

# ANDROID-BASED PICTURE GUESSING GAME APPLICATION TO IMPROVE EARLY CHILDHOOD SKILLS IN RECOGNIZING OBJECTS

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## Abstract

Interaction Strategies and Learning Processes are determinants in improving children's ability to learn, currently many students experience a tendency to be less motivated in learning because of learning strategies that do not motivate children's learning. This study aims to create an Android-based Guess the Picture Application to improve children's ability to recognize objects around their environment. The results showed that the application of Learning Strategies Using Android-Based Game Media for students of Paud Pelangi Kupang City can improve the ability of Level B early childhood in learning. The game application is designed and can be played with questions along with the images presented making it easier for students to recognize the images displayed on the screen through smartphone devices or other computer devices guided directly by the learning companion teacher.

*Keywords: Game, Guess the Picture, Early Childhood*

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## I. INTRODUCTION

Learning is basically an educator's effort to help students do learning activities. Learning is carried out in order to realize the efficiency and effectiveness of learning activities carried out by students, a good learning process, emphasizes more on preparing (facilitating) students to enter their lives, meaning that teachers are very aware of the various learning needs of their students. [1]. One of the problems facing our education system is the weak learning process. [2]. In the learning process from an early age is a determinant of child growth to the next level. Early childhood education (PAUD) is a level of education before the level of basic education which is a coaching effort aimed at children from birth to six years of age which is done through providing educational stimuli to help physical and spiritual growth and development so that children have readiness to enter further education, which is organized in formal, non-formal, and informal channels. [3]. Basically, children are less encouraged to develop thinking skills but rather to memorize information so that children's brains are forced to remember various information without being required to understand the information they remember so that it can be connected to their daily lives. Which results in children becoming theoretically smart but children are very difficult in implementing their learning outcomes.

To be able to apply early childhood learning outcomes, a teacher or companion is needed who can develop learning strategies through electronic media, one of which is through the application of games to recognize image

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objects so that children can learn while playing which is expected to improve children's ability to recognize objects and be able to apply them in everyday life.

and be able to apply it in everyday life. The learning atmosphere is directed in such a way that students can develop their potential through more applicable learning activities. Learning for early childhood is expected to do more experimental activities, social play such as playing games and other stimulative activities.

The role and figure of the teacher or companion is very decisive in the learning process activities because the teacher is the main motivator in conveying knowledge or information to early childhood to gain experience and self-enrichment. To be able to provide enrichment to early childhood, teachers must have the right strategy so that learning in the classroom achieves the expected results, learning media used by teachers as a learning resource is the main key to the success of early childhood learning as a learner. Media applies to various activities or endeavors, such as media in the delivery of messages, magnetic or heat-conducting media in engineering. Media is used in the field of education so that the term becomes educational media [4]. Media is a very useful tool for students and educators in the learning and teaching process. [5]. Teaching media are teaching aids, which support the use of teaching methods used by teachers. [6]. Learning media is anything that can be used to convey messages or information in the teaching and learning process so that it can stimulate students' attention and interest in learning. [7]. Currently, the role of teachers who master information technology (IT) media in enriching learning materials to improve early childhood learning abilities is needed in early childhood education units. Teachers are expected to be able to provide concrete and real examples and be able to answer every question asked so that children have confidence and get the right and adequate information. Therefore, teachers are now required to be able to use the right strategies and methods in every learning (play) activity organized according to the age, growth, needs and interests of children's learning.

