



Assessment of the Development of Interactive Media with Animation on Curved Side Space Building Material in Class IX Junior High School at Mallusetasi

Sudirman^{1*}, Awi Dassa²

¹Postgraduate Program Universitas Negeri Makassar, Makassar, Indonesia

Email: sudirman5oktober1987@gmail.com

²Universitas Negeri Makassar

Email: awi.dassa@unm.ac.id

Abstract

Education is often associated with the teaching and learning process, and a school is where the learning process occurs. In this school, children or students can learn widely about various things, for example, learning to interact with the environment, teachers, and friends. In addition, students can also study various subjects at school, such as Indonesian, Mathematics, Science, Social Studies, Civics, and so on. Each subject has a different KKM (Minimum Completeness Criteria), especially in Mathematics. Therefore, the role of one teacher as a facilitator is one of the supporting factors for students to obtain scores that reach the KKM (Minimum Completeness Criteria) set by the school. The existence of a score that does not reach the KKM (Minimum Completeness Criteria) at SMPN 1 Mallusetasi makes teachers have to be creative in making or designing interactive media with animation, especially on curved side space-building materials.

Keywords: *Assessment, Interactive Media, Animation*

INTRODUCTION

Education is a term that is always used by society to teach children. In the world of education, the shelter under it is the school. In this school, children or students can learn widely about various things, for example, learning to interact with the environment, teachers, and friends. In addition, students can also study various subjects at school, such as Indonesian, Mathematics, Science, Social Studies, Civics, and so on. Because of the various kinds of learning that students get at school, an assessment or assessment/evaluation is held to measure the level of students' understanding of the material taught by the teacher. Therefore, the role of one teacher as a facilitator is one of the supporting factors for students to obtain scores that reach the KKM (Minimum Completeness Criteria) that the school has set.

According to Trianto (2010), learning is an aspect of complex human activities which cannot be fully explained. Based on Trianto's opinion, it can be seen that learning is a human activity whose process can be defined and cannot be explained. Interactive learning media are used to find out the nature of learning that the process of its activities can explain. Meanwhile, to provide an assessment of the interactive media, an interactive media assessment is used.

Gagne in Khodijah (2014) defines learning as a series of external events designed to support several learning processes, which are internal. Hamalik (2008) says learning is a combination that includes elements of human materials, facilities, equipment, and procedures influencing each other to achieve learning objectives.

According to Daryanto (2010), learning that attracts students is learning that can explain abstract material into concrete. That is, how teachers can clearly display material to students, both from the learning process and student learning outcomes, so that teachers can know and measure the level of student understanding. Rusman (2014) says that learning is essentially a process of interaction between teachers and students, direct interactions such as face-to-face activities or indirectly, using various learning media.

From some of the opinions above, it can be concluded that learning is a learning process for individuals, where the individual acquires something in his environment. In the learning process at school, the individual in question is the student, and the teacher guides the learning process. When the teacher conveys material in the learning process, students will gain knowledge related to what is in their environment.

Teachers have widely used the use of learning media as a tool to explain the material in the learning process. Learning media can attract students' attention to understand the material being studied. In addition, learning media can increase student interest in learning activities to improve student achievement

Heinich in Rusman et al. (2013) said that the media is a communication channel tool. Heinich exemplifies this media, such as film, television, diagrams, printed materials, computers, and instructors. Examples of these media can be considered as learning media if they carry messages to achieve learning objectives. In this case, it can be seen that there is a relationship between media and messages and methods.

In implementing learning, teachers are expected to be able to prepare learning tools, one of which is learning media that will be used when teaching. Amiruddin (2016) states in his book that the teaching delivery strategy emphasizes what media is used to deliver teaching, what learning activities are carried out by students, and in what teaching and learning structure. So it can be concluded that before starting or carrying out the learning process, the teacher must pay attention to the completeness of how he will convey the material to students later so that the information or material makes it easier for students to understand.

