

Educational Game Introduction and Understanding of the Basic Values of the Republic of Indonesia for Android-Based Elementary School

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Abstract

This research creates an android-based educational game for the basic values of the Unitary State of the Republic of Indonesia. Making educational games using Game Maker in making the application, besides that this game is also equipped with drawings made with sketches and edited using CorelDraw to add color and complete the images that will be included in the educational game. The results of the feasibility test on the children of SD Khalifah, the level of eligibility for educational games, showed a percentage of 86.28% of 50 respondents. The game, which is intended for elementary school students, is expected to explain the practice of the country's basic values more pleasantly.

INTRODUCTION

Pancasila education experienced ups and downs in its implementation. Efforts to cultivate or inherit the values of Pancasila have been consistently carried out since the beginning of independence until now. Although, their form and intensity differ from age to age. At the beginning of independence, it was carried out in the form of speeches by the nation's leaders in grand meetings broadcast via radio and newspapers. Then, on July 1, 1947, a book was published containing Bung Karno's Speech on the Birth of Pancasila. The book is accompanied by a foreword from Dr. K.R.T. Radjiman Wedyodiningrat who, he is known as Kaitjoo (Chairman) Dokuritsu Zyunbi Tyoosakai (Independence Preparatory Investigative Agency) (Anonymous, 2016).

Pancasila serves as the basis of the Republic of Indonesia. The values contained in the Pancasila principles are rooted in the personality and culture of the Indonesian nation. Pancasila as the basis of the State of Indonesia consists of five precepts between the

precepts of one another and are interrelated and interrelated relate (Anonymous, 2017).

In a SIMETRIS journal article states that the development of technology is increasingly rapid, it must be utilized in every side of human life. with the aim that the technology is useful, helping to simplify human life. Technology does not only play a role in the lives of adults, but it would be nice if technology also plays a role in the lives of children, especially in the field of education. The focus in this research is Android technology, to make it easier for children to learn English. 48.6% of research respondents strongly agree. The game can run on android devices on several versions of the operating system. so that children know more names of Alphabet, Numbers, Fruits, Animals, Transportation, Flat Shapes, Human Body Parts and Colors in English (Hartono et al., 2016).

Research Development of the ADDIE Model with Analysis, Design, Development, Implementation and Evaluation accompanied by observations and interviews in SD 1 Japan, application design, analysis of usability data and functional suitability. The results of the

analysis using ISO 25010 with the results of the functional suitability test of the media test obtained 86.6%, the material test is 100%. the compatibility test went well indicated by the evidence that it can be installed and uninstalled on various types of devices (Amanda & Putri, 2019).

The application does not require a lot of memory, conformity to the material. in the usability test the results obtained 93.7% were tested on fourth grade students. so that this educational game is suitable for use as a learning medium for fourth grade elementary school students.

Pratama conducts research to produce an Android game product containing material. Domain of Learning Technology that is feasible as an alternative learning media for students of the Learning Technology Study Program, Faculty of Education, Yogyakarta State University. The feasibility value is known through expert judgment, potential users, and usability learning (Pratama & Haryanto, 2018).

According to research on game design and the learning process using games makes students learn comfortably. The research method is Research and Development (R&D) using the 4D-Thiagarajan model, define, design, and develop. The research subjects were students of class VII D SMP N 13 Semarang, Central Java, using quantitative descriptive analysis techniques. With the results of the study showing the level of game feasibility is 92.5% from the material aspect; 95.2% of the media aspect, on the problem-solving skill test achieved 100% classical completeness, the criteria were very good, the average score of students was 82.8 (Winarni et al., 2020).

Conducting research on educational games for Mathematics Learning for Elementary School Children in Grades 1 and 2 based on Android, according to Adrian, Q.J. Educational Games are digital games that designed for educational enrichment (supporting Teaching and learning) (Adrian & Apriyanti, 2019). Educational games are game media that have educational value, have the benefit of helping the growth of players' physical and cognitive abilities (Sutoyo, 2017).