## II. RESEARCH METHODOLOGY

The research method used in this study is action research with a collaborative approach. Researchers chose this method with the aim that researchers can work together with teachers as the main actors in taking action to produce changes and stimulate early childhood development. The model used by researchers is the Interaction Spiral Action Research model. [8]. as shown in Figure 1. below:

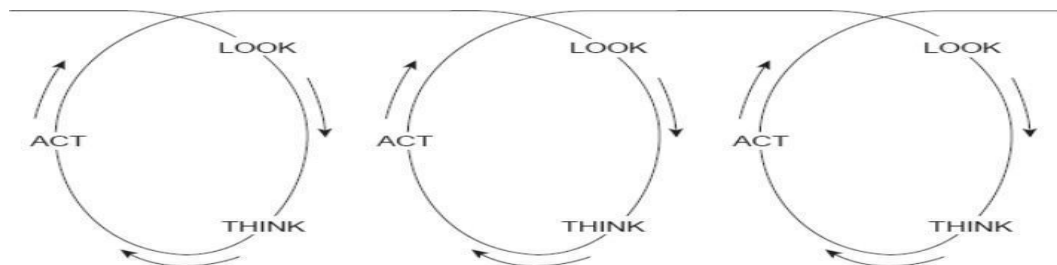


Figure 1. Interaction spiral Action Research (Stringer, E.T, 2007:8)

Figure 1. above shows the framework of thinking and activities or actions carried out which include 3 main aspects, namely Seeing, Thinking, and doing.. [ 8].

- 1) Look (*Melihat*) which is an activity to understand the problem through collecting data and describing the situation.
- 2) Think (*Berpikir*) is the activity of analyzing what happened and interpreting how and why it happened.
- 3) Act (*Berbuat*) is to plan the solution, implement and evaluate it.

The above activities can be carried out repeatedly, meaning that the results of program implementation (Act) can be used as a reference in further planning (Look).

## 2.1 . Analysis and Design

### 2.1.1. Problem Analysis

Problem Analysis is an analysis that aims to evaluate problems, opportunities, obstacles and expected needs so that improvements can be proposed. The problem found when researchers conducted research was that there were no teachers who used Information Technology (IT) tools in the form of applications that could support and help children in learning.

### 2.1.2. Definition of User Requirements

Based on the analysis of the problem, it can be concluded that guessing games can improve children's ability to recognize objects around them..

### 2.1.3. System Design

At this stage researchers explain the system that will be implemented through Activity Diagrams, Use Case Diagrams and Interface Design of the proposed system.

#### 2.1.3.1. Activity Diagram

The activity diagram begins with the admin managing game data in the form of question data, image data. As shown in Figure 2. Activity Diagram below:

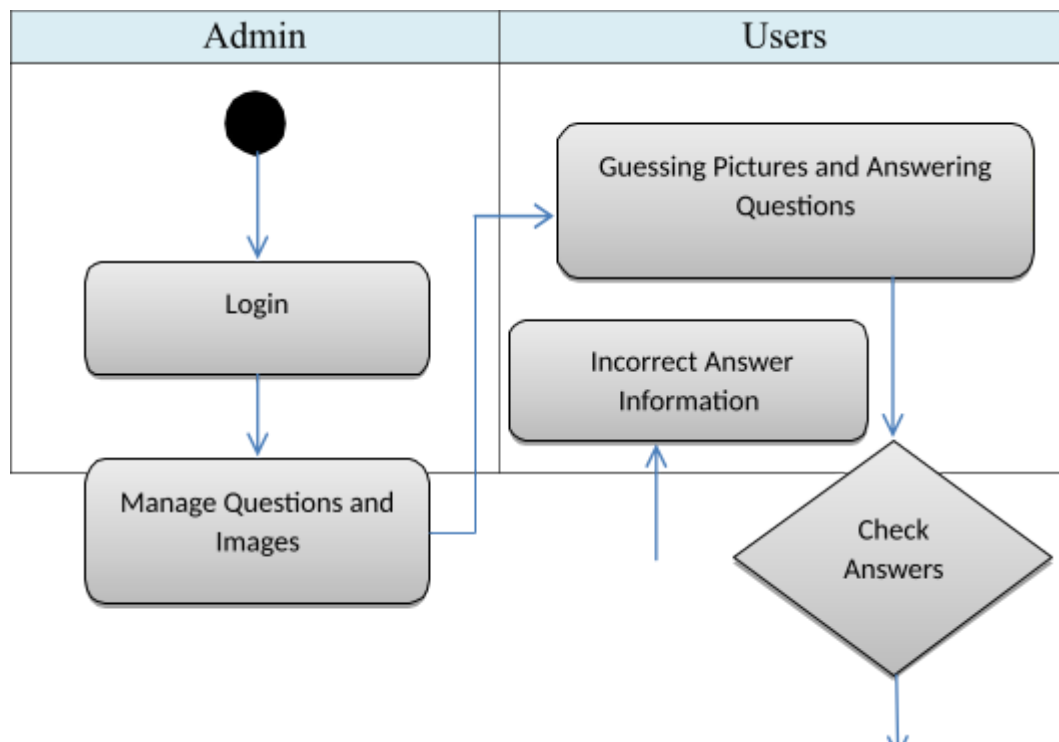


Figure 2. Activity Diagram

#### 2.1.3.2. Use Case Diagram

2.1.3.3. Use Case Diagram is a description or representation of the interactions that occur between admin and system users. The admin's job is to manage the Picture Guessing Game Data which is managed through the admin page. Before managing data, the admin is required to log into the system first. While system users in this case teachers and students can enter the system and use all its functions without having to log into the system. The system will provide questions based on the images displayed to system users. While system users in this case teachers and students can enter the system and use all its functions

without having to log into the system. The system will provide questions based on the images displayed to the user and the system can provide information to the user if the answer chosen is wrong or correct and provide a score for the answer given by the user. The Use Case Diagram as shown in Figure 3. Use Case Diagram below:

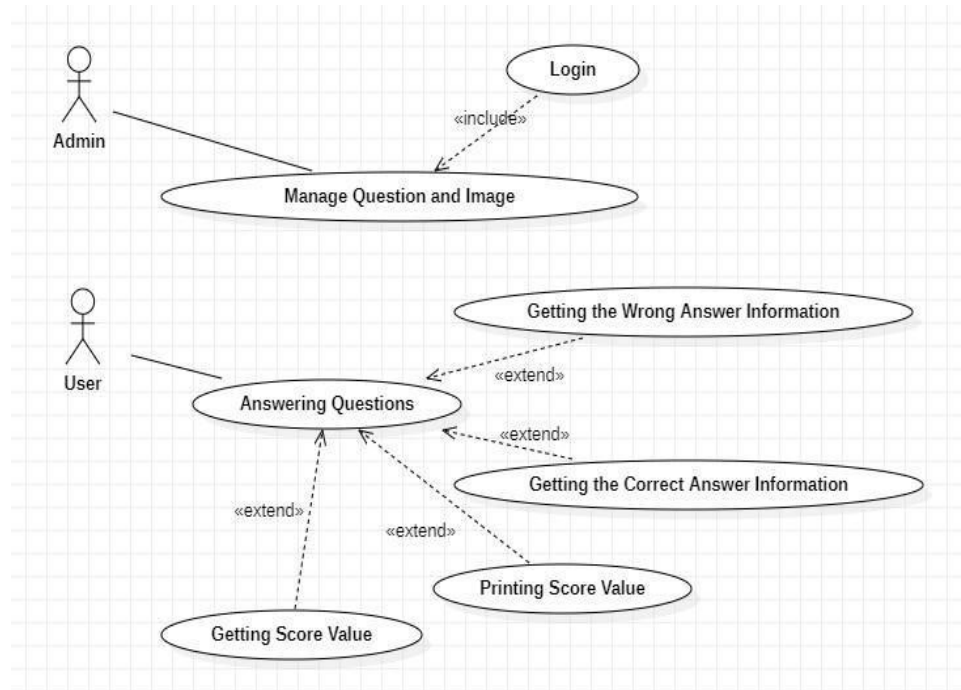


Figure 3. Use Case Diagram

#### 2.1.3.4. Interface Design

Interface design is a description of how a system display is formed. This picture guessing game is designed with a user friendly display, so that it can make it easier for system users to

play it. In this game there are several design models, among others:

2.1.3.4.1. The Login Page

2.1.3.4.2. On the Login Page, an

Admin must enter a Username and Password then click the Login Button provided. The application will check the Username and Password entered. The Login Page as shown in Figure 4. The Login Page below:



Figure 4. The Login Page

2.1.3.4.3. Manage Data Page

On the Manage Data page, the Admin is tasked with uploading images and creating questions according to the images, then clicking the Save button. The Manage Data page as shown in Figure 5.



