

English Game Education Application with Mobile Learning for Childhood

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Abstract

Educational games are learning activities carried out while playing. The educational game has the purpose of entertaining and can hone and make the brain more active. Compared to learning, children are more able to apply arithmetic by learning while playing. Play and children are an integral unit. In childhood, the ability to capture learning is very high, and the ability to remember will also be higher. Factors that make it difficult for children to read and recognize objects and colours around them, usually they are less interested in the media used. Early childhood follows the rhythm of its development. In old age, language development is significant because in early childhood is a sensitive period for children. English is the international language. English in children begins by introducing vocabulary that is closest to the child, which aims to make it easier for children to remember. One way to maximize the power of capturing is to provide fun learning by involving learning by playing. This research produced an English language education game application based on cellular knowledge. In this application, there are educational and play features. The pedagogical feature gives an attractive appearance and produces sound from the lessons available. The game features available guessing games, guessing sounds and puzzles. Making English educational game applications aims to teach children English vocabulary and make children not bored with learning

Keywords— *English, game, education, application, children*

I. INTRODUCTION

At this time, knowledge and technology are well developed. Technology can create new things by building creativity and can open up insights for broader thinking. At this time, technology is essential for human life. The technology that is currently developing very rapidly, namely smartphones. From adults to children already using smartphones.

The development of mobile applications for the development of smartphones, in terms of technology or the number of production. A smartphone is a platform that runs mobile apps. The rapid growth of smartphones has resulted in a significant increase in smartphone application development, commonly known as mobile applications.

Smartphones are now a smart tool for two-way communication, multimedia, and education. The atmosphere of learning in the world of education today is very sophisticated, with an atmosphere that is conducive, interesting, and creative. The progress of technology can facilitate everything, including learning.

A child's catchability is very high can be seen from several aspects available in table 1 about the child's ability to remember.

TABLE I. PERCENTAGE OF CHILDREN’S MEMORY

No	Percentage of children ability to Remember	
	<i>Given the ability</i>	<i>Percentage</i>
1	Seen	20%
2	Heard	30%
3	Seen and Heard	50%
4	Seen, Heard, and Done	80%

Based on the available aspect table, it can be concluded that the higher the child's memory is based on the activities carried out by the child [1]. Learning can maximize capture power by providing fun and exciting learning activities by involving play with learning [2].

Educational games are one way of learning, accompanied by games and new media, which are expected to increase understanding quickly, make children more active and supported by exciting games [3].

Educational games are used with the aim as an educational medium that has a pattern of learning while working. Users are asked to learn, so they can solve the problems that are available [4].

This game aims to improve concentration and brain development and can also train in solving problems quickly and accurately; the game has a problem that must be explained by the player [5].

Plato was the first to argue that children are easier to understand when taught through games using the arithmetic method of subtraction, addition, division, and multiplication by giving apples and doing counting activities using apples [6]

Games are the world for children. Children play while digging on the ground, imitating something they see. Playing like playing ball, climbing, running, singing, and playing puzzles for thinking activities. Play and children are united; children's activities are always associated with games. Learning that is suitable for young children is to play while learning.

A sensitive period for children is when children are at an early age. Language development is significant in early childhood. Indonesian is the mother tongue that is used every day, and English is an international language. English is crucial for science. English should be taught from an early age because an excellent child's catch can help them learn English quickly. In Indonesia, English is known from early vocabulary so that children can easily remember vocabulary.

Learning English at an early age is done in stages. With the method of translating word by word.

- Listening
These initial stages starting from short, easy words heard as "yes" or "no."
- Speaking
At this stage, starting from a few words, games to encourage children to talk in simple sentences such as "sit, come, kiss."
- Reading
There are two methods at this stage the whole language Approach and phonic.
- Writing
In the most challenging steps, in learning English, there are many the rule used[7].

II. RESEARCH METHODOLOGY

A. Analysis System

System analysis is the first stage in research that has the aim of providing understanding as a system requirement and describing the processes contained in the system that will produce outputs to the needs of users [8] [13]. Analysis of system requirements provides the specifications of the software developed [9]. This analysis will create software interfaces and other system elements and determine software system boundaries [10]. In the study of the system can find out the problems and constraints contained in the English game education application.

