DEVELOPMENT OF INTERACTIVE POWERPOINT LEARNING MEDIA BASED ON CONTEXTUAL TO IMPROVE STUDENT'S LEARNING OUTCOMES ON VOLUME MATERIALS

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Abstract: This research is being carried out after observations and interviews at SDN Kraton, there is a problem that students need better learning outcomes. It's due to the need for more media for the learning process; the learning resources are only student books and lecture methods. So, it is necessary to develop the media to support the learning process with the hope of maximum learning outcomes. Applying actual concepts to learning mathematics in everyday life relates to contextual approaches. In reality, in everyday life, mathematics plays a vital role. This research aims to develop a contextual-based interactive PowerPoint learning medium to improve student's learning outcomes in the V class of SDN Kraton. This development research uses the ADDIE model development modes. This research's subject is the SDN Kraton V class, with 18 students. This product passes through the validation stage of the material expert, the media validation test, the elevation response of students and teachers, and the pretest-postest. The validation test obtained an 87.5% score with valid criteria. The media expert's validation gets an 80% acquisition with a very valid criterion. Student response scores a percentage score of 83.33% with highly practical criteria, and teacher response gains a 90% achievement with highly pragmatic criteria. The product test was declared effective by increasing the pretest to the posttest with an average of 0.7 over the average criteria. So, the use of learning media can enhance student learning outcomes.

Keywords: *Powerpoint Interactive Media, Beam and Cube Volumes, Contextual, Learning Outcomes*

INTRODUCTION

Learning is a process of communication involving students and teachers, or students with other students, and generating learning experiences [1]. Learning is an interaction between educators and students. Interaction or interrelationship between educators and students is very important in the learning process [2]. Learning is a well-designed set of activities involving information and environment to help students learn. Based on the above view, learning is a process of interaction between teacher and student, student with student, involving information and a well-planned environment.

In addition, learning is easier to understand by students if the learning material relates to the real life of the students so that they can connect and apply the learning results to everyday life, such as learning mathematics. Mathematical learning is a method of learning science with a structured plan involving activity and mind to improve problem-solving ability and its implementation [4]. Mathematics is a primary subject that, when used in everyday life, can help to understand its essential values [5]. Mathematics is identical to critical thinking and reasoning. Analysis is analyzing and understanding mathematical statements in everyday life and then expressing them both orally and in writing [6]. It is identical to contextual learning, which trains students to discover the essence of the mathematical learning concept studied [7]. Contextual learning is a learning model that aims to enhance knowledge and thinking skills by associating learning with real situations in the environment around the student, and this method makes the outcome more meaningful [8]. So, learning through a contextual approach that connects lessons to real-world situations helps students discover, understand, and apply the concepts taught. In other words, students will be better understood and tricked if they introduce contextual learning concepts.

Based on an interview with a teacher of the V class at SDN Kraton district of Kediri, the SDN V class has had difficulties in the learning process, proven with many values that are below the minimum completeness criteria (MCC), which is a classical density of 27.77% on material volume of beams and cubes. Besides, there is also a need for more use of technology-based media that supports the delivery of teacher information to students in mathematics lessons, especially material about the volume of beams and cubes. Therefore, it is necessary to develop the learning media to support the learning process.

Learning media is a learning resource that teachers can use to expand students' insights and means of providing scientific material. Learning media are crucial to learning processes, even those that can determine the achievement of learning goals [10]. One of the components that support the learning process is the learning media, especially the audio and visual learning media. Using a Microsoft PowerPoint program as a learning medium can help

teachers present material and create a more interactive learning environment. Therefore, Microsoft PowerPoint is suitable for this research for learning media development because it makes classes interactive and easy to create. Interactive teaching media can be defined as active teaching media to give back orders to users to carry out certain activities [13].

The material in this developmental research is a space-building volume material. Having sides, ribs, and angle points are the building components of space. The part of the building that limits the inside and the outside is called the side. The edge is the line that unites the two sides of the building, and the angle point is the corner of that building. As one of the sub-learning geometry, the material is a learning in geometries studied in the high school. Students are expected to be able to master the material optimally.

RESEARCH METHODS

The ADDIE model is one media that pays attention to the primary stages of simple and understandable media development design. The ADDIE model can be used as a guideline for building a successful learning device in several steps [14]. ADDIE is an acronym for Analyze, Design, Develop, Implement, and Evaluate [15]. This ADDIE model concept applies to building primary performance in learning. Each stage of development provides an opportunity to evaluate comments or recommendations from validators, students, and teachers as a reference for product improvements. The test subject is the SDN Kraton V class of 18 students. They were implemented in classroom V SND Kraton.

