The influence of animal name introduction learning application in English for Kindergarten on Android phones

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Abstract. Preschool or Kindergarten education is a formal of education for children between the ages of 4-6 years. The main task as a preschool educational institution is to prepare children by introducing knowledge, attitudes, behavior, skills and intellectuals so they can adapt to real learning activities in elementary schools. At present most of the learning in schools is still used teaching methods using media guidebooks, as well as learning carried out education of preschools. In preschool children learning there are basic material with animal themes such as the introduction of the names of animals in the vicinity in accordance with basic competencies to know the types and names of animals. Whereas at present most of the learning in schools is still used teaching methods using guidebook media. Adobe flash or is a multifunctional software. Apart from its initial function, which made it easy to create web animations, it turned out that Flash was developing so rapidly that it could be utilized as an extraordinary multi-media software. Adobe Flash be utilized as an effective game creation program. It is hoped that this research children’s educational game can be useful for children in Indonesia of preschool age.

1. Introduction
Simulation-based educational games are designed to simulate existing problems in order to obtain the essence or knowledge that can be used to solve these problems. Simulation games with educational objectives can be used as one of the educational media that has a learning by doing learning pattern. Based on the patterns held by the game, players are required to learn so that they can solve existing problems. Educational game is one part of a serious game.

The rapid development of technology is currently influencing the learning process in elementary schools and also influencing the learning material as well as the delivery of material in the process of teaching and learning activities. And in this stage students will more easily remember a form or writing that has attractive color features and a communicative and pleasing shape.

The rapid development of technology is currently influencing the learning process in preschool and also influencing the learning material and the delivery of material in the process of teaching and learning activities. And in this stage students will more easily remember a form or writing that has attractive color features and a communicative and pleasing shape.

After observing at the preschool, and based on the results of discussions with the class teacher, it can be concluded if students have difficulty in naming animals in English. This can be seen when mentioning animal names in English, many errors occur, this can be caused by students not knowing English well and students also do not know the names of animals contained in the material. When this happens at the basic learning stage, students will have difficulty following the following learning materials.
With this educational game learning media will make it easier for students to remember the material presented by the teacher because learning can be done repeatedly and presented in a fun display. In this educational game to recognize animal names in English, students will play with three methods, namely: recognize animals, recognize animal names, animal sounds and arrange letters into animal names by sorting letters to form words and remembering animal names in English.

It is expected that children's educational games made can be useful for children in preschool age.

1.1. Identification of problems

- Preschool students don't recognize the alphabet letters well.
- Preschool students have difficulty knowing the shape and name of animals in English.
- Preschool students do not yet know the names of animals in English.
- The lack of applications that can build good character for children in learning and forming basic ethics from an early age.

1.2. Formulation of the problem

- How is the development of animal theme education games in English in preschool students as a learning medium for introducing animal names to preschool students well?
- How is the development of this animal theme education game as a learning medium to help preschool students who have difficulty recognizing animals and animal names in English?
- How is the development of this animal theme education game as a learning medium for introducing animal names in English to preschool students?

2. Basic theory

2.1. Understanding multimedia

The word multimedia comes from multi words (Latin) which means many or various kinds, and the word media (Latin) which means something that is used to convey or carry something. Multimedia can be interpreted as the use of several different media to combine and convey information in the form of text, audio, graphics, animation and video [1].

2.2. Characteristics of media in multimedia

Interactive Multimedia contains several components namely, text, audio, image, animation, simulation, video. The components contained in interactive multimedia have advantages and disadvantages.

2.2.1. Text

- Text can be used to convey condensed information.
- Text can be used for complex such as mathematical formulas or an explanation of a long process.
- Technology for displaying text on a computer screen is relatively simpler than technology for displaying other media. Consequently this media is also cheaper when compared to other media.
- It is suitable as input media feedback.

2.2.2. Audio

- It is suitable when used as a medium to provide motivation.
- For certain materials the sound is very suitable because it approaches the original state of the material (for example lessons on recognizing animal sounds).
- Helping learners focus on the material being studied because learners simply listen without doing other activities that require concentration.

2.2.3. Image

- Easier to identify objects.
• It's easier to classify objects.
• Able to show the spatial relationship of an object.
• Help explain abstract concepts into reality.

2.2.4. Animation
• Showing objects with ideas.
• Explain difficult concepts.
• Explain abstract concepts into.
• How clearly a step

2.2.5. Video
• Describe the real state of a process, phenomenon or event.
• As an integrated part with other media such as text or images, video can enrich the exposure.
• Users can replay on certain parts to see a more focused picture.
• It is suitable for teaching material in the realm of behavior or psychomotor.
• The combination of video and audio can be more effective and faster in conveying messages than text media.
• Show clearly a procedural step (e.g. how to paint an equilateral triangle with the term aid).