1) Analysis of Problem and Solution

Fishbone is a diagram used as a tool to help analyze and explain the steps of ideas on a problem. Fishbone theory is a technique for solving many problems in the causality method[11].

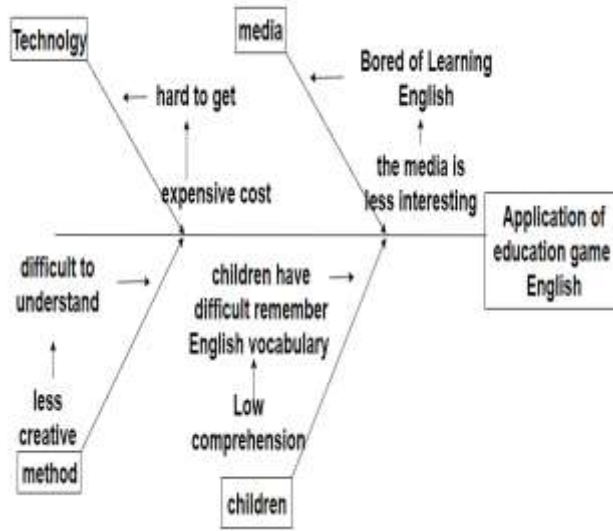


Fig. 1. Fishbone diagram

The supporting factors for this problem are the media, technology, methods and human resources.

B. System Planning

The system designer describes an activity or many activities, compiles, sketches in detail, or arranges several separate elements into a unified whole.

Use case diagrams are graphical depictions of some or all actors, use cases, and interactions between components that introduce a system that is built [12].

The use-case diagram explains the benefits of a system when viewed according to the views of people outside the system. This diagram shows the functionality of an order or class and how the system interacts with the outside world.

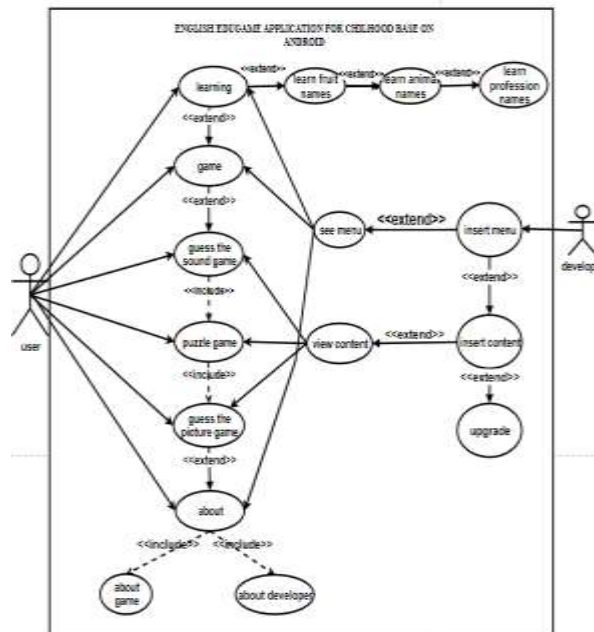


Fig. 2. Use case diagram of game education application

On application *game education* android-based English language page begins splash screen, later continued the home page, on this page the user can see the whole of the available services applied. In figure 2, we can see there are two actors that user and designer. Designers tasked to upload the application menu. Users are actors that interact directly with the application.

The actor entered the first view of the use is the application page *splash screen*, and loading will temporarily go directly to the home page there are two pages, the following are explanations of each menu function:

1) *Use Case Education Page*

In the menu, the actor will choose the education menu that he will learn first after the actor clicks on one of the knowledge. The application will display English from the actor's desired menu, and there is a button alphabet to select the actor, and on the button, the button will output volume.

2) *Use Case Game Page*

In the game menu featuring a selection of games that can be selected by the actor to play, the game provided picture guessing game, puzzle, and guess the sound.

III. RESULT AND DISCUSSION

A. *Design Interface*

Interface design is the look of the system seen by the user.