The methods used in this research are observation, interview, lifting, pretest, and posttest evaluation. Observations and interviews are conducted to determine the learning process and the needs of students and teachers. Angket is used to determine the validity and practicality of the developed media, while pretest and posttest evaluations are used to measure the effectiveness of the used media. The data analysis techniques used are quantitative and qualitative descriptive. Qualitative data is obtained from the advice and comments of experts and the results of converting quantitative data to qualitative information [16]. Quantitative descriptive analysis in this study is used to process data obtained from the questionnaire results as a score using the Likert scale.

The criterion used to determine decision-making is a conversion table of four achievement rate criteria. The results of the pretest and posttest evaluations are used to determine whether there is

an increase in media use using the N-Gain test [17]. Calculating the N-Gain value with the formula:

$$\text{Normal Gain} = \frac{\text{posttest score} - \text{pretest score}}{\text{ideal score} - \text{pretest score}}$$

Meanwhile, to calculate the average value of the N-Gain Score test with the formula [18]:

$$\text{Average N-gain} = \frac{\text{the amount of N-Gain}}{\text{amount of data}}$$

Table 1. Criteria for the N-gain level

Average	Criteria
g > 0.7	High
$0.3 \le g \le 0.7$	Moderat
$0 < g < 0.3$	Low
$g \le 0$	Filed

RESULT AND DISCUSSION

The research uses the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation. The first stage is analysis. It's done through observations and interviews with class teachers and V-grade students at SDN Kraton. The second stage of design is called creating a product design. In this phase, we will produce a screen that contains shapes, colors, and fonts designed as attractively as possible. Identify the media component by collecting additional information, such as images of beam- and cube-shaped objects in everyday life.

The third stage is the development, the design made at the previous stage, which means this stage is a phase of product manufacture. The elements that have been collected during the design phase are stacked into one product unit that is intact according to the design. Stage four is implementation. The fourth stage of the ADDIE model is implementation. The product has been made and tested for its appearance and function. Tests will be carried out first by media and material experts. Once the media and material experts declare they are eligible, the test will be carried out on the pupils. The fifth stage is evaluation, once the product is well developed and meets current needs. Evaluation is the process of finding and correcting errors. The goal is to produce a better quality product. The design results are as follows Figure 1:

After the development, the implementation is done by validating the media validator and the material validator to find out the validity of the media development. I conducted a small group trial with five students and a class teacher as respondents to determine the practicality of media use.
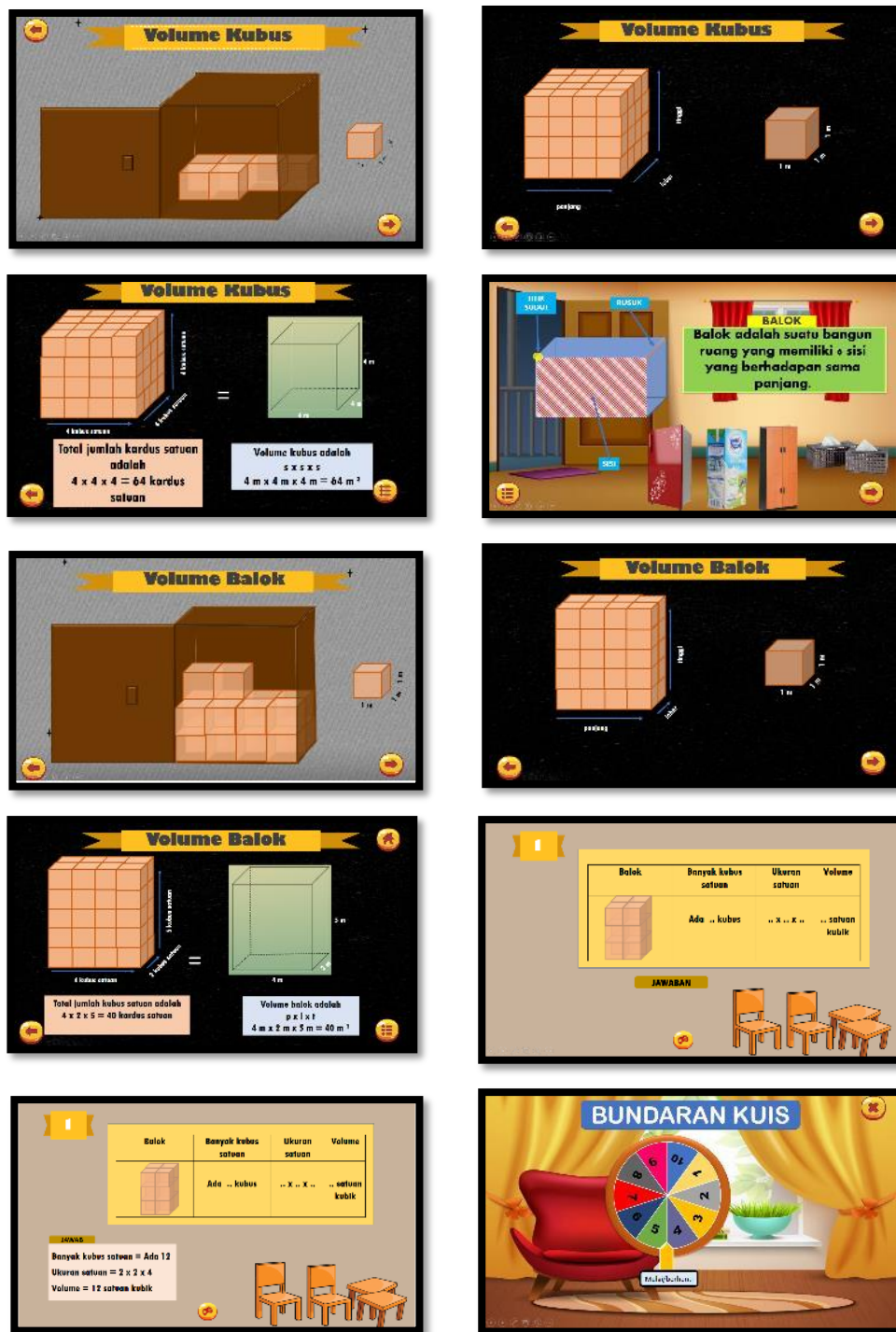
Figure 1. Context-based PowerPoint Interactive Media Development Results