According to Wibowo research that video games with a strong narrative are one way to develop video games, using the moral issue of video games. video games have the potential to

be a better learning medium than books or movies. Video games are also able to affect the morality of respondents in the short term, but not in the long term (Hadiwardoyo, 2020).

Playing games for children can eliminate boredom. Learning game media are developed so that students can take advantage of their free time and are especially useful for practicing their numeracy skills (Rahmawati et al., 2020).

Through educational games, students can get a learning atmosphere the new one with the quality of the material adapted to the learning model modern, namely student center learning (Chandra, 2017). One of the multimedia that can utilized and developed in activities learning is the use of games. Residual interest in games maybe it will continue increase from time to time. students often forget study because the time should be to learn is spent playing games. Games do have an impact negative for the players, including making addicted to forgetting the time. However, games also have an impact positive (Suka Maryana et al., 2019).

METHOD

Material

Hardware and Software Specifications.

In the design and manufacture of this educational game using hardware and software that supports specifications that also support the smooth production, the following are the hardware and software specifications used:

Hardware specifications: System Model: MS-7640, Processor: AMD FX(tm)-4100 Quad-core Processor, Memory: 8192MB RAM. Software specifications: Windows 10 Enterprise 64 bit, Game Maker Studio, CorelDraw, JDK, NDK, SDK.

1. Analysis and Design:

The design of the game display is carried out. After that, the game design is made using the hardware and software that has been determined

2. Testing the system with several trials and analyzing the performance in each part of the Educational Game system and summarizing the test results to conclude that the system goals have been achieved.

RESULT AND DISCUSSION

The implementation of this educational game can be seen in Figures 1 to Figure 3. Main form design can be seen on Figure 1, material form design can be seen on Figure 2, and game type form design can be seen on Figure 3.

In the previous form (can be seen on Figure 2) when the player has selected and pressed the pre-order button which is between the previous arrow buttons, the player will get a display like the one on the side. This is a display of learning material that will be given to players, in this display there will be a symbol of the appropriate precepts selected at the beginning to be studied and accompanied by

examples of application with images that are expected to attract more attention and are easy to remember and understand by players. In the upper right corner there is also an "x" sign to close this form and return to the previous form.

On the Figure 3, this is the form when the player presses the play button on the main form. In this view the player will again choose the type of game to be played, here there are only two types, namely guessing pictures and Adventure. In this view there is an application icon at the top left and a back button at the bottom.

Educational narrative game can be seen on Table 1.