Rusman (2013) defines learning media as a messenger technology that can be used for learning purposes; learning media is a physical means to deliver subject matter. Learning media is a means of communication in the form of print and listening, including hardware technology. So it can be concluded that learning media are tools used in the learning process related to the material being taught, whether it is media that can be touched by the teacher or the students themselves (for example, spatial props in learning Mathematics), as well as media in the form of images, audio, a video that the senses can see of students.

From the various opinions above, it can be concluded that (a) learning media is a container of messages, (b) the material to be conveyed is a learning message, and (c) the goal to be achieved is the learning process. Furthermore, using creative media will increase the possibility for students to learn more, keep what they learn better, and increase creativity in performing skills according to the learning objectives.

Elaine et al. (2002) say that interactive media integrates digital media, including electronic text, graphics, moving images, and sound, into a structured digital environment that can make people interact with data for the right purpose. Meanwhile, Seels and Glasgow in Arsyad (2011) argue that interactive media is a delivery media system that presents recorded video material with computer control to the audience (students) who not only hear and see video and sound but also provide an active response. That response determines the speed and sequence of the presentation.

So it can be concluded that the media is a tool used in the process of conveying information to recipients of the information. In the learning process, the person who acts to convey information is the teacher, and the recipient of the information is the student. In addition, interactive media is an interesting media that contains elements of images, sounds, animations, videos, and colors that can help students be more interested and actively involved in the learning process.

The interactive media used by the teacher are not made casually. However, interactive media requires an assessment from the validator. The elements that are the target of the assessment in interactive media are the accuracy of the animation and the colors used by the teacher in making the media. In addition, the language used is polite, and the suitability of the media is with the material to be studied by students. Thus, the assessment of interactive learning media with animation plays an important role for students and teachers.

Teachers in the learning process can use many learning media. Such as image-based learning media, video, audio, as well as a combination of images, video, and audio, and there is also a focus on assessments that assess the influence of students in learning media. In this case, the teacher can combine the learning media according to the needs of the material to be taught. One of the subjects that can use learning media is Mathematics.

In addition to the material taught by the teacher, students can also gain knowledge from the objects around them. For example, when the teacher explains the material about building space and directs students to look for things that resemble the shape of the space in the classroom, indirectly,

students will learn about their environment. This will lead students to think about finding objects related to the shape of the space. Prawira (2016: 213) says that the aspect of thinking ability includes a high curiosity drive, likes to observe and explore, and can orient his potential to achieve what he wants. With the ability to think, students will be more challenged to learn to find new things around them. Thus, with learning in the learning process, students will experience development in their thinking and mental patterns.

METHOD

The type of this research is Research and Development (R & D), with a research model adapted from the 4-D model developed by S. Thiagarajan. This model consists of 4 main stages: define, design, develop, and disseminate, or be adapted into a 4-P model, namely definition, design, development, and dissemination. However, due to limited funds and time, this research did not carry out the distribution.

This type of research is research and development (Research and Development/R & D), namely the research method used to produce certain products and test the effectiveness of these products (Sugiyono (2015:407)). In this study, researchers used the DDD-E (Decided, Design, Develop, Evaluate) model, which is one of the learning design models used to develop interactive media with animation in learning. This development model looks simple compared to other development models. However, the steps or procedures in this research model contain the overall research and development steps carried out by researchers.

In collecting data, researchers used qualitative and quantitative data. Qualitative data were obtained from the distribution of questionnaires/questionnaires to teachers and students, interviews with teachers related to the analysis of student needs, suggestions, and comments from homeroom teachers and students on interactive media. Quantitative data were obtained from test results (pre-test and post-test) and expert validation, namely material experts and media experts.

RESULT AND DISCUSSION

This media development assessment aims to assess the interactive learning media based on Microsoft PowerPoint with curved side spaces as well as assess the effects of learning outcomes with these media. The development of this media also aims to determine the feasibility of the curved side space building material and interactive media with animation in class IX.1 of SMPN 1 Mallusetasi. The developed learning media was declared suitable for use based on the results of validation by material and media experts and test results by teachers and student responses. The use of media in learning shows that interactive media with animation can attract students' attention in the learning process and make it easier for students to actively listen to the material and respond to the material presented by the teacher using the media.