Table 2. Validity Score Percentage and Practicality

Subject	Validity Results	Criteria
Material Validators	87.5%	Very valid
Media Validators	80%	Very valid
Teacher response	90%	Very practical
Student response	83.33%	Very practical

We obtained acquisition scores based on the test results of material experts and media. Materialist with 10 rating indicators, scores 3 is 5, and 4 is 5. It obtained a score of 87.5% with the criterion of validity of learning materials entered in criteria very valid. Based on 10 rating indicators, a score of 2 is obtained as much as 1, 3 is obtained as 6, and 4 is obtained as much as 3. Obtaining a score of 80% in the criteria is very valid.

The practicality test is obtained from the teacher's and student's responses. Teacher's responses are from 10 evaluation indicators, score 3 as many as 12, score 4 as much as 24. Based on the practicality criteria of teachers' learning media, practicality values with a 90% percentage entered the criteria are very practical. As for student responses, of the 10 rating indicators of 18 students, 150 said "Yes" and 30 said "No," with a score of "Yeah" of 150. Based on the practicality of the learning media, the students obtained a score with a percentage of 83.33%, entering the criteria very practical.

After a small-group trial, a large-group trial was conducted with 18 student respondents to determine the effectiveness of using the developed media. Effectiveness is obtained from pretest and posttest evaluations of students. Based on the efficacy of using an interactive PowerPoint literacy-based learning media, Kraton's numbering students of V SD class totaled 18 from the pretest to the posttest, gaining an average improvement of 0.7 with moderate criteria.

Developing media produced and applied in the learning process can improve student learning outcomes. It is in line with what was said by [19], influenced by the use of media, which involves students creatively in the learning process and can develop students' thinking skills to increase student learning outcomes. The teacher has a very important role in planning learning. The method used must not be teacher-centered but student-centered so that students can actively develop their potential. Student-centered learning is an approach that emphasizes optimal student activity to obtain learning outcomes that integrate cognitive, affective, and psychomotor aspects [20]. This media includes interactive multimedia [21], a media device with control buttons that users can use to choose what they want. It is varied based on a contextual approach, so the learning experienced by students becomes more meaningful. Contextual learning gives students the ability to find meaning by relating academic material to the context of their daily lives [22]

CONCLUSION

This research is to develop contextually based interactive PowerPoint learning media. Based on the research results of data analysis, product validity results obtained a score of 80% from media

experts and 87.5% from material experts. From the results, the learning media is said to be very valid. Then, tested practicality, the teacher's response was 90% from the lift, and in the elevator, the student's answer was 83.33%. Based on the criteria, media use falls within the very practical criteria. The effectiveness of improved learning results is measured through pretest and posttest, obtaining an average n-gain of 0.7 with a moderate improvement criterion. So, the results show that the interactive context-based PowerPoint learning media is used effectively and has been shown to improve the learning outcomes of V-Class students of SDN Kraton.

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