based on Core Competencies and Basic Competencies (Didik Prawira Putra *et al.*, 2017). (Didik Prawira Putra *et al.*, 2021). Furthermore, in the validation test on linguists, interactive powerpoint learning media received a validity value of 97% with very good qualifications and no need for improvement. The use of correct Indonesian language and in accordance with EYD can make it easier for students to read and understand the subject matter. (Marpaung & Siagian, 2016; Ramdani *et al.*, 2020). In addition, the use of language must be appropriate to the context and related to the subject matter being discussed. (Khair, 2018). So that the purpose of making a media can be achieved, namely equalising perceptions between students through language that is easy to understand and easy to digest. (Khairini & Yogica, 2021). In the next validation, interactive

powerpoint learning media received a validation score of 89.5% from media experts with very good qualifications so that it can be interpreted that no improvements need to be made. In the interactive powerpoint learning media, it is equipped with buttons and instructions for use so that students are facilitated in using the learning media. This is in accordance with the indicators of learning media that are suitable for use in learning, namely ease of use (Pratiwi & Meilani, 2018). Interactive powerpoint learning media on the material of many-sided flat shapes also combines shapes, colours, animations, and sounds so that interesting and fun learning media are produced. So, media that can attract the attention of students can be a means to increase student motivation in the classroom (Ayudhityasari et al., 2021). Based on the results of validation from material experts, media experts, and linguists as well as a review of several previous studies and then testing on students with the results of the analysis of student response questionnaires with a value of 93.3% which can be categorised as very practical, it can be said that the development of interactive powerpoint learning media for mathematics on the material of flat faceted shapes can be applied in the learning process.

4. CONCLUSION

Based on the results of research, it can be concluded that the interactive powerpoint learning media for mathematics on the material of flat faceted shapes has been successfully developed. With the acquisition of the percentage value of three expert validations classified as high and the acquisition of practicality tests from students showing very practical results, then based on these gains the learning media can be categorised as suitable for use in learning. Furthermore, it can be suggested to teachers and students to be able to use it as an alternative media in learning mathematics material of many-sided flat shapes.

ONFLICT OF INTEREST

There are no conflicts of interest declared by the authors.

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