2.3. Use of multimedia in learning
These models can be used in classroom learning or self-study. Can also be used for learning at home and at school. Learning sessions can be adapted to the stages of student acceptance and understanding. Student achievement and success will be tested. If the student does not reach a satisfactory stage, a recovery session will also be held. Student achievement records will be stored so that student achievement can be monitored. The concept of learning itself can be implemented if the information is interesting and motivates students to continue learning. This can be achieved if the material or information is well designed using multimedia. Interactive teaching and learning atmosphere will promote communication of various things (student-teacher, student-student, computer-student) Combined various media that make full use of the sense of sight and hearing able to attract interest in learning [2].

2.4. Definition of game
Game means a game or match, or can be interpreted as a structured activity that is usually done for fun. Various games, including: Action, Action Adventure, Simulation, Construction and Management, Role Playing Games (RPG), Strategy, Racing, Sports, Puzzle and Word play.

2.5. Definition of education
According to Sugihartono [3] education comes from the word students, or educate which means to maintain and shape training.

Whereas in the large Indonesian dictionary (1991) education is defined as the process of changing the attitudes and behavior of a person or group of people in an effort to mature humans through teaching and training efforts.

2.6. Definition of educational games
Educational games are games that are designed or created to stimulate thinking including increasing concentration and solving problems [4].

Based on the description above, it can be concluded that educational games are one of the forms of games that can be useful to support the teaching-learning process in a more fun and more creative way, and are used to provide teaching or increase the user's knowledge through an interesting media.
2.7. Android system
Android is an operating system for cellular phones based on Linux. Android provides a platform that is open source for developers to create an application. Initially, Google Inc. Acquired Android Inc. which develops software for mobile phones located in Palo Alto, California, United States. Then to develop Android, the Open Handset Alliance was formed, a consortium of 34 hardware, software and telecommunications companies, including Google, HTC, Intel, Motorola, Qualcomm, T-Mobile, and Nvidia. The first phone to use the Android system is the HTC Dream, which was released on October 22, 2008 [5].

2.7.1. Characteristics of the Android OS
- Open Source
- All applications are the same
- Solve obstacles in the application
- Fast and easy application development

2.8. Action Script 3
Action Script is a programming language that works in Adobe Flash applications. This Action Script is used to create animations or interactions. The existence of this Action Script is the advantage of Adobe Flash compared to other animation software.

This Action Script is case sensitive, meaning that writing capital letters (uppercase) and lowercase letters are considered different. Errors in writing uppercase or lowercase letters will result in errors in the program.

Action scripts can be used to create action-oriented instructions (execute commands) and logic-oriented instructions (problem analysis before carrying out commands).

2.9. Adobe AIR
Adobe AIR is one component of the Adobe Flash Platform. This makes the application made with Adobe Flash Platform can run on all OS platforms.

2.10. Adobe Flash CS6
Adobe Flash is an animation program that is produced by a software company from the United States namely Adobe System Incorporated. This program is very reliable and popular among animators, various facilities and the latest features have been provided to facilitate the processing of its users. If in the previous version, the facilities owned were so good for creating animations, you can imagine the facilities now would certainly be able to pamper its users to be more creative in creating awesome animations [6].

2.11. Animal themes for Preschoolers
Childhood is a period in which children experience very rapid development, they grow, develop, and be creative, therefore at that age the experts say that children experience a golden period because at this time the child experiences very rapid growth and development rapidly [2].

The development effort must be in accordance with the stages of development and characteristics for each child, one of which is the basis of the initial learning process of environmental recognition including material with animal themes such as the introduction of the names of animals in the vicinity in accordance with the basic competence to know the types and names of animals. The teacher as a facilitator in delivering learning material is expected to be able to use appropriate and enjoyable learning media so that learning outcomes can be maximized, in this case is to use media that is suitable for preschoolers.

2.12. English for children
The purpose of introducing English vocabulary includes:
• Provides the ability to recognize English vocabulary in early childhood through image animation media [5].
• Development of flexible thinking skills with the appearance of animated images.
• Develop the ability of rational or original thinking skills by looking directly at the display of animated images.
• Development of the ability to detail or elaborate by watching animated displays in the introduction of English vocabulary.

3. Analysis and design

3.1. System analysis
At this stage the researcher analyzes the learning process in preschool students, from the analysis conducted by researchers identifying problems that occur in preschool students, namely as follows, Students do not know animals in English well, Students have difficulty in compiling words to form an animal name, Students have not know the names of animals and learning that can be carried anywhere and repeated at any time.

3.2. Research procedure
The research used is Research and Development or research and development methods, this method is used to produce certain products and test the effectiveness of these products [1].

3.3. Design
The concept stage is the stage where the author determines the purpose of making the application, including user identification, type of application (information, learning media, entertainment, training and others).
At this stage of the concept, what the authors do is:
• Determine the purpose of the application, namely as a guide to the form of a mobile application that makes it easy for teachers and students and the general public to learn and understand animals.
• Description of the application, namely the title Application recognizes animals, the form of application in the form of a mobile application with a preschool age audience and this application can be run on mobile phones that support flash and Adobe AIR applications.

