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The development of GODUKASI interactive learning media on ASEAN material

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Abstract

The level of student understanding related to the content of subject matter that has a broad scope such as ASEAN is still very lacking. For this reason, media is needed that can provide a more meaningful learning experience so that there is an increase in student learning outcomes. The purpose of this research is to develop GODUKASI interactive learning media on ASEAN material. This development uses the Research & Development (R&D) method with the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) procedure with the data collection uses questionnaire. At the evaluation stage, a questionnaire was given to 76 prospective teacher students regarding the meaningfulness and effectiveness of the media, and to 17 students regarding the ease of understanding and attractiveness of the media. The results of the questionnaire found that prospective teachers stated that the media was very meaningful and effective, and students stated that the media was easy to understand and interesting. Thus, GODUKASI interactive learning media can be used as an alternative media for use in ASEAN material.

Keywords

Learning media, Interactive media, GODUKASI media, ASEAN material

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Introduction

Efforts to improve the quality of learning in Indonesia continue to be made through curriculum adjustment programs to be more in line with the times, increasing teacher capacity and improving the quality and quantity of learning facilities and infrastructure. But unfortunately, it has not produced encouraging results in general. Using the perspective of the 2022 Program for International Student Assessment (PISA) test conducted by the Organization for Economic Co-operation and Development (OECD), shows that the skills of students (15-16 years old) are still quite alarming. In this test, the skills examined are reading, math and science skills.

In the reading proficiency test Indonesian students ranked 75 out of 81 countries, with most students being able to only understand the main idea in simple text, can connect and capture meaning when the information is explicitly embodied (level 2) even many students have lower abilities than that (1a,1b,1c). In the mathematics proficiency test, Indonesian students ranked 73rd, with most students only able to understand a situation where they can formulate a simple solution such as practicing a simulation involving one variable (level 2) and many students even lower than that (1a,1b,1c). while for student proficiency in the science domain ranked 71st, with most students able to apply knowledge procedures at the same level.

In the reading domain, it is clear that students' ability to capture important things in complex information is still very lacking. Whereas students who have good reading skills show higher achievement than those who lack [1][2]. The ability to capture meaning from text is influenced by many things. Boissonneau, Lemaitre, Herbet, Duffau, Moritz-Gasser [3] explained that reading proficiency depends on an interaction process that impacts the left inferior parietal lobule and posterior arcuate fasciculus. This means that to help someone be able to capture important points in a reading, the process must be interesting as well as meaningful.

One of the materials in grade VI elementary school is discussing ASEAN. This material has a fairly broad scope and requires students to understand many important points from several countries. Evidently, in some places it was found that the learning results of ASEAN material were unsatisfactory [4] [5]. To improve these conditions, a process is needed that can present the potential for stronger mastery of the material, one of which can be attempted is by presenting learning media.

Learning media is an important part of the learning process, because it facilitates students and teachers, increases student motivation and makes the subject matter clearer [6]. Ideally a media contains elements of flexibility, interactivity, speed and good visualization to make it easier for students to formulate solutions to problems [7]. Thus, one of the main elements needed is media that contains interactivity.

Digital-based interactive learning media can be developed using many applications, one of which is Macromedia Flash. Macromedia flash allows teachers to create a storyline that makes students feel like they are not learning. Interactivity can also connect students with fun learning [8], make students learn material deeply [9], and affect students' mental representation structures and cognitive processes [10]. Interactive media is ideally wrapped in a theme that characterizes the process, and in this context, the GODUKASI theme is used to be contextualized with current trends. GODUKASI gives the impression that students are traveling when exploring the media.

Method

The purpose of this research is to develop interactive digital learning media GODUKASI using Macromedia Flash application to make it easier for students to understand the important content in ASEAN material. This development uses the Research & Development (R&D) method with the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model. The ADDIE development model is more often used in learning that is planned according to learning objectives (see Figure 1). In addition, the use of ADDIE strongly supports learning that is creative, original, and innovative [11].