Table 1. The Result of Pre-test and Post-test

No.	Score	Average
1	Pre-test	36,1
2	Post-Tes	86,5

This is evidenced by the increase in students' mathematics learning outcomes before and after learning to use interactive media with animation. Before using interactive media in learning, the average score obtained by students when given a pre-test was 36.1. These results indicate that the average score of students is below 65. Students are given post-test questions, and the average score obtained by students is 86.5. This is proven classically; more than 85% of students from all students achieve a value (S 65). The decision stage is set first as the basis for designing the media to be developed. The learning media developed in this study used the DDD-E development model, namely the decision stage, the design stage, the development stage, and the evaluation stage. The following will describe the steps carried out in this research and development:

Results of the Decision

At this stage, the teacher decides the type of software used to develop learning media, namely Microsoft PowerPoint. The hardware used in running the media is a computer and an LCD/projector. In addition, at this stage, the teacher also decides about the learning media used, namely interactive learning media with animation. In selecting media, the teacher considers whether the media to be

developed can achieve learning outcomes.

Based on the teacher's observations in the Mathematics learning process in the field, it shows that students find it difficult to understand Mathematics subject matter because there are still many educators who predominantly use conventional learning methods, where this method does not involve students in the learning process. This results in students not being enthusiastic and less interested in learning mathematics, so the class atmosphere becomes monotonous, and student learning outcomes are below average. The teacher found several obstacles in the learning process, so the teacher gave one solution: using media in the learning process, especially in Mathematics.

Design Phase Result

At this stage, the teacher has designed learning media that contains the introduction, materials, evaluations, and interactions given to students, as well as media components consisting of animation, images, video, and audio. This design is made so that the resulting media can guide students to achieve the expected learning objectives. Making interactive media with animation aims to make it easier for students to understand the material so that students interact directly, both with teachers and with other students. This is the stage in making an outline of material or content on interactive media with animation.

Development Stage Result

After outlining the material or content, the next stage is creating an interface or interface. At this stage, the teacher designs interactive media designs with animations using Microsoft PowerPoint according to the Drill flowchart model. In making the interface display, the teacher also makes a storyboard, which inputs all the information that appears on the screen, which helps interactive media developers in developing the media components. The storyboard is used as a reference for making layouts. The layout is made by paying attention to aspects of color and composition. For example, the placement of menu options or icon instructions and navigation buttons in the media, the background color used, the presentation of the text, and so on.

Evaluation Stage (Evaluate)

Evaluation in the DDD-E model is carried out at each stage of development. Evaluation is carried out on the final product starting from the decision, design, and development stages. At the decision stage, an assessment is made of the determination between the topic and the media and the feasibility of the initial observations to ensure the validation of interactive media products with animation as a solution to overcome problems in the learning process. At this decision stage, the evaluation activity requires an expert called a material expert.

From the results of the material expert validation, it was obtained a score of 4 on the content aspects, including conformity with the syllabus, suitability of material with core competencies and basic competencies, suitability of material with teaching needs, suitability of learning material with indicators to be achieved by students, benefits of material in adding insight into students' knowledge and the value of 3, among others, makes it easier for students to understand the learning material and the truth of the substance in the learning material. Furthermore, in the construction aspect, a score of 3 was obtained on all indicators, including meaning in learning materials, suitability of learning materials with the level of students' abilities, clarity in learning objectives, giving motivation, order of presentation in learning materials, systematics of learning materials, and completeness of the information. In the language aspect, a score of 3 is obtained, including clarity in providing information, legibility in accordance with the rules of the Indonesian language, and using commutative language, and a value of 4 in using effective and efficient language and using interesting dialogues or texts that lead to understanding concepts. Overall, the percentage value of 83.75% was obtained in all aspects of material expert validation.

