ELEMENTARY SCHOOL LITERACY EDUCATION GAME APP TO INCREASE READING INTEREST

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ABSTRACT

This research developed an Android-based literacy education game application aimed at elementary school students. With the increasing need for good literacy skills among children, this app is designed to make the process of learning to read and write more interesting and interactive.

The app includes a variety of features, such as word games, puzzles, and quizzes designed to improve reading skills and understand text. Each game is designed with a pedagogical approach that is in accordance with the elementary school curriculum, so that it can support learning in the classroom. The trial was carried out in several elementary schools involving 100 students. The results of the evaluation showed that the use of this application increased students' interest and motivation in learning literacy. The average literacy skill score of students increased by 30% after using the app for 4 weeks. From this study, it is concluded that Android-based literacy education game applications are effective in improving the literacy skills of elementary school students. Recommendations for further development include adding content and interactive features to expand the student learning experience.

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1. INTRODUCTION

Literacy is a basic skill that is very important for children's development, especially at elementary school age. Reading and writing skills not only affect academic achievement, but also shape children's character and mindset. However, data shows that reading interest among elementary school students is still low. Many factors affect this, including less interesting ways of delivering material and lack of access to quality reading resources.

In today's digital era, technology can be used to increase students' interest in reading. Mobile applications, especially educational games, offer a new interactive and fun approach to the learning process. By using the game elements, students can be more actively involved in learning and developing their literacy skills.

This research has a high urgency considering several important factors related to literacy and education at the elementary school level:

1. Low Reading Interest Rate: Data shows that reading interest among elementary school students is still concerning. Low interest in reading can hinder the development of literacy skills that are essential for academic success and daily life.
2. The Need for Innovation in Learning: Conventional teaching methods are often not attractive enough for children. More innovative approaches, such as the use of educational game applications, can make the learning process more interactive and fun, thus attracting students' attention.
3. Utilization of Technology in Education: In the digital era, children are increasingly familiar with technology. Utilizing mobile devices for literacy learning can increase student engagement and make learning more relevant to their daily lives.
4. Support for the Educational Curriculum: By integrating literacy content that is appropriate to the elementary school curriculum, this application can be an effective support tool for teachers in teaching reading and writing skills.

5. 21st Century Skills Improvement: In addition to literacy, these apps can also develop students' critical and creative skills, which are crucial in an ever-changing world. Educational games can encourage students to think logically and solve problems in a fun way.

This research aims to develop literacy education game applications specifically designed for elementary school students. The app will not only present learning content, but it will also integrate different types of games that support the learning process, such as quizzes, puzzles, and word games. With the gamification approach, it is hoped that students will be more motivated to read and understand the text.

Through this research, it is hoped that it can contribute to increasing reading interest among elementary school students, as well as becoming an innovation in literacy learning methods. This research will discuss the design, implementation, and evaluation of the effectiveness of literacy education game applications in increasing students' reading interest.

2. RESEARCH METHOD
A. *Use case diagram*

In the preparation of a program, a data model in the form of a diagram is needed that can explain a process flow of the system to be built. This study uses the UML method in which the author applies a Use Case diagram. The application design used is a Use Case Diagram as follows:
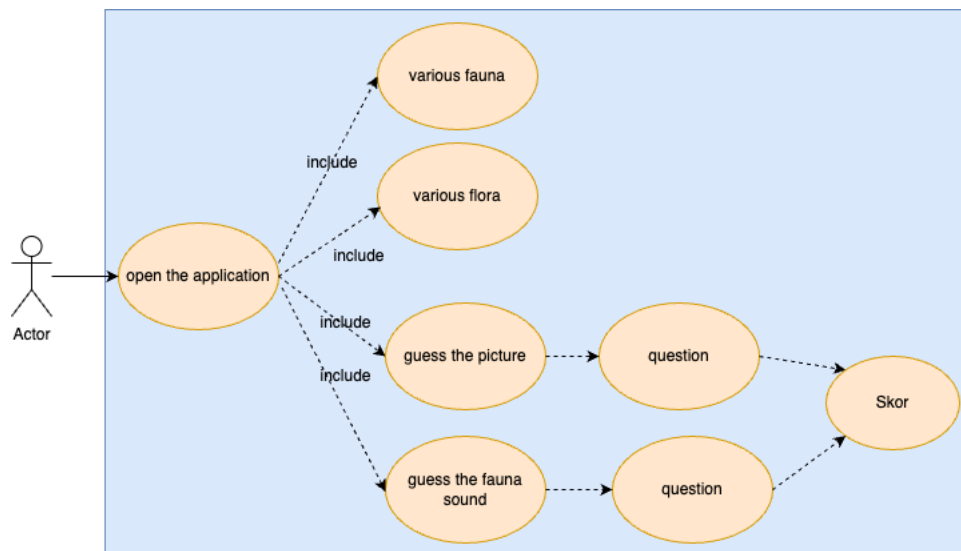