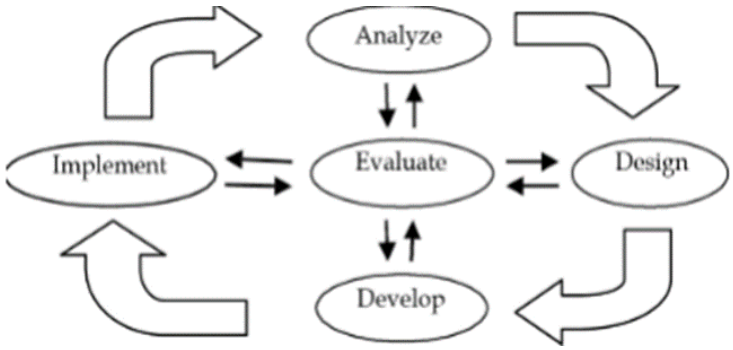


Figure 1. Shows the stages of the ADDIE method [12]

In the first stage, namely Analysis, identification is carried out related to the scope of the ASEAN meter, the second stage, namely Design, is carried out formulating the required media framework. The third stage, namely Development, is making media based on the framework that has been planned, then the fourth stage of Implementation is limited trials. The trial was conducted twice, first on elementary school teacher candidates totaling 76 people to determine the effectiveness and meaningfulness of the media, and elementary school students totaling 17 students to see aspects of interesting and easy to understand. At this stage, a questionnaire was given. The last stage is evaluation, where the results of the questionnaire are analyzed descriptively.

Result and Discussion

Analysis stage

At this stage, a mapping of the content of the subject matter is carried out which shows that the ability of students to absorb learning is still relatively poor. One of the materials with a fairly broad scope with quite a lot of understanding demands is ASEAN material in class 5. There are quite a lot of cases of lack of student learning outcomes in this material [4][5]. To strengthen, interviews were also conducted with students who had studied ASEAN material and found that mastery related to this material was also lacking. Thus, it was decided that the material content to be focused on was ASEAN material.

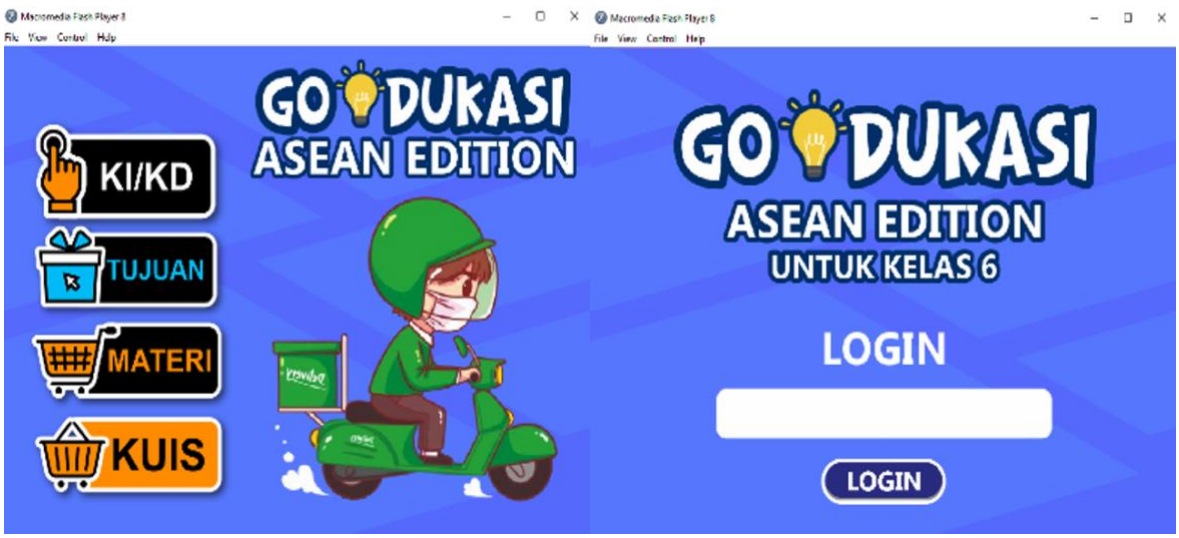
Design stage

Digital interactive media can actually be made with several applications, but the one that has a level of complexity that tends to be low but the features in it are enough to facilitate the needs is Macromedia Flash. Macromedia flash provides space for the use of attractive displays, the figures used can move and most importantly can be arranged for the stages in the form of a hierarchy that is related using coding [13][14]. However, before developing using macromedia flash, the design is first made.

The design needed is a flow where students do not feel learning but also feel playing. The elements needed include Core Competencies (KI), Basic Competencies (KD), materials and quizzes. The material element focuses on the history of ASEAN and important information related to each of the countries that make up ASEAN. The theme of GODUKASI becomes a background that seems to make students go on a journey to explore ASEAN.

Development design

At this stage, media creation starts from the bumper in, home, KI&KD, Material and Quiz. In each part, instructions are given that can be selected by the user. One of the characteristics of this media is that the stimulus is also provided by the media, so that there is a stimulus-response pattern from two directions. In the bumper in part there are 3 views where at this stage the user is required to input a name as an identity. So that it can go to the home stage. At home the user can choose the option to visit (see Figure 2).