Figure 5. Manage Data Page

## 2.2. Summary of Results and Evaluation

### a) Login Page View

On the Login page as shown in Figure 5. Admins are required to enter a username and password in order to enter the system. The system will match the username and password stored in the database, if the username and password match then the admin can enter the system if the username and password are wrong then the admin will not successfully enter the system.

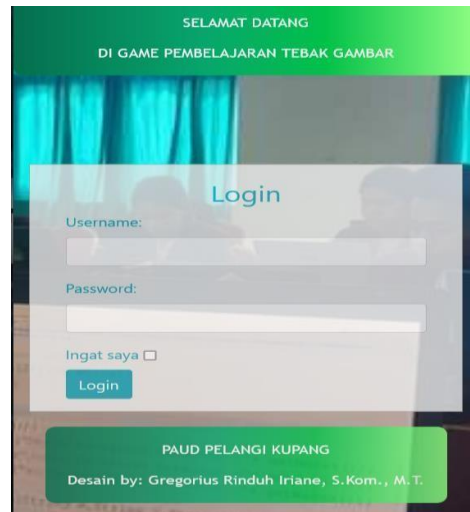


Figure 5. Login Page View

**b) Data management page view**

On the manage data page as shown in Figure 6. This page aims to allow the admin to manage data both questions and images.

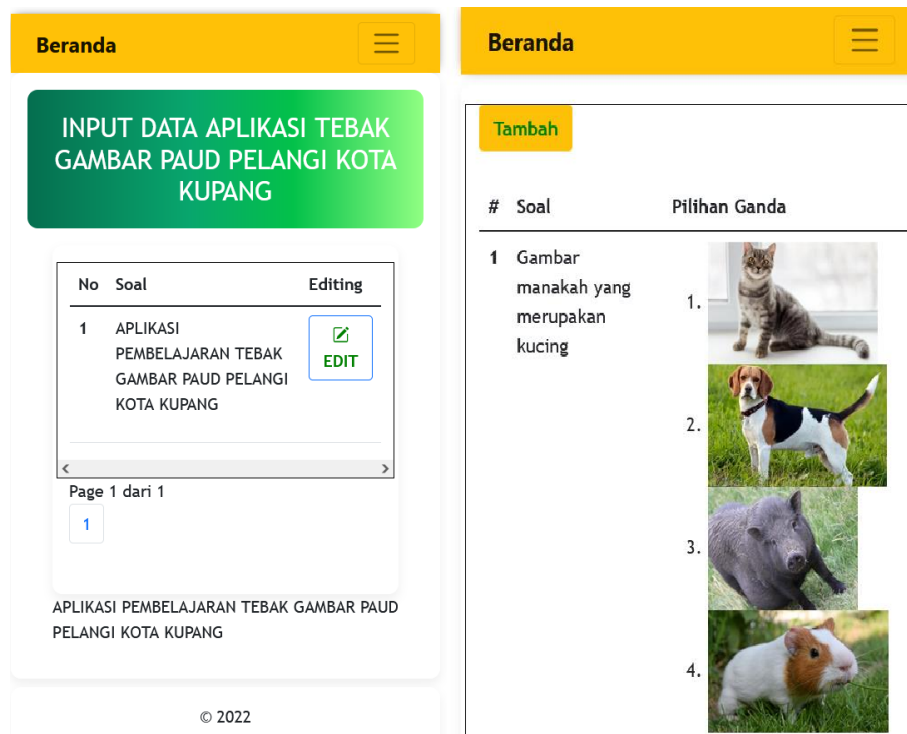


Figure 6. Data management page view



c) **Homepage**

On the user's initial home page as shown in Figure 7. On this page there are two buttons, namely the Start button which functions to start playing the game and the settings button which functions so that users can set program functions such as using music or sound when an answer is selected.