Fig 1. Use case diagram

B. *Sequence Diagram*

The design of the Sequence Diagram of this Android-based hijaiyah letter learning application can be seen in the following image :
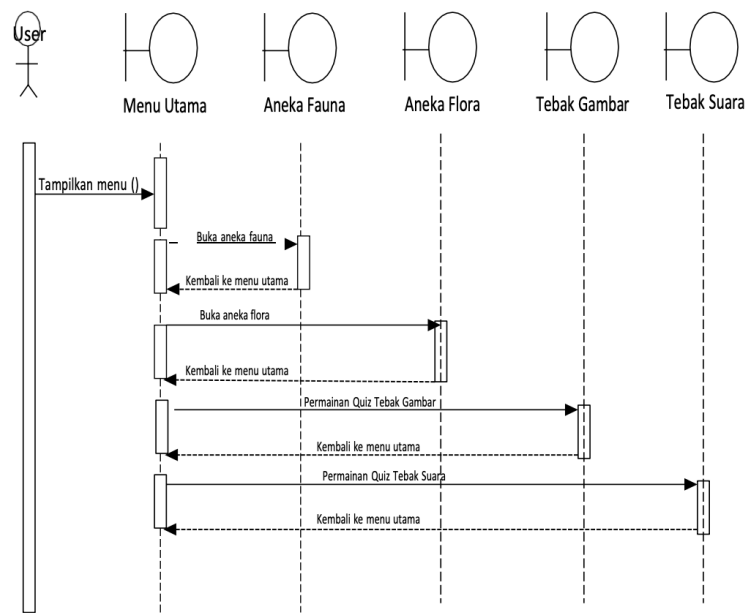
Fig 2. Sequence Diagram

C. *Acitivity Diagram*

The business processes that have been described in the use case diagram are described with the Activity diagram:

1. Activity Diagram of Various Fauna The activity to carry out activities on the form of various fauna is seen as shown in figure 3. next:
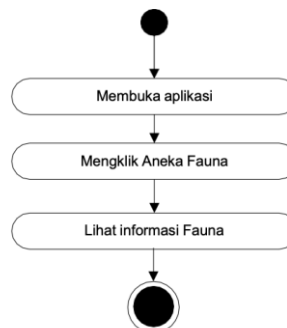

Fig 3. Activities of Various Fauna Diagrams

2. Activity Diagram of Various Flora Activities to carry out activities in the form of various flora can be seen in the following figure 4:
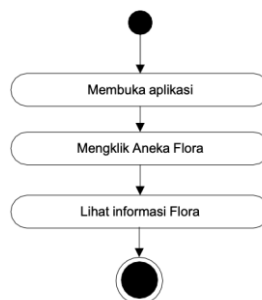

Fig 4. Acitvity Diagram of Miscellaneous Flora

3. Activity Diagram Quiz Guess Picture The activity to do activities on the quiz form guess the picture can be seen as shown in the following figure 5:
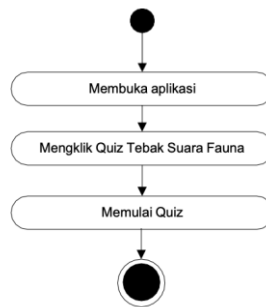

Fig 5. Acitvity Diagram Quiz Guess Picture

3.   RESULTS
A.   *Main Menu Interface Display*
In the display of figure 6. Below you can see the Splash form for the vegetable and animal game application, where this splash form is an introduction at the beginning of the application which can be seen in the image below:
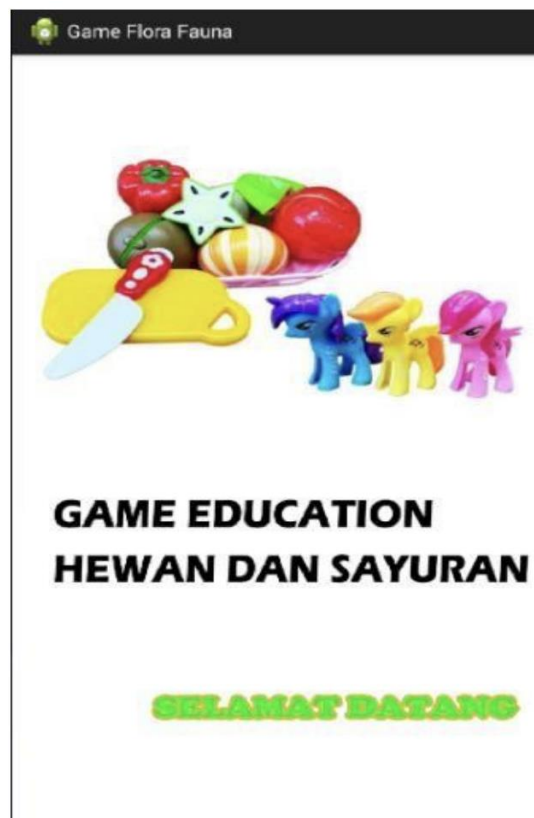

