

Guesspic Game as an Educational Game Media Knowing Living and Inanimate Objects for Children

**Albertus Prana Setiawan¹, Bernardinus Harnadi²,
Erdhi Widyarto Nugroho³**

^{1,2,3}Department of Information System, Soegijapranata Catholic University
^{1,2,3}Jl. Pawiyatan Luhur Sel. IV No.1, Bendan Duwur, Kota Semarang, Jawa Tengah 50234
¹pranasaja1@gmail.com
²berdi@unika.ac.id
³erdhi@unika.ac.id

Abstract— Learning to recognize understanding of the home environment, school, the benefits of helping parents and teachers in the way of educational media games. Where children in the current era love games as hobbies one of them is Guesspic games that can help children to recognize living objects and inanimate objects by coloring objects and with sounds and images - interesting animated images make children fun to play. Educational game is very interesting to develop.

There are several advantages of educational games compared to conventional education methods. One of the main advantages of the educational game is the visualization of real problems. Massachusetts Institute of Technology (MIT) succeeded in proving that games are very useful for improving the logic and understanding of players about a problem through a game project called Scratch. The application of this game is designed using software or applications, namely unity. Unity is a game engine that can help make games on mobile (Smartphone) in the form of 2D games.

The advantages of guesspic games can help children to recognize living objects and inanimate objects by coloring objects and with sounds and pictures - interesting animated images make children fun to play. Testing of the game to 40 users said it was easy to play, felt useful, and the child had facilities.

Keywords— Blood, blood disease, expert systems.

I. INTRODUCTION

Basically the game is a medium of entertainment facilities for children and adults at this time the development of games is very rapid, not only that, there are many types of games on the market. But today's children rarely play educational and educational games. Where children nowadays like games as a hobby. Education is very much needed for the growth and development of the child, because the child has a high sense of curiosity. The role of parents is needed in order to achieve the maximum growth and development of children, various ways are done by parents to educate children.

Therefore the author designed to make coloring games and recognize living and inanimate objects as learning media, build the creativity of the child through this game, the child recognizes various colors and shapes of living and inanimate objects around the environment by coloring objects that have been made educational games.

The purpose of this game is to make mobile games as alternative media to recognize living and inanimate objects by coloring objects in the way of Game media [1].

Saying that by implementing educational games, it is hoped that it can help the child in learning and can add creative thinking patterns and add brilliant ideas [2].

Learning to color pictures as an alternative action that leads to problem solving, namely learning coloring is a very fun activity for children, through learning children can try colors they know [3].

That with us, we must be able to provide the best facilities and means in developing children's potential, by making it easy for children to learn various things in their environment. The introduction of the surrounding environment is a pleasant experience to develop the intelligence of the child.

When doing drawing activities, children are introduced to shapes and colors. Drawing activities will be more interesting and fun if presented through interesting media as well. One of the media that can answer these demands is a multimedia application. Currently, there are still few applications that can be used for drawing, especially coloring pictures. Based on this, the authors are interested in creating interactive learning media applications to color digital pictures for the child [4].

This game application is designed using Unity software. Unity is a game engine that can help create games on mobile (Smartphones) in the form of 2D games. The advantages of guesspic games can help children recognize living and inanimate objects.

From the background discussion above, *the guesspic game as an educational game media to recognize living and inanimate objects in children*, this paper hopes that the Guesspic game is useful for learning the child.

II. LITERATUR REVIEW

A. Instructional Media

Based on previous research there have been those who explained that the learning model in the form of games or games can increase the attractiveness of children in learning and improve children's ability to understand learning material. This game application develops with previous applications, namely Mutiplatform Development of object name recognition in 3 languages for early childhood using unity, where construct is an integrated game engine software to make android-based games that support various platforms such as PC, iPhone, Mac,

Android , IOS and browser (Sudarmillah 2013). The purpose of this study is to create a character design model and 2D objects that are used to provide learning through colored images such as the introduction of vegetable and animal fruit names will be adjusted to the learning indicators for early childhood with a display that can attract children's interest in playing and learning . In the introduction of the game will be done in kindergartens where there are early childhood educators who are able to recognize the child's response to learning. Furthermore, the game is applied to various media technologies [5]