Figure 7. Homepage

d) **Question page about Image Objects**

This page includes questions and images as well as a save button to save the user's answers to the database. as shown in Figure 8. below:

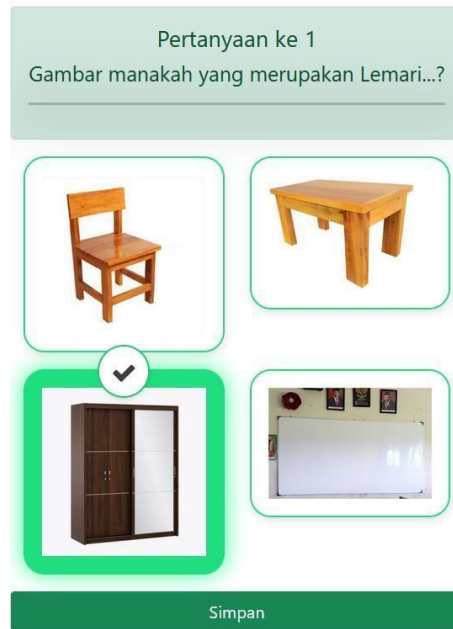


Figure 8. Question page about Image Objects

e) **Correct Answer Information View**

In Figure 9. below is the information that is displayed to the user if the user correctly selects the image according to the question given.

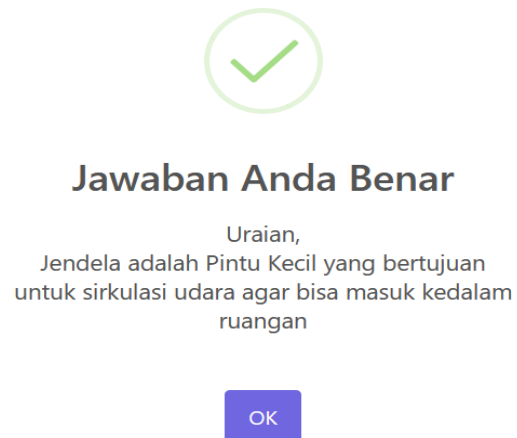


Figure 9. Correct Answer Information View

**f) Incorrect Answer Information View**

In Figure 10. the following is the information that is displayed to the user if the user chooses the wrong image according to the question given.



Figure 10. Incorrect Answer Information View

**g) Score Information Page**

This page will provide information to the user about the score obtained in answering questions based on the image displayed, if the answer is correct the user will get a score of 10 and if the answer is wrong the user will get a score of 0. Score Information page as shown in Figure 11.