From the results of media expert validation, it was obtained a value of 4 on attractive color combinations and a value of 3 on the suitability and presentation of images and materials discussed on aspects of coloring, word use and language, obtained a value of 4 on the use of language that is in accordance with enhanced spelling (EYD), language suitability with students' level of thinking, politeness of language use and accuracy of dialogue/test with stories/display material on the layer obtained a value of 4 on the image design gives a positive impression so as to attract interest in learning, suitability of display color and background and navigation buttons and a value of 3 on the type of font used clearly legible, the presentation obtained a value of 4 including the presentation of media supporting student involvement in learning and presenting interesting images and a value of 3 in the

presentation of the media carried out sequentially, animation and sound obtained all 4 values, including animation related to the material, the sound used was clear, between animation and sound ai, and image clarity (sharpness). Overall, a percentage value of 95.6% was obtained in all aspects of media expert validation.

The results of the student response questionnaire on (positive statements) to interactive media with animation in spatial learning on indicators of the application of cooperative learning models with interactive media can increase my motivation in learning who choose strongly agree there are 44 and agree 45. Using cooperative learning models with interactive media is a more effective learning model choosing strongly agree 28 students, 54 agree, and 2 disagree. Using a cooperative learning model with interactive media can improve learning outcomes. I chose strongly agree; there are 36, and 51 agree. Cooperative learning using interactive media is a learning process that I want. I choose strongly agree; there are 8, agree 69, and disagree there are 2. Using cooperative learning models with interactive media improves my thinking skills; those who choose strongly agree 24 and agree 60. The cooperative learning model with interactive media is a new learning model for me; who chose strongly agree; there are 40, 21 chose to agree, and 18 chose to disagree. It is easier for me to understand the material for building space if I use interactive media in cooperative learning, where 20 strongly agree, 57 agree, and 4 disagree. Cooperative learning by using interactive media in learning Mathematics allows me to express opinions that choose strongly agree 16, agree 63, and disagree 2. Learning by using interactive media makes me feel excited to learn Mathematics who choose strongly agree there are 32 and agree 54. Cooperative learning using interactive media in learning Mathematics encourages me to cooperate with friends in completing group assignments who choose strongly agree ad 48 and agree 39 Interactive media is suitable to be used in learning Mathematics, which choose strongly agree 44, 42 agree, and 2 disagree. It is easier for me to remember the material if I use interactive media in learning Mathematics. There are 16 who choose strongly agree, 54 agree and disagree 8. I am more active in listening to the material in the cooperative learning process using interactive media 16 who choose strongly agree, 60 agree, and 4 disagree agreed. Interactive media made me actively ask the teacher if I did not understand the material being taught 28 chose strongly agree, and 57 agreed. This shows that 28% of students strongly agree, 67% agree, 6% disagree, and 0% strongly disagree; students give positive statements about interactive media with animations used in learning Mathematics. It can be interpreted that most students positively perceive interactive media with animation.

The results of the analysis of the Mathematics learning data were obtained from the mastery test of teaching materials given after all the materials had been discussed. Students are said to be successful if they get a minimum score of 6.5. This shows that the media has met the requirements if at least 85% of students achieve a minimum score of 6.5.

The number of students included in the complete category is 23, with a total percentage of 89% and an average of 86,5. So the percentage obtained is:

$$\text{Percentage of complete learning} = \frac{23}{26} \times 100 = 88,5 \%$$

Thus, it can be concluded that as many as 89% of students achieved a minimum score of 6.5 with a successful category.

CONCLUSION

Through the development process, it has resulted in the development of interactive media with animation in learning to build space in class IX SMPN1 Mallusetasi with the following qualities:

1. Profile of learning media with animation based on validation result:
 - a. Material Expert
The feasibility of learning media based on material experts, with a percentage of 84% in content, construction, and language aspects, is a very valid category.
 - b. Media Expert
The feasibility of learning media is based on media experts, with a percentage of 96% in terms of coloring, use of words and language, and image design, including very valid categories.
2. The practicality of interactive media with animation is known based on the results of the percentage

of student responses of 94%, seen from student motivation and students' thinking ability in responding and expressing opinions on the material.

3. The effectiveness of interactive media with animation is known based on students' mathematics learning outcomes; the percentage is 89%, seen from the average student score of 86.5.

SUGGESTION

1. The media developed is interactive learning media, so users are required to be active in operating it.
2. The creation and development of Microsoft PowerPoint-based media need to be mastered by subject teachers to create their own learning media according to the next learning needs.

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