

Educational Introduction to ASEAN Countries for Class VIII Middle School Students Using Game Media

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ABSTRACT

Current technological developments are increasingly rapid. The use of games really supports students in the learning process in class. When the material is about getting to know countries in ASEAN, students will be more likely to get bored because the introduction to maps of countries, capital cities and natural features can only be found in books. There needs to be learning media that must be used by teachers so that students don't get bored quickly in learning. The ASEAN Country Introduction application is intended for elementary school students to study and get to know ASEAN Member Countries, where students can learn more easily than just reading about it in books, which sometimes have less interesting content and also to increase their knowledge. The aim of this research is to make it easier for teachers to deliver material and make it easier for students to learn material introducing ASEAN countries. This educational game was developed using the MDLC (Multimedia Development Life Cycle) method. Therefore, an educational game introducing countries in ASEAN was created which is in accordance with the "Merdeka Belajar" curriculum. From the results of the survey of 30 respondents, an average score of 92.19% was obtained so that they were included in the Strongly Agree category for games to be applied as alternative learning media.

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INTRODUCTION

Technological developments are currently increasingly rapid, especially in the gaming sector[1]. In the education of elementary school children, games really support students in the learning process in class because students really like games. In the era of globalization, information technology is advancing rapidly[2]. To get complete information about a country, it is not enough to just read books. This is because the information presented in textbooks is still relatively minimal. The ASEAN Country Introduction application is intended for elementary school students to study and get to know ASEAN Member Countries, where students can learn more easily than just reading about it in books, which sometimes have less interesting content and also to increase their knowledge[3].

In another research, it has produced an educational game which in the game covers all the Merdeka Belajar curriculum material, and the results of the questionnaire that has been carried out by this research can be concluded that this educational game makes it easier for teachers to convey the material and students more easily learn the country introduction material. -countries in ASEAN[4][5].

In another article, it is also stated that the game aims to make it easier for elementary school students to learn about and get to know ASEAN Member Countries, where students can learn more easily than by just reading about it through books, which sometimes have less interesting content and also to increase their knowledge[6][7]. The results of the research are applications that can attract the attention of users. ASEAN Member Countries that will be displayed in this Application are Indonesia, Malaysia, Singapore, Brunei Darussalam, Philippines, Thailand, Cambodia, Laos, Myanmar and Vietnam[8]. The information contained in this application is only a brief history of each country, state symbols, state information, history, state flags, history about ASEAN, and there is a quiz containing about ASEAN[9].

In the example of a game with the theme "Development of Monopoly Learning Media to Increase Students' Interest in Learning Geography" The aim of the research is to produce a product in the form of Monopoly Media and find out to what extent the effectiveness of Monopoly Media is in increasing students' interest in studying Geography[10]. The results of this research, the results of small, large and field group tests, show that the results of the Geography learning interest test for the experimental class that used monopoly media were higher than the control class that used conventional methods. The calculated t coefficient value is 20.878 and the t table is 1.675. So learning using monopoly media is effective in increasing students' interest in learning Geography[11][12].

Then there are also similar games which have the aim of making it easier for students to understand the countries that are members of ASEAN and their history, language, flags and culture. The results of this research mean that students can easily find out which countries are members of ASEAN, their history, national songs, national symbols, national borders, per capita income and so on, so that they can increase their scientific insight and knowledge. This means that games in learning media are considered effective for intermediate level students[13][14].

The teaching and learning process at Raden Fatah Cimanggu Middle School in the sample objects in this paper is considered quite effective and efficient, however there are several subjects that are still poorly understood by students, one of which is Social Sciences (IPS). According to one of the teachers in class VIII, he said that when class VIII students were explained about the geographical sub-location of ASEAN countries, many still had difficulty understanding the differences between countries in ASEAN. Several other causes, namely students are more likely to talk to their friends rather than paying attention to the teacher when explaining the material, which means students should be

more active in the learning process[15]. To increase interest in learning social studies, there needs to be a way of learning that is fun and attracts students' attention, for example, there are educational games that have been designed to teach players about certain topics, expand concepts, strengthen development, understand a historical or cultural event, or help them with skills because they play[16]. The emergence of various educational games is also influenced by the increasing development of technology around us.