• In the process of designing educational game designs, in this case the display design needs design sketches that are used to describe media creation. The sketch was formed in a storyboard

![Figure 2. Animal education game story board design & design menu structure.](image)

Based on the storyboard picture above can be translated into several mindmapping as follows:

Opening Title Page, Intro Display, Main Menu, Animal Recognition Menu, Animal Sub Menu, Animal Games, Help, Creator

3.4. Designing the display

3.4.1. Opening title page. On this page the screen will display an animation of the game title, logo. On this page there is also an entry button to enter the game animal names in English.

![Figure 3. Design opening display & intro.](image)

• Components in the form of text that reads "Aplikasi Pengenalan Nama Hewan dalam Bahasa Inggris" with the animation

• Format Creator Logo * .jpg with the name Logo.jpg, has a resolution of 121x79

• Bright Purple Background with 960x540 resolution

• The introductory page is the page after pressing the "enter" button on the title page. This page contains an introduction to learning media before entering the media for more. There is a game menu to enter the educational game, an animal recognition menu to view the contents of the animal image and sound recognition material, and a maker profile menu to see the identity of the maker.
Figure 4. Competency standard menu design & animal game menu design.

- On this page the selected menu is the competency standard, the contents will appear from the introduction of animals and there is a choice of the maker profile menu, if the maker profile menu selected will appear data
- On this page the menu that is displayed when entering the animal education game is the start menu to enter, the menu about playing mains, and the exit menu to exit the educational game

Figure 5. Animal type menu design & Animal Game Design.

- On this page there are four menus for choosing what type of animal to play. There are four-legged animals, poultry
- On this page there are pictures of animals that can be played

4. Results and discussion

4.1. Producing system
This stage is the stage of building and developing applications in accordance with the manuscripts that have been made. This section is an activity that includes making graphic design that supports all dialogs, creating animations that fit the theme, making text as message delivery, importing finished files, all of which will be combined into Flash CS6 with action script3 as the final software.
4.2. **Object creation**
Making objects by using Adobe Photoshop CS6 and then to the process in Flash CS6.

![Figure 6. Display work pages in Flash.](image)

4.3. **Create animations in Flash with Adobe AIR**
- First we open the Adobe Flash Professional CS6 application
- Next we create a file. Using ActionScript 3.0

![Figure 7. Page views creating a new file in Flash CS6.](image)

- Then open the File-Publish settings menu

![Figure 8. Display publish settings in Flash CS6.](image)
• Select Publish Settings
• Then we select the Flash tab.
• In the Player option, we change the default Flash Player 10 to Adobe AIR 2 as shown.
• After that try the test. Then there will be differences in our Player. Look at the picture below.
• Next we will publish the application that we made into an Adobe AIR application.
• We go back to Publish Settings, we try to Publish, it certainly can't. That's because we haven't created a certificate that allows Adobe Flash CS6 to publish Adobe AIR.
• The solution is to make the certificate yourself.

![Image of Flash Player settings]

**Figure 9.** Display Android AIR settings on Flash CS6.

• Then we fill out the form completely. An example is in the illustration below.
• If it is successful there will be a dialogue like the one below.
• Next we try to publish. Don't forget to uncheck Timestamp. The point is to make our application work for an unlimited amount of time.

![Image of certificate settings]

**Figure 10.** Display AIR Android advanced settings on Flash CS6.

• Don't forget to fill in the password that we created earlier before we publish.
4.4. Creating animated images

![Image](image1.png)

**Figure 11.** Character work page display in Flash CS6 & Timeline display in Flash CS6.

4.5. Insert the action script

![Image](image2.png)

**Figure 12.** Display action script editor in Flash CS6.

4.6. Testing on Adobe Flash

![Image](image3.png)

**Figure 13.** Display of Main Application Tests in Flash CS6 & Publish Views in the form of .apk Animal introduction in Flash CS6.

![Image](image4.png)

**Figure 14.** Display of the main file & display of the installation process on Android.
Display applications after .apk is installed on a mobile device.

![Figure 15. Intro Form & Main Menu Form on Android.](image)

![Figure 16. Forms Home & Forms Know Forest Animals in Android.](image)

![Figure 17. Animal Game Form & Form Maker on Android.](image)

4.7. **System testing discussion**  
Black-box Testing is carried out to find out whether the program is made according to functional requirements. In this trial, the application will be tested in terms of. The way to do that is by running an application that has been made so that it can see the shortcomings of this program. Some Points Researched.

- Does the appearance of this application look attractive?
- Is the game built easy to use?
- Does the application built provide the information needed?
- Is the application built easy to learn?

5. **Conclusions**  
Based on the evaluation results of making “Applications About Animals on the Android Operating System" some conclusions can be drawn as follows:

- With this Android-based animal recognition application, users can learn to surround animals around in an easier and more practical way.
- This application helps add insight to pre-school children who want to maintain by looking at general information (at a glance), characteristics, habitat, and danger status of various animals.
- This application also has a quiz feature about animals as a means of honing abilities and as a means to test children's memory.

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