B. Game Education

Educational game is very interesting to develop. There are several advantages of educational games compared to conventional education methods. One of the main advantages of the educational game is the visualization of real problems. Massachusetts Institute of Technology (MIT) succeeded in proving that games are very useful for improving the logic and understanding of players about a problem through a game project called Scratch. Based on the results of previous studies, there is no doubt that educational games can support the educational process [1,2]. Educational games excel in several aspects when compared to conventional learning methods. One significant advantage is the existence of animation that can improve memory so that children can store subject matter for a longer time compared to conventional teaching methods Simulation-based educational games are designed to simulate existing problems so that essences or knowledge can be used to solve these problems. Simulation games with the aim of this education can be used as one of the educational media that has a learning by doing learning pattern. Based on the patterns possessed by the game, players are required to learn so that they can solve existing problems. The status of games, instructions, and tools provided by the game will actively guide players to dig

up information so that it can enrich their knowledge and strategies while playing. [6]

C. Understanding the Environment as a Learning Resource

Knowledge is very important for the child to interact with other people or people also interact with a number of other living things and inanimate objects. These living things include various plants and animals, while inanimate objects include air, water, and soil. Environment as a source of learning can be interpreted as the unity of space with all objects and the state of living things, (including human beings and their behavior and other living things), so as to enable early childhood to learn about information, people, materials and tools. The environment consists of elements of living things, objects

8 Utilizing the Surrounding Environment as a Learning Resource for the Child, along with Environmental Elements as Learning Resources:

1. Elements of living things
 - a. Humans: Amount, type, body part and how to do something (how it works and functions) and so on
 - b. Animals: Insects, poultry, livestock, wild animals (of so on)
 - c. Plants: types, parts, and benefits of trees and plants, and so on.
 2. Elements of dead objects
 - a. Rocks: shape / texture, number, size and various types of rocks and their uses.
 - b. Land: color, type, and benefits
 - c. Water: Nature, type and benefits.
 - d. Air: the nature and how to recognize it
- Utilizing the environment around us by bringing early childhood to observe the environment will increase balance in learning activities. This means that learning does not only occur in classrooms and in homes, but also outside the classroom or outside the home. [7]

D. Understanding Unity 3D Game Engine

Unity is an application used to develop multi- platform games that are designed to be easy to use. The editor at

Unity is made with a simple user interface, Unity is made with thousands of hours to make it number one in the top ranking order for game editors. Graphics on unity are made with high-level graphics for OpenGL and DirectX. Unity supports all file formats, especially common formats like all formats of art applications. Unity is compatible with the 64-bit version and can operate on Mac OS x and Windows and can produce games for Mac, Windows, Wii, iPhone, iPad and Android. Unity is a free application with the availability of assets at the unity store. There is a paid version in using unty, including asset store unity providing free and paid assets. [8]

E. Android

Definition of android according to the Indonesian wikipedia, Android (/ˈæn.drɔɪd/; AN-droyd) is a Linux-based operating system designed for touch screen cellular devices such as smartphones and tablet computers. The Android user interface is based on direct manipulation, using touch input that is similar to actions in the real world, such as swiping, tapping, pinching, and reversing the pinch to manipulate objects on the screen. Android is an open source operating system, and Google released the code on under the Apache License. Open source code and licensing licenses on Android allow software to be freely modified and distributed by device makers, wireless operators, and application developers. In addition, Android has a large number of application developer communities (apps) that extend the functionality of the device, generally written in a customized version of the Java programming language.[9]

F. Jenis- jenis genre game

1. Action: A game that requires players who have reflex speed, accuracy, and timeliness to face an obstacle.
- 2) Fighting: A fighting game usually has the character of one on one combat

- between two characters, where one of the characters is controlled by a computer.
2. Fighting: A fighting game usually has the character of one-on-one combat between two characters, where one of the characters is controlled by a computer
 3. Racing: A video game that demands the skill of a player to drive in a racing-racing competition. This game is popular with the types of games that have the concept of using a car or motorcycle
 4. Shooter: Sub-genre of action games, although many players assume that this variety is a stand-alone variety.
 5. Strategy: this type of game play is like a simulation with clear objectives, so it requires the player's strategy and involves problems of strategy, tactics and logic.
 6. RPG (Role Playing Game): a game where the players play the role of imaginary characters and collaborate to knit a story together
 7. Adventure: Adventure game combines elements of component types between action games and adventure games, usually featuring long-term obstacles that must be overcome using tools or items as a tool to overcome obstacles, obstacles and obstacles.

III. RESEARCH METHODOLOGY

A. Place and Time of Research

Location and Time of Research The Study Site was conducted in Batur Sari Elementary School 5 Demak Central Java and Time Research was conducted in September – November 2018.

B. Method of Collecting Data

Research method is a way to collect data that will be used for the process of conducting a research. The research method used in the author is a qualitative descriptive method, namely by observing objects so that they can retrieve the data needed orally or in writing.

C. Data Source

In Guesspic research using Premier and Secondary Data Sources:

1. Source of