1) *Page of Splash Screen*

Splashscreen page is the page to see the application logo that lasted for 6 seconds, and on-page splash screen produces exciting sounds.



Fig. 3. Page of a splash screen

2) *Page of home*

The home page displays the main menu of the application, and there are two menus, namely education and game menu.



Fig. 4. Page of home

3) *Page of Education*

Education page is a page that displays several pages of view education, like education for fruit, education for an animal, and education for professions.



Fig. 5. Page of Education

4) Education Fruit Game Page

Education page displaying English pieces of fruit sequence according to the alphabet. Page navigation buttons are educational pieces that can scroll to select the alphabet of maca fruit, and when clicked on the alphabet will display a variety of fruit that originated by the chosen alphabet. In the page education fruit, there is a button home to return to the home, and a button's book to return to the book page of education.



Fig. 6. Education Fruit Game Page

Fig. 7.

5) Education Animal Page

Animal education is displaying English from animals that sequence according to the alphabet. There are also physical education page navigation buttons that can scroll to select the alphabet of these kinds of animals, and when clicked on the alphabet will feature a wide variety of animals that originated by the chosen alphabet. In the page education animal, there is a button's home to return to the home, and a button's book to return to the book page of education.



Fig. 8. Education animal page

Fig. 9.

6) Education Profession Game Page

The page featuring is in English education profession of professions sequence according to the alphabet. Weather educational profession there are also navigation buttons that can scroll to select the alphabet of sorts of jobs, and when clicked on the alphabet will feature a wide range of occupations that originated by the chosen alphabet. In the page education animal, there is a button's home to return to the home, and a button's book to return to the book page of education.



Fig. 10. Education Profession Game Page

Fig. 11.

7) *Game of Page*

In the game, there is three options page interesting game related to the education provided in the educational menu, like a game of guess sound, game puzzle, and set of guess image.



Fig. 12. Game of Page

Fig. 13.

8) *Guess Sound Game Page*

On the page there is a sound guessing game featuring voice and actor chose the answer read out by the application, if the answer is correct then it will go to guess the sound afterwards if one would not guess will go to the next music.



Fig. 14. Guess Sound Game Page

9) *Puzzle Game Page*

On the page there is a picture puzzle that has been scrambled, the actor was asked to compose the picture correctly if it is appropriately structured puzzle game will proceed to the next puzzle. The following Puzzle 3x3, there are eight pictures neatly stacked to form a complete picture.

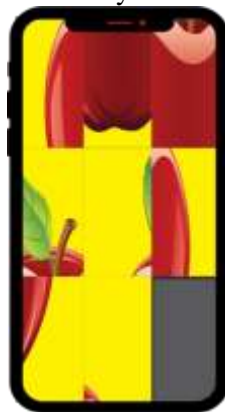


Fig. 15. Puzzle Game Page

10) Guess Image Game Page

In the picture, there are guess image game page that displays an image, and the actor chose answers that are available in a choice of solutions, if the answer is correct then it will go to guess the sound afterwards if one would not guess will go to the next music.

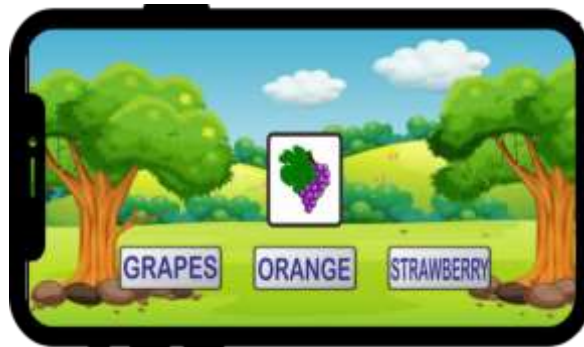


Fig. 16. Guess Image Game Page

IV. CONCLUSION

With the design of Android-based English game education applications, users can learn while playing with media that can attract attention. This application displays English from the names of fruits, animals, and professions that are by the alphabet. Users can also learn the introduction of the alphabet through this application. English applications, some games can sharpen the brain of a child. This application is used as a medium of learning and playing for children

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