This educational game will be applied to class VIII middle school students to help students understand the material. In this educational game students will not only learn but will feel entertained. The aim of making this educational game is to help the social studies learning process. This educational game will be implemented at Raden Fatah Cimanggu Middle School, where there is a small portion of the students, if you look at the table below, the data shows that there are several students who got grades for social studies below the KKM. The following is a table of the average final grades for Social Sciences semester 1 from SMP Raden Fatah Cimanggu:

Table 1, List of PTS and PAS Assessment Weights for Social Sciences Semester 1 2022/2023 Academic Year

Assessment Weight	The number of students	KKM value	Value < KKM	Percentage (%)
PTS	30	70	27	64,51
PAS	30	70	29	93,54

METHOD

Experiments in designing this game were carried out at Raden Fatah Cimanggu Middle School which is located at Jl. Raya Genteng Kulon, Panimbang Village, Cimanggu District, Cilacap Regency, Central Java. The author uses several methods in collecting data. The data collection methods that the author has used are observation, interviews and literature study. Then to complete this project the author took the following steps:

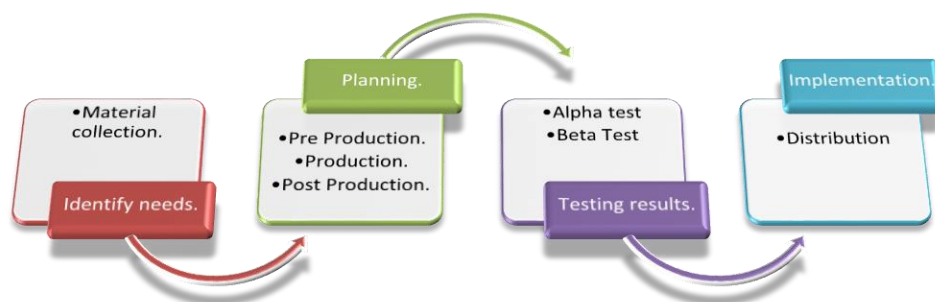


Figure 1, Project completion flow.

1. The problem identification process is the author's stage of identifying problems in the research object. This stage is an important stage for formulating problems that will become the background for the research object. The problem identified is how to create learning media for class VIII Raden Fatah Middle School students so that learning is more efficient and easier for students to understand. This stage is the stage where the researcher collects the data needed to complete

the research material. This stage is carried out using several techniques, namely observation, interviews, literature study, questionnaires and documentation.

2. After all the data has been collected, then analyze the needs needed to make an explainer video on preventing and handling violence against women. Requirements required are hardware, software, interview results, and data documentation. The next stage is designing an educational learning game for class VIII students. Making this video went through three stages, namely pre-production, production and post-production.
3. This stage the author will test if there are errors in the animation. The author will carry out testing using a questionnaire which contains several questions related to educational learning games for class VIII students using a questionnaire that will be approved by class VIII students.
4. At this stage, the video will be saved on a storage medium. If the storage media is not sufficient to accommodate the application, compression of the application will be performed. Distribution is the stage of storing a multimedia project to be used as an evaluation for making the next multimedia project to make it even better. Distribution of multimedia projects can be uploaded to YouTube or other social media.

RESULT & DISCUSSION

The method used to develop this system is the Multimedia Development Life Cycle (MDLC) system development method which is a method consisting of six stages, namely concept (conceptualization), design (designing), material collecting (material collection), assembly (manufacturing), testing (testing) and distribution (distribution). The following are the stages carried out to create an introduction game for ASEAN countries, namely as follows:

1. Concept.

Making this educational game is a game that aims to be a learning medium. This game is aimed at class VIII junior high school students in understanding the differences between countries in ASEAN. This learning game was adapted to the class VIII social studies book at Raden Fatah Cimanggu Middle School and was of course created to help teachers in conveying Geography material about ASEAN Countries as well as to attract pupils and students to understand the material presented.

This game is run by only one player, in the game there is a question that discusses ASEAN countries only for one player so they can continue to the next question session. This game contains 5 levels and 1 level contains 5 questions, and there are 3 lives, if the player answers incorrectly and the lives have run out, the player will return to the original game.

The design of this game has a 2D interface, this game was developed using the Unity 3D 4.3 game engine to design the game starting from the main menu scene for level selection, game over, about and help, then made into an apk file. Because this game is on the Android platform, this game can be installed directly on mobile devices with the Android operating system.

