Development of Educational Games Introducing Good and Ungood Deeds as a Media for Early Children's Learning

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Abstract

The development of digital technology has provided opportunities to create learning in digital educational games for early childhood. The need for educational games is to play so that the teacher hopes to be able to create educational play-based learning media. The stages of development are as stated in Permendikbud 137 of 2014 concerning PAUD National Standards. The six aspects are aspects of the development of religious and moral values, cognitive, social-emotional, language, physical-motor and artistic. In improving aspects of its development, early childhood is accustomed to being given educational stimulation, one of the aspects of child development that is very influential in achieving growth and educational goals is the aspect of the development of religious and moral values. The need for the development of religious and moral values from an early age to become habituation so that children can grow and develop into moral human beings according to ethics in behavior. This study aims to create a moral game that produces a moral learning educational game as a medium for early childhood learning. This research produces a moral education game that can be run on smartphones. This research is a quantitative research using R&D (Research and Development) research methods. The data in this study were obtained through data collection methods including observation, interviews, literature and questionnaires. This study uses the ADDIE development model in developing an educational game that recognizes good and bad deeds. This educational game through computers and smartphones is in the form of games related to understanding good and bad deeds. Hopefully this educational game will present other similar educational games that can improve various aspects of early childhood development.

Keywords: educational games; morals; early childhood; smart apps creator.

A. INTRODUCTION

Early childhood is often called the Golden Age, during this period children experience rapid development throughout their lives (Fauziddin & Mufarizuddin, 2018). So that children have a lot of potential that must be developed well, this is the right time to form a positive personality in children with the aim of instilling good character values. Therefore, young children need supervision and direction to develop their potential. This direction can be achieved by providing education from parents themselves or through early childhood education institutions.

Early childhood education (PAUD) plays a very important role in the history of children's further development. Based on Minister of Education and Culture Regulation Number 137 of 2014 concerning National PAUD Standards (replacing Permendiknas 58 of 2009), Early childhood education (PAUD) is a coaching effort aimed at children. from birth to the age of six which is carried out

through providing educational stimulation so that children are ready to enter further education (Yuyun Istiana, 2014).

In early childhood education there are 6 aspects of development according to the age group that early childhood goes through. Development stages as stated in Minister of Education and Culture Regulation 137 of 2014 concerning National PAUD Standards. These six aspects are aspects of the development of religious and moral values, cognitive, social emotional, language, physical motor and art. In improving aspects of their development, young children are accustomed to being given educational stimulation. One aspect of children's development that is very influential in achieving growth and educational goals is the aspect of developing religious and moral values. It is necessary to develop religious and moral values from an early age to become a habit so that children can grow and develop into moral human beings who comply with ethical behavior.

Similar to habituation, learning strategies also play an important role in determining educational success and the overall personal formation of children (Mulyasa, 2017). Learning strategies with approaches to teaching also manage learning activities which aim to convey material systematically so that children can master it effectively and efficiently (Hasanah, 2019). Therefore, it is necessary to develop it to suit children's learning needs and current developments.

Current developments in the field of educational technology and learning technology require the use of various learning media. Learning media is a lesson component that has an important role in teaching and learning activities. Where the reduction of the conventional learning material delivery system which prioritizes lecture methods and assignment methods is replaced with a modern learning material delivery system which prioritizes the role of children and the use of multimedia technology (Asrining, 2016).

With technology, these institutions can progress. Multimedia is a means and infrastructure that is used using computers. Multimedia technology can make learning easier and is very appropriate for the development of children's moral religious values because multimedia combines various media of text, sound, images, graphics and animation (Asrining, 2016). Students can immediately see and hear about the things they are learning. One way is by using educational games.

Educational games are games that are specifically designed as learning media to convey material through sound, text, images, video and animation which can be done by playing while learning easily. Educational games can be used to provide teaching to attract and make children happy when learning (Purnomo, I. I., 2020)

The educational game developed in this research was created using the Smart Apps Creator 3 (SAC3) application. Smart Apps Creator 3 (SAC3) is software that functions as a platform for creating Android and HTML applications. SAC3 was chosen because the manufacturing process does not require special programming language skills, just a computer or laptop and an internet network. Apart from that, SAC3 also offers a wide variety of templates

that make creating educational games very easy for beginners. Can change templates by presenting learning material in the form of text, images, audio or video. The products produced are in APK format for offline access or in HTML format for online access (Khoirudin et al, 2021).

This research was motivated by children's low knowledge in distinguishing between good behavior that should be imitated and bad behavior that should be avoided. This can be caused by students' lack of interest and attention in following the ongoing learning process. Apart from that, the media used by teachers is less interesting and prevents them from absorbing the material presented well. The aim of this research is to produce a moral education game, providing new learning alternatives that can be run on computers and smartphones.

Based on a study compiled by Wafda Adita Rifai (2015), this research was conducted with the aim of (1) to develop educational games on Android-based mobile devices, (2) to determine the performance of educational games based on the aspects of functionality, reliability, compatibility and playability, and (3) to determine the feasibility of educational games. This research uses research and development (R&D) methods. The steps taken using the V-model include 1) requirements analysis, 2) specification analysis, 3) design, 4) implementation, 5) unit testing, 6) integration testing, 7) system testing and 8) acceptance testing.

Based on research conducted by Busran and Fitriyah, regarding applications for learning to read for preschool children based on Android smartphones using supporting software Java Development Kit JDK IDE Eclipse, Android Software Development Kit (SDK), Android Development Tool (ADT) which were created using the Java programming language. It can be concluded that application software can be used as a teaching tool in the form of educational games based on Android smartphones with mobile learning technology.

Based on research by Dian Wahyu Putra, et al (2016) regarding educational games for young children, the use of smartphones, iPads, Tablet PCs and other similar things in everyday life is increasingly widespread. Starting from well-known brands to ordinary ones and sophisticated ones to simple ones. Various reasons become a magnet for all groups to use it. The main reason is that it is light, easy to carry and practical to use. Apart from that, there are many game features that are not only entertainment for playing, but there are many games to sharpen thinking and logic which can introduce material to make it more interesting to accept and understand, especially for children who are still at an early age. Early childhood children between the ages of 3-6 years are in the Golden Period of their brain development. At this age, they are at their most rapid growth and development period, both physically and mentally. Therefore, the author created an educational game based on the Android operating system with the hope that children can immediately use the game application and gain more knowledge and change their learning patterns so they don't get bored and bored.

The use of educational games has been widely carried out by researchers Wafda Adita Rifai, Busran and Fitriyah, Dian Wahyu Putra found that games have become very popular and can develop cognitive and social aspects but there has

been no further research to develop educational games in teaching moral character regarding good deeds and not good. This research aims to create a moral game that produces a moral learning educational game as a learning medium for early childhood.

B. RESEARCH METHODS

This research aims to develop an educational game to recognize good and bad actions. This research uses quantitative research methods with R&D (Research and Development) research methods. Research and Development is a research method used to produce certain products and test the effectiveness of these products (Rustandi, 2021). The data in this research was obtained through data collection methods including observation techniques, interviews, literature and questionnaires.

The development model used in developing educational games is ADDIE. Romiszowski stated that at the level of learning material design and development, systematicity as a procedural aspect of the systems approach has been realized in many methodological practices for the design and development of texts, audiovisual materials and computer-based learning materials (Ma'ruf, 2021). This model includes analysis, design, creation and implementation.

Researchers created a moral education game using the SAC3 (Smart Apps Creator 3) application. SAC3 was chosen because the manufacturing process does not require special programming language skills, just a computer/laptop and an internet network. Furthermore, the resulting product can be in APK and EXE format for offline access or in HTML format for online access (Khoirudin et al, 2021).

Validation is used to assess learning media in the form of educational games that have been developed. This data was obtained from media experts and analyzed using descriptive techniques of percentages and categories which are useful for describing the feasibility of testing learning media products in the form of educational games. Scores from material validation and media validation are presented using the formula:

$$\text{AP} = \frac{Skor\ Aktual}{Skor\ Ideal}\ x\ 100\%$$

AP : Percentage Figure
Actual Score : Score given by validators or experts
Ideal Score : The maximum score multiplied by the number of items and the maximum score for each item

The presentation scores obtained are then grouped into the assessment criteria in the following table

Table 1. Validation test categories

Score	Criteria
81 – 100%	Very Worthy It
61 – 80%	Worthy

41 – 60%	Decent Enough
21 – 40%	Not Worth It
1 – 20%	Very Inadequate

The results of the media validation test of educational games recognizing good and bad actions for early childhood learning can be said to be suitable for testing if the minimum percentage reaches the appropriate category, namely ≥ 61% (Mawardi, in Windawati & Koeswanti, 2021).

C. DISCUSSION AND RESULT

Design, Creation and Development of Moral Game Games

The results of planning an educational game to introduce color as a learning medium for early childhood, produced a moral game learning media which was divided into 5 display menus, including the intro display, main menu, play menu, material menu and instructions menu.

1. Intro menu display

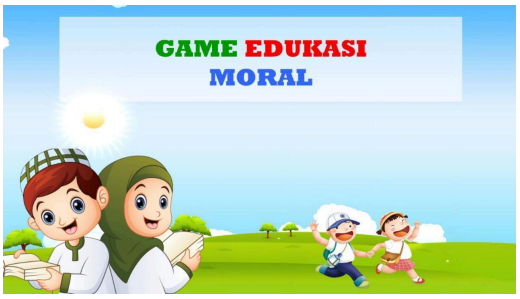

Figure 1. Intro Menu Display

The intro display is the first display that appears when playing a morality play game. In this intro display there are no buttons that can be touched, there is only the game title, namely the game Introduction to Good and Bad Behavior. The intro display only appears for a few seconds before entering the main menu.

2. First menu display

Figure 2. First menu display

The main menu display is the display that appears after the intro display comes out. In this main menu display there are menu buttons to move to the layout according to the user's wishes. These buttons consist of the play button to start playing the moral game, the

material button to view material about good and bad moral behavior, and the hint button to view playing instructions.

3. Play menu display

Figure 3. Game barrier displays select good behavior

Figure 4. Moral game game display

Figure 5. The game's barrier display selects bad behavior

The play menu display in the morality game before playing the game has a game divider to tell the player what to choose in this game. For example, when the game divider displays choosing good behavior, the player must choose good behavior in the game. Next is the main game display, in which there is a scoreboard to calculate the scores obtained by children. Every question answered correctly by the child gets a score of 4. In the play menu display there are also two pictures showing pictures of good and bad behavior. Children are instructed to choose one of the pictures by touching the picture that corresponds to the question. Apart from having a scoreboard and pictures of good and bad behavior, this menu also has written questions and a voice that reads the questions so that children can understand the questions well and answer them correctly. In this moral game there are 11 good behavior questions and 14 bad behavior questions, and the maximum score obtained by children is 100 points.

4. Material menu display

Figure 6. Material menu display

In this material menu display, there is only one early childhood learning material in the form of a video sourced from YouTube. This material contains good and bad behavior.

5. Display instructions menu

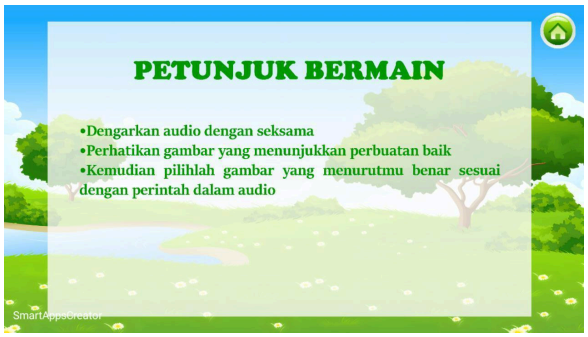

Figure 7. Display instructions menu

In this instructions menu display there are two layouts, the first is playing instructions and the second is assessment instructions for teachers. In the playing instructions layout there are instructions on how to play the morality play game along with audio so that children who cannot read can know how to play this moral play game.

After the educational game is developed, the next stage is to carry out validation tests with media experts. Validity tests were carried out to determine the feasibility of educational games to introduce good and bad actions for early childhood learning. The validity test was carried out by a lecturer at the Early Childhood Teacher Education Study Program, Indonesian University of Education, Serang Regional Campus, namely Robby Naufal Arzaqi, M.Pd.

Walker & Hess (Dewi, 2012), states that to determine the quality of computer-based multimedia in learning, you must look at the following criteria: (1) Quality of material and objectives, which include: accuracy, importance, completeness, balance, attractiveness, reasonableness, and suitability with the student's situation. (2) Quality of learning, which includes: providing learning opportunities, providing assistance for learning, motivating quality, instructional flexibility, relationships with other teaching programs, quality of tests and assessments, can have an impact on students, and can have an impact on teachers and

teaching. (3) Technical quality, which includes: readability, ease of use, display/display quality, quality of handling student responses, quality of program management, quality of documentation, and other more specific technical qualities.

From Walker & Hes' opinion, researchers grouped validation instrument rubrics into 4 aspects, namely navigation, convenience, writing (text), and appearance. In the navigation aspect there are 2 indicators, 4 indicators in the convenience aspect, 6 indicators in the writing (text) aspect, and 10 indicators in the display aspect. So, there are 22 indicators from 4 aspects with a maximum score of 5 and a minimum of 1 for each indicator.

Table 2. Material data validation results

Aspek	Skor Ideal	Skor Aktual
1. Navigation	10	10
2. Convenience	20	19
3. Writing	30	27
4. Appearance	50	45
Total	110	101

$$AP = \frac{Skor\ Aktual}{Skor\ Ideal}\ x\ 100\%$$

$$AP = \frac{101}{110}\ x\ 100\% = 91{,}81\%$$

The assessment given by the material validator obtained a percentage of 91.81%, which shows that the assessment criteria are very feasible. Material validators assess educational game media products based on 4 aspects, namely navigation, convenience, writing (text), and appearance. The use of educational games to recognize good and bad actions can be used for early childhood learning. This educational game media aims to help children recognize and recognize good and bad actions.

Implementation of Moral Games Educational Games

The implementation stage here is the stage where the processes at the design and manufacturing analysis stage are implemented in the software. The moral game game presented is in the form of software that has been tested independently many times, to ensure that the final result of the moral game educational game for early childhood can be operated well.

After the trial was carried out, the next stage was to carry out direct implementation with early childhood children at the UPI Labschool Kindergarten, Serang Campus. To provide guidance on the use of moral games, children at school were lent the author's smartphone.

Based on the researcher's observations after implementation and interviews with the children, it was found that the children enjoyed playing moral games. Some children even want to play more than once.

D. CONCLUSION

Based on the description and results that have been carried out during the creation of an educational game to introduce good and bad actions for young children, it can be concluded that this educational game application has been completed and developed using the R&D (Research and Development) research method. This application can be used by young children aged 4-6 years with the assistance of teachers or parents to introduce good and bad actions in the environment around the child. The results obtained when children use educational game applications can be concluded that children feel happy and entertained when playing educational games to recognize good and bad actions. Children also want to play this educational game more than once, and it can be concluded that children are able to differentiate between good and bad actions.

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