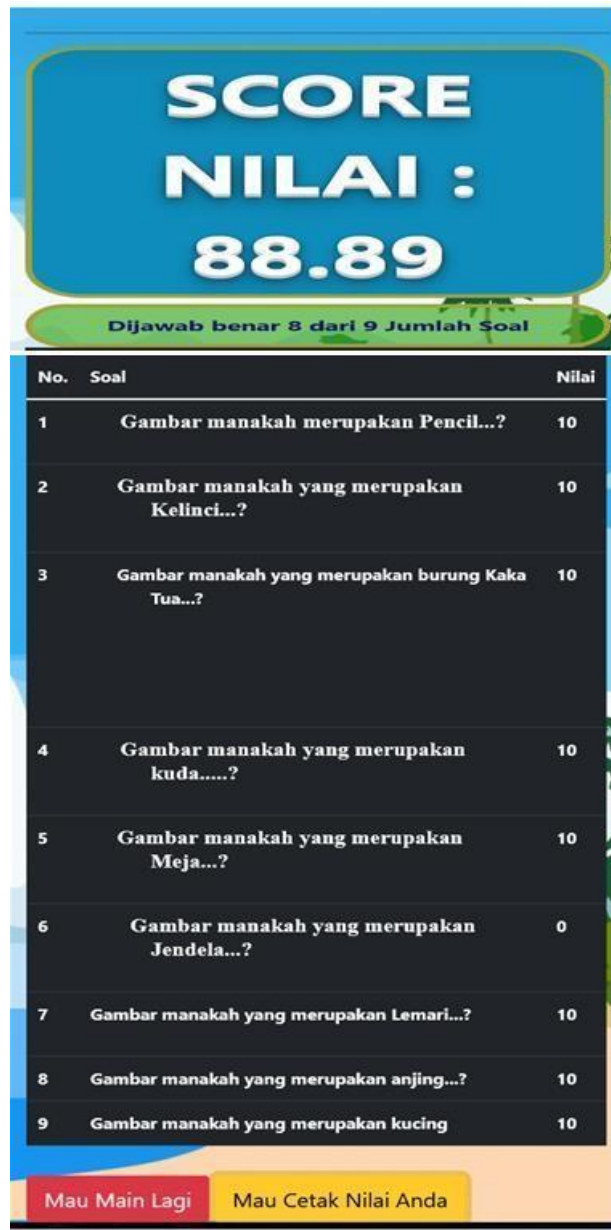


Figure 11. Score Information Page

## h) Scores Print Page

On the Print Score page, as shown in Figure 12, this page aims to allow users to print the score obtained as a report or improvement information for the next game.

The image shows a 'Print Score' page. On the left, a score report is displayed with a large yellow box containing 'SCORE NILAI : 88.89'. Below this, a table lists 9 questions and their scores. The right side of the page is a print configuration panel titled 'Cetak' with '1 lembar kertas'. It includes a printer selection dropdown (EPSON L3210 Series), a copy count dropdown (1), orientation buttons (Tegak and Mendatar), a page range dropdown (Semua), and a color mode dropdown (Warna). At the bottom, there are 'Cetak' and 'Batal' buttons.

No	Soal	Nilai
1	Contoh masalah yang merupakan Tampil...?	10
2	Contoh masalah yang merupakan Rata...?	10
3	Contoh masalah yang merupakan Berat...?	10
4	Contoh masalah yang merupakan Indah...?	10
5	Contoh masalah yang merupakan Halus...?	10
6	Contoh masalah yang merupakan Berakal...?	10
7	Contoh masalah yang merupakan Lemah...?	10
8	Contoh masalah yang merupakan Ringan...?	10
9	Contoh masalah yang merupakan Berat...?	10

Figure 12. Scores Print Page

### III. CONCLUSION

From the results of observations and trials of the guess the picture game application in early childhood at PUAD Pelangi Kota Kupang, it shows that students become easier to learn information about objects that are around them.

### REFERENCES

- [1] Nisrokha, Pemanfaatan Web Dalam Modelproblem Based Learning, Jurnal Madaniyah, Volume 8 Nomor 1 Edisi Januari 2018, ISSN (printed) : 2086- 3462,ISSN (online) : 2548-6993
- [2] Wina Sanjaya, Strategi Pembelajaran Berorientasi Standar Proses Pendidikan, cet. 9 (Jakarta: Kencana, 2012), h. 1.
- [3] Siswanto, Zaelansyah, Eli Susanti, Jeni Fransiska, Metode Pembelajaran Anak Usia Dini Dalam Generasi Unggul Dan Sukses. Jurnal Paramurobi, Vol. 2, No. 2, Juli-Desember 2019.
- [4] Sanjaya, Wina, Strategi Pembelajaran Berorientasi Standar Proses Pendidikan (Jakarta: Prenada Media, 2011), 163.
- [5] Indriana Dina, Ragam Alat Bantu Media Pengajaran (Jakarta: PT.Diva Press. 2011), 15.
- [6] Nasution,S. Berbagai Pendekatan dalam Proses Belajar-Mengajar (Jakarta: Bina Aksara 1990), 7.
- [7] Arsyad, Azhar, Media Pembelajaran (Jakarta: PT.Rajagrafindo Persada), 10.
- [8] Stringer E.T, Action Research (New York: Sage Publications, 2007), 8.