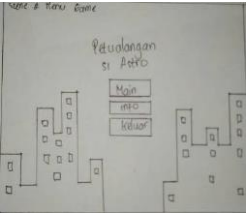
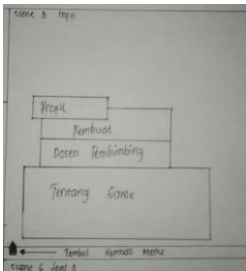
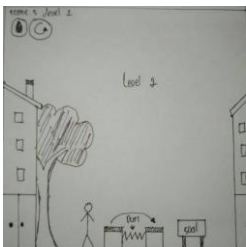
2. Design.

- a. About Storyboard.

After the conceptualization stage, the next stage is the design stage. In this stage, a design of the display form, navigation structure and material

requirements for the program are created. This stage was created as a reference to make it easier to manufacture or operate. Storyboards are used to describe the flow in the display design.

Table 2, Storyboard Design.

No.	Sketch	Description
1		In scene 1 there is a main, info and exit layout.
2		In scene 2, information is displayed containing game instructions.
3		Scene 3 displays a level that contains 7 levels and several material questions. Players must complete these questions in order to proceed to the next level.
4		In scene 4, the ending scene at the end of the game is displayed, after the player has completed the questions to the last level correctly.

b. Navigation.

The navigation structure is the flow of information from an application to clearly describe the relationships in the workflow of all elements used in the application. By describing the structure of the application navigation can be systematic and easy. The navigation design in this educational game for class VIII B students at Raden Fatah Cimanggu Middle School using Unity, includes:

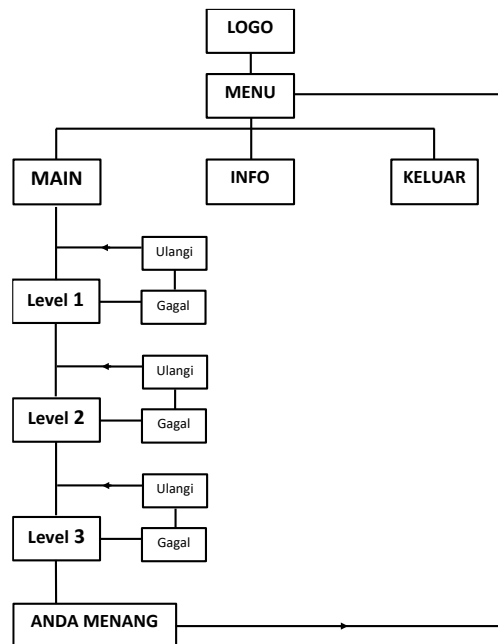


Figure 2, Navigation Phase

3. Material Collecting.

Material Collecting is the stage of collecting materials. The materials collected for making this game are images, sound, text and images as supporting materials. Most of the images were created using Adobe Photoshop and assets in Unity. The following is the Material Collecting table:

Table 3, Material Collecting.

No.	Name	Size	Type	Desc
1	Scene Menu :			
	- Background	70 kb	.png	Created using Adobe Photoshop
	- Title	23 kb	.png	
	- Main	5.8 kb	.png	
	- Info	5.89 kb	.png	
	- Quit	4.70 kb	.png	
	- Backsound	4 mb	Mp3	
- Button Sound	2 mb	WAV		
2	Scene Info :			
	- Dashboard	40.5 kb	.png	Created using Adobe Photoshop
	- Menus Button	35.9 kb	.png	
	- Backsound	5 mb	Mp3	
- Sound Button	3 mb	WAV		
3	Scene levels:			
	- Menu Button	30.5 kb	.png	Created using Adobe Photoshop
	- Direction Board	20 kb	.png	
	- Question Board	70 kb	.png	
	- Grass	95 kb	.png	
	- Character	187 kb	.png	
	- Land	130 kb	.png	
- Thorn	70 kb	.png.		

4. Assembly.

The assembly stage is the stage of creating multimedia objects based on designs that have been made previously. In this stage the author uses Adobe Photoshop CS5 as a medium for creating game assets, and Unity3d as a game program creation.