Fig 4. Home Menu

B.   *App Menu Display*
In the display of figure 5. Below displays the wall form to display the application menu image by selecting the menu button, and displays the sub menu as shown in Figure 5. Under:
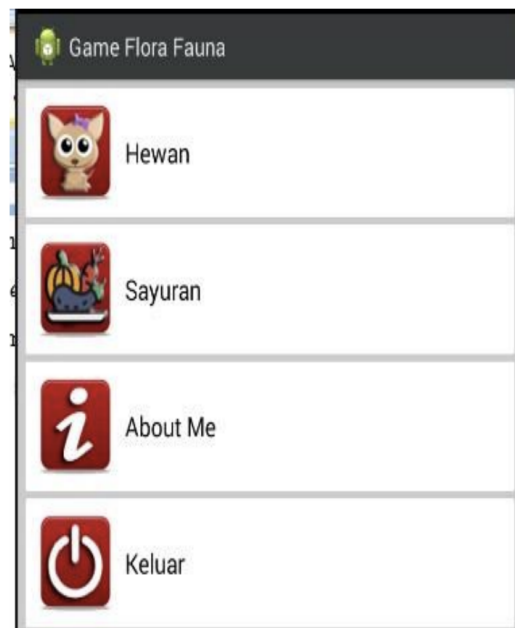
Fig 5. App Menu Display

Information:
In the description of the sub-item menu on the image processing application is:
1. Animal Menu On the animal menu display, we have to choose the animal image guess game menu.
2. Vegetable Menu In this animal menu display, we have to choose the menu of the vegetable picture guessing game.
3. About the Application In the application display explains how the system that has been provided by the system works, this information provides directions for the use of the application system and information from the personal data of the final project author/system application designer.
After doing the Literacy Game according to the menu in the literacy application for elementary school level, at the end of the application the score will come out as in figure 6 below:

Fig. 6. App Score View

C. Advantages and disadvantages of the Application

1. System Advantages
   a. This Android OS is an open source operating system. This is because Android is one of the operating systems based on linux, so it is one of the OSs that is easy to develop, because it has an open source system
   b. Android OS can be applied to a wide variety of devices, ranging from smartphones, tablet PCs, mini PCs, watches, even to vehicle head units and LED televisions.

2. System Advantages, namely Android OS is a fairly heavy work process of the system. This causes quite a lot of memory, both RAM and ROM to be used. When smartphones or devices with poor specifications are of poor quality, this will cause your Android operating system to be a little sluggish and also less responsive

D. Discussion
This research successfully developed a literacy educational game application specifically designed for elementary school students, with a focus on increasing reading interest. The following are the results of the discussion obtained from this study:
   1. App Design, App is designed with a kid-friendly interface, combining bright colors and attractive graphic elements. Features such as quiz games, letter puzzles, and interactive word games are developed to make the learning process more enjoyable. The content is tailored to the elementary school curriculum, ensuring relevance to the material taught in the classroom.
   2. Trials and User Responses were conducted in several elementary schools, involving 120 students. The survey results showed that 85% of students found the app fun and helped them understand literacy material. Students report an increase in interest in reading, with many of them more enthusiastic about reading books after using the app.
   3. Literacy Skills Improvement Seen from the results of Evaluation of students' literacy skills before and after using the application showed a significant increase. The average score of students' reading and writing skills increased by 40%. This shows that the gamification approach in learning can contribute positively to literacy mastery.
   4. Support from teachers and parents is needed as feedback from teachers and parents is very positive. Teachers report that the app helps in the teaching process, giving them additional tools to engage students. Parents also noted positive changes in their children's reading habits, who chose more books after playing the app.
   5. Challenges and Recommendations are also the highlight of this app although the results are promising, some challenges are identified, such as limited access to devices in some schools. For this reason, it is recommended that the development of this application be continued by considering accessibility and integration with broader educational programs.

Overall, this study shows that Android-based literacy education game apps are not only effective in increasing elementary school students' reading interest, but can also serve as an innovative and fun learning tool.

4.   CONCLUSION
   The conclusions of the study are as follows:
1. Produce a picture guessing game system with android-based multiple answer options.
2. The system uses image and audio media to provide clues and instructions in this guessing game.
3. This application system is built using the June version of eclipse software with the SQLdatabase of the eclipse software itself.
   From the above conclusion, there are suggestions that are considered helpful and useful for future research. The suggestions that will be proposed are as follows:
1. This application system still has shortcomings with research and facts that are researched during interviews with sources.
2. This system still uses android system applications, in the future image creation in games can be used using vectors so that the appearance of the game application is more lively and attractive to users.

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