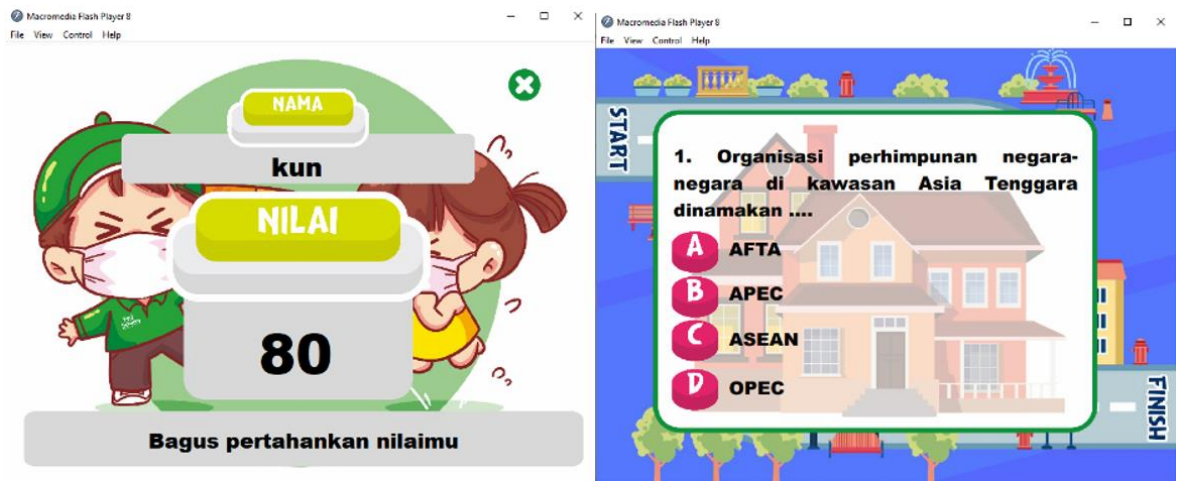


Figures 2. Bumper In

The next part is the KI & KD (Figure 3). At this stage, it explains the core skills and basic skills that users will have after exploring GODUKASI. The next part is the most important part, namely the material (Figure 4). At this stage material is given an exploration space for users to find out many things related to the material as if they were traveling.

Figures 3. KI & KD

Figures 4. Materials



Figures 5. Quiz

The last stage is the quiz (Figure 5). At this stage the user is required to answer 10 questions related to the scope of ASEAN material. At the stage the results will come out automatically at the end of the question and at the same time given feedback according to the results obtained.

Implementation

At the implementation stage (Figure 6), 76 prospective teacher students were tested to determine the effectiveness and meaningfulness of the media, and 17 elementary school students to see the interesting and easy to understand aspects measured using a questionnaire. The questionnaire results can be seen in Table 1.

Figures 6. Implementations

Table 1. questionnaire for student and prospective teacher results.

NO	CATEGORY	BAD	LESS	GOOD	EXCELLENT
1	Meaningfulness	0	3%	53%	44%
2	Effectiveness	0	5%	36%	59%
3	Ease of understanding	0	0	53%	47%
4	Attractiveness	0	0	18%	82%

Evaluation

At this stage, improvements were made based on input and shortcomings that were felt to increase the value of the usefulness of using the media. Some of the improvements made are the use of sound in accordance with the theme, the number of questions on the quiz is adjusted and the material area is expanded. Because the implementation results illustrate that the media is dominated by good and excellent answers, it can be said that GODUKASI media is feasible to use.

Discussion

GODUKASI is a Game-style learning media which can enhance learner motivation and participation [15]. This is because there is a process that makes students not feel like they are learning and has an attractive appearance and is easy for users to understand.

Effective learning media, such as interactive learning media designed using Macromedia Flash, can increase student mastery of learning by up to 20% and improve student learning outcomes through tests [16]. The use of interesting figures, sound that helps build the atmosphere, and an uncommon flow makes students tend to quickly remember things found when using the media.

Multimedia instruction, combining verbal and visual explanations, leads to over 75% more creative solutions on problem-solving transfer tests compared to single representation instruction [17]. Media characteristics, such as technology, symbol

systems, and processing capabilities, interact with learner and task characteristics to influence mental representation structures and cognitive processes [10].

Conclusion

With an interesting flow process, the use of distinctive figures, sound that suits the situation, and easy-to-understand delivery, GODUKASI media is meaningful and effective in transferring knowledge and is attractive and easy to use for users, namely elementary school students. Based on these findings, it would be very good if similar media development is carried out on another materials that cover a wide range of topics.

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