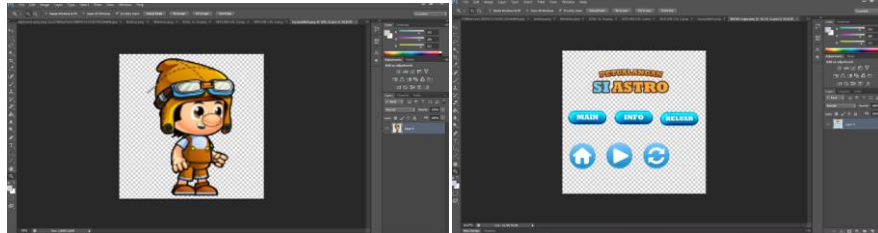


Figure 3, Modeling design.

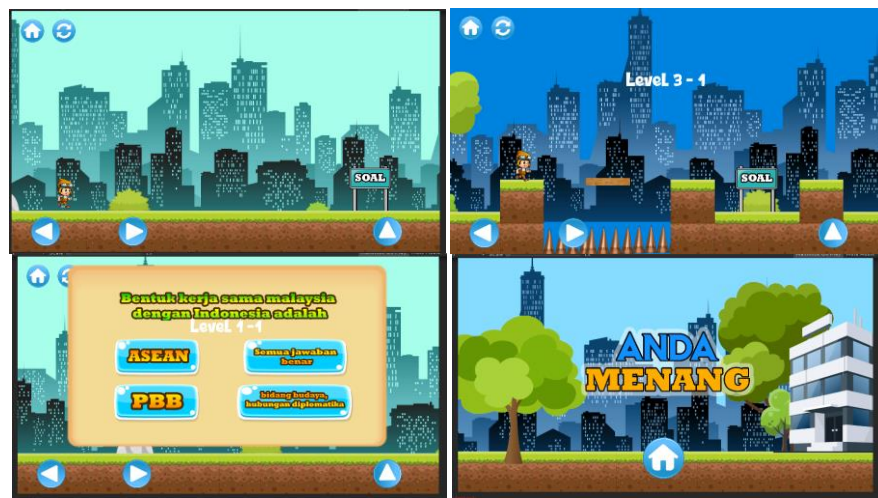


Figure 4, Scene of stage design.

5. Testing.

In this stage, testing is carried out using the Alpha Test and Beta Test methods, which are methods carried out by the manufacturer or the manufacturing environment itself. After passing the Alpha Test. Then testing will be carried out involving end users, namely Beta Test.

Table 4, Questionnaire questions for respondents

No.	Question
1	I can easily play this game as a medium for learning social studies on Android-based Geography material
2	I can understand the differences in cooperation between other countries and Indonesia
3	I can understand the climate differences in each country in ASEAN
4	I feel this game helps in understanding social studies geography material
5	I feel this game is suitable as an Android-based social studies learning medium for Geography material

Table 5, Number of Respondents who answered.

Questions	Score				Respondents
	SS	S	KS	TS	
1	28	2	0	0	30
2	23	6	1	0	30
3	15	14	0	1	30
4	18	11	0	1	30
5	24	6	0	0	30

Table 6, Final Test Results

Questions	Index	Criteria
1	98,4%	SS
2	93,4%	SS
3	85,83%	SS
4	88,33%	SS
5	95%	SS

*SS : Strongly agree

From the table above, the final results of the respondents' testing show an Android-based Educational Game for Introduction to ASEAN Countries for Class VIII Middle School Students. With the average results of the index formula as follows:

$$(98.4\% + 93.4\% + 85.83\% + 88.33\% + 95\%)/50 = \mathbf{92.19\%}$$

So the average index value of respondents is 92.19%, so it is considered strongly agree.

6. Distribution.

At this stage the researcher distributes the application. This stage begins by saving the application on the Android smartphone device in .apk format. and you can use a data cable as a data transfer medium via a PC or laptop to an Android smartphone and can also use Bluetooth and then install it on an Android smartphone.

CONCLUTIONS

Based on the research conducted by the author, an Android-based educational game introducing ASEAN countries for Class VIII junior high school students was produced. This game can help the learning process of class VIII students in Social Sciences lessons.

Based on the results of the alpha test, it can be concluded that this educational game is in accordance with the concept. The results of the calculation using beta testing of this game took 30 respondents, the results were 92.19%, so it is in the category of strongly agreeing with the suitability of an Educational Game for Introduction to ASEAN Countries for Middle School Students. This Android-based VIII is to be applied as a learning medium for Raden Fatah Cimanggu Middle School students.

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