Figure 1. Main Form Design/
Home

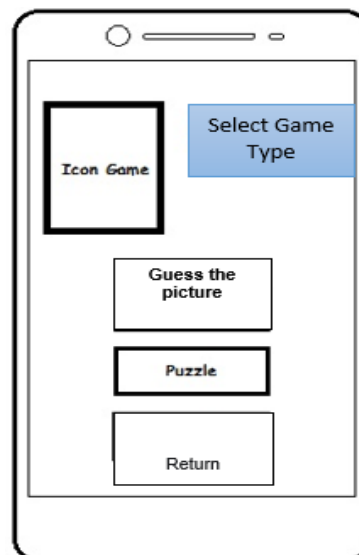


Figure 2. Material Form Design

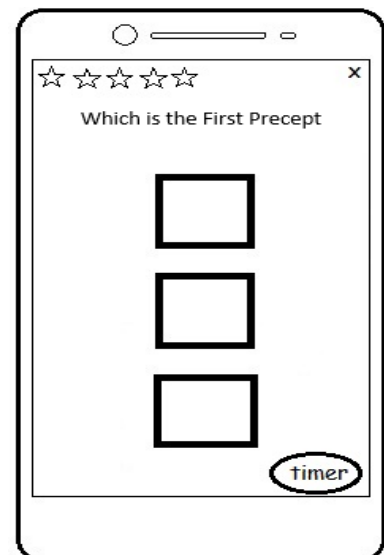


Figure 3. Game Type Form
Design

Table 1. Educational Narrative Game

No	Narrative	Information
1	Knowing and understanding the Basic Values of the Unitary State of the Republic of Indonesia which consists of five precepts, Let's learn Pancasila before playing.	Home/home screen
2	The first precept of Belief in One God is symbolized by a Star, Every citizen must be devoted to God Almighty, choose a religion according to their beliefs and respect each other among other religious communities.	Material please first
3	3The second precept of Just and Civilized Humanity is symbolized by a chain, Every citizen must always behave well, be civilized and respect each other in everyday life.	Second please material
4	The third principle of Indonesian Unity is symbolized by the banyan tree, As a nation of Indonesia, we must remain united regardless of ethnicity, race, and culture of each person.	Third please material
5	The fourth precept of Democracy Led by Wisdom and Wisdom in Deliberation and Representatives is symbolized by the head of a bull, as the Indonesian nation must always prioritize deliberation to make decisions without prioritizing personal interests	The fourth precept
6	The fifth principle of Social Justice for All Indonesian People is symbolized by rice and cotton, Always being fair to others, giving rights and carrying out obligations, for example in receiving education.	Fifth precept
7	Choose the type of game	Form select the type of game
8	Which is the symbol of the first precept?	Guess the first please picture
9	Which is the symbol of the second precept?	Guess the second please picture
10	Which is the symbol of the third precept?	Guess the third please picture
11	Which is the symbol of the fourth precept?	Guess the fourth precept
12	Which is the symbol of the fifth precept?	Guess the fifth precept image
13	Collect all the image pieces	Adventure games
14	Right	Correct answer
15	O'o	Wrong answer
16	You are great	Output score guess the picture
17	Every citizen must be devoted to God Almighty, choose a religion according to his beliefs and respect each other among other religious people.	Game output The first precepts application adventure
18	Every citizen must always behave well, be civilized and respect each other in everyday life.	Game output Adventure of the application of the second precept
19	As a nation, Indonesia must remain united regardless of each person's ethnicity, race, and culture.	Game output Adventure of the application of the third precept

At the implementation stage is a description of an application system so that the application is ready for use. This stage is carried out after the analysis and design stage, the implementation stage will explain the application that has been made and the interface of the application as well as the tests that have been carried out whether it is appropriate and feasible to use. From the results of the tests that have been carried out, it will be concluded whether in accordance with the expected results in accordance with the objectives described in the previous chapter.

The result of the design is the final form that has been implemented in accordance with the initial design in chapter 3. In the previous design, only an interface design was made which became a reference in implementing it into a system as in this chapter. In this section, each interface that has been made into a complete system will be explained by adding and perfecting each part of the interface that is considered lacking, here is an explanation of each interface that has been converted into the system.

Table 2. List of questionnaires

No	Question	Response	
		Yes	No
1	Can playing games make it easier to know Pancasila?	42	8
2	Is the application example described easy to understand	41	9
3	Is the game easy to play	38	12
4	Is this educational game interesting	40	10
5	Can finish the Adventure game	37	13
6	Can answer the question guess the picture game	37	13
7	Is this educational game useful as a medium for learning Pancasila?	41	9
	Total	276	74
	Average (%)	78,86%	21,14%

Educational game testing is intended to determine the extent of the success of the system contained in educational games. Therefore, one of the tests carried out is to try to install the game on several Android platforms with different versions. The following are the results of installing educational games on several smartphones.

The method of data collection in this study is a questionnaire (questionnaire) which aims to determine the feasibility of educational games. The following is a list of questions given to users who have tried educational games (can be seen on Table 2). The questionnaire consists of seven questions that will be given to 50 respondents who are students at the Yogyakarta Khalifah Islamic Elementary School. Respondents were asked to put a check mark for each "Yes" or "No" answer.

CONCLUSION

This Educational Game for Introduction and Understanding of the Basic Values of the Republic of Indonesia for Elementary School Children Based on Android can be a new alternative in learning as well as playing media. The level of eligibility for educational games shows a percentage of 86.28% of 50 respondents, which means that most of the respondents can play and understand educational games.

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