

## Development of Game-based Learning Media for Early Childhood Animal Recognition

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### ABSTRACT

Cognitive learning activities through the introduction of animals for Early Childhood (AUD) have a very important role in developing all children's potential. One of them is the potential intelligence of children. AUD is a pretty good stage for training the brain of a child, where they will be more interested and active when they see a game or such that contains a lot of animation and sound. With the existence of game-based animal recognition learning media, it will be an interesting thing for early childhood, namely kindergarten, as well as teachers when interacting and conducive learning. This learning media contains several learning points and games that train children's cognitive abilities, there is a learning menu to recognize the name of the animal and its voice, then the game composes the word and guesses the illustration image of the animal, as well as the support of singing videos about animals given by the teacher to children. Game-based learning media is built using construct, using Luther Sutopo's method. The result of this research is animal recognition learning media for early childhood.

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## INTRODUCTION

The use of technology such as smartphones, iPads, tablets, personal computers and so on is more because it is easier to carry when traveling and everyone can use it easily. (Afifah, N., Kurniaman, O., & Noviana, 2022)(Fajar et al., 2022). The world of education, especially for early childhood, still uses simple learning methods or uses guidebook media so it is necessary to develop a learning process, especially for early childhood related to animal recognition by utilizing current technology. Whereas the early childhood stage tends to be more interested in animation both sound and image. At this stage, children will more easily remember something that is characterized by attractive colors and communicative and fun shapes.(Pratiwi, N. W. M., Ugiarto, M., & Cahyono, 2017)(Lidi, M. W., & Daud, 2019).

Games are one of the technologies that can be a means of entertainment and hone skills and can also be used as a medium of learning and education. (Arpiansah *et al.*, 2021). The application of games for educational media or what is called education games stems from the rapid development of video games and makes it an alternative media for learning activities. This game has educational elements that can stimulate brain development.(Huzena, B. R., Fatmawati, F., & Handayani, 2020)(Syah, M. F. J., & Harsono, 2020)

Education is a learning process that has the aim of developing students' potential and a good learning process. Educational games are games that contain educational content and have the aim of provoking children's interest in learning to absorb learning material while playing, it is hoped that with this game children will find it easier to understand the material presented.(Dwi Setia et al., 2019) (Syafitri et al., 2021).

## THEORETICAL REVIEW

Learning media is a set of tools or as a container in conveying messages or information that can be in the form of material in learning so that it can foster a person's interest in learning in order to achieve the goals of learning(Sefriani et al., 2021)(Zakiah, 2019)(Maulana et al., 2019).

Early childhood is the right time to provide the basis for the development of physical abilities, language, social-emotional, self-concept, moral arts and religious values. The success in the early childhood education process is also inseparable from the role of educators in providing education, especially in the aspect of development(Frisnoiry et al., 2019)(Ariani & Ghansyam, 2022).

The importance of introducing animals to children, because introducing various kinds of animals to children can increase their knowledge and foster a sense of care, interest and affection for fellow living things Introducing various types of animals to children is a process that really must be underlined, because this will affect the naturalist intelligence in children can be well honed(Born, 2018)(Handayani & Kurniati, 2021).

Mobile learning is one of the alternative learning media development(Saraswati et al., 2022). Mobile learning has practical characteristics and can be carried anywhere. Mobile learning is learning and teaching that can be accessed via smartphones that are practical in nature(Andriah & Amir, 2021).

Education is a learning process that has a goal as a developer of self-potential in students and a good learning process. Educational games are games that contain educational content and have the aim of provoking children's interest in learning to absorb learning material while playing, it is hoped that with this game children will find it easier to understand the material presented (Khadijah et al., 2022) (Fayanto et al., 2022).

## METHODOLOGY

The development of animal recognition learning media for early childhood using the Luther-Sutopo method includes six stages, namely:

### 1. *Concept*

The stage of determining and creating concepts, objectives, target users, and others. The description of the concept and story board of the development of animal recognition learning media is presented in table 1 below:

Table 1. Description of Learning Media Concept

Title	:	Game-based Animal Recognition Learning Media for Early Childhood
Goals	:	Presents learning materials about animal recognition that can train children's cognitive abilities
Genre	:	<i>Quiz &amp; Trivia</i>
Platform	:	<i>Android based mobile</i>
Players	:	1 Players
Target	:	Children 4-6 years of age
Graphics	:	2 Dimention
Fitur	:	Audio of animal names and sounds, 2-Dimensional Objects Images of animals, Educational games, and a collection of singing videos of learning materials

### 2. *Design*

The stage of making storyboards or the flow of the program and the appearance of the application interface design.

### 3. *Material Collecting*

The collection of materials needed for the development of early childhood animal recognition learning media includes image assets, video assets, audio, animation, and so on that support the multimedia system.

### 4. *Device Schematic*

Application development refers to the design stage, such as storyboard and interface design. First of all, the audio is matched with the material that will be conveyed as learning material. Then, the assets that have been collected will be designed in Construct in accordance with the design stage.

## 5. Testing

After the assembly stage, the next step is testing. The application is tested to ensure all features work well and according to their functions. The testing method used is black box to ensure that the application runs properly and produces output in accordance with the purpose of this application.

## 6. Distribution

Applications that pass the testing stage and run successfully on the device then the last step is distribution. At this stage the application is distributed through the media used by users to install the application. This learning media is built for Android smartphones, so the media used.

## RESULTS

Development of game-based animal recognition learning media applications for early childhood as follows:

### 1. Main Page Display

The initial appearance of the development of animal recognition learning media is as follows:



Figure 1. Main Page View

Figure 1 is the initial display of game-based animal recognition learning media. On this display there are three menus in it, namely the learning menu, the play menu, and the singing menu. The "Learning" button is used for users to go to the learning page, where users can learn about animal names in English and Indonesian, animal sounds, and other descriptions of these animals. Button "Play" is used for users to learn to train the brain by learning in the form of games,

where on the menu there are two games, namely the game of composing animal words and the game of guessing animal pictures. Button "Sing" is used for users to learn animal recognition by playing videos that have been provided.

## 2. Learning Menu View

The learning menu display of the animal genetics learning development application is as follows:



Figure 2. Learning Menu Display

Figure 2 is a display of the learning menu of the game-based animal recognition learning media application. In this display the user can do learning by learning to recognize the names of animals in Indonesian and English, as well as the sound of the animal using audio that can be sounded. In addition, there is also a description of the animal such as physical characteristics and general characteristics of the animal, ranging from the number of legs, body shape, to the type of food. In the learning menu there is also a home button that is used to return to the main page of the application.

### 3. Play Menu View

The play menu display of the animal recognition learning development is as follows:



Figure 3. Play Menu Display

Figure 3 is a display of the play menu of the game-based animal recognition learning media application in which there are two game subfeatures including:

### 4. Word Composing Game View

The display of the subfeatures of the word composing game from the development of game-based animal recognition learning media for early childhood as follows:



Figure 4. Word Composing Game View

Figure 4 is a game display composing the word of the game-based animal recognition learning media application. In this display the user can play a game of composing words from randomized letters, then arranged according to the name of the animal image listed on the question, by pulling the letters that have been provided and inserted into the answer place. If the user is correct in placing the letter according to the answer, the letter can enter the answer box provided, but if the user is wrong in choosing or placing the letter, the letter will return to its original position and cannot enter the answer box. This game not only provides learning about animal recognition but users also get learning about the introduction of the letters of the alphabet because each letter will emit the sound of each letter. At each level there is a level of difficulty, namely when the game level continues, there will be an increase in the number of letters from the question and the addition of letters from the answer.

#### 5. Picture Guessing Game View

The following is a display of the guessing game subfeatures of the development of game-based animal recognition learning media for early childhood.:

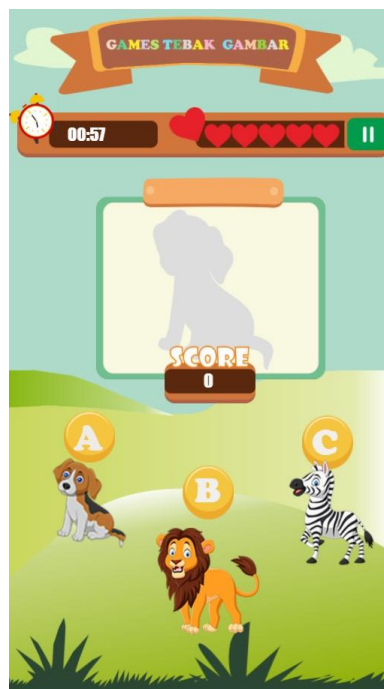


Figure 5. Guess the Picture Game Display

Figure 5 is a picture guessing game display of game-based animal recognition learning media applications. In this display the user can play a guessing game, namely guessing the shadow image of the animal image by pressing the answer in the form of animal images that have been provided. In this game there is a running time and lives that can be reduced when the user is wrong in choosing the answer, so when the time and life runs out, the user is declared to have lost the game. This guessing game can train children's brain and cognitive abilities.

## 6. Singing Menu View

The following is a display of the singing menu from the development of game-based animal recognition learning media for early childhood as follows:

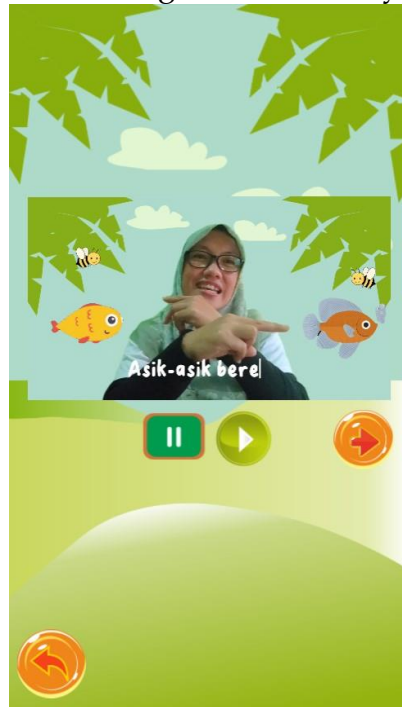


Figure 6. Display of Singing Menu

Figure 6 is a display of the singing menu of the animal recognition learning media application in which users can do animal recognition learning by playing a collection of video learning songs sung by teachers from related institutions. In this menu there are four buttons, namely the pause button which is used to pause the video to stop, the play button which is used to play back the paused video, the next button which is used to proceed to the next video, and the back button returns to the singing menu page., where the user can select a collection of videos that are already available.

## DISCUSSION

This part allows you to elaborate on your results findings academically. You must not put numbers related to your statistical tests here; instead, you have to explain that numbers here. You have to compile your discussion with academic supports to your study and a good explanation according to the specific area you are investigating.

## CONCLUSIONS AND RECOMMENDATIONS

The development of game-based learning media has proven effective in the learning process with the theme of animal recognition because early childhood becomes more interested and more enthusiastic in learning to recognize animals.

## FURTHER STUDY

This learning media can be further developed by adding more types of animals, songs about animal recognition and games with other forms using various platforms not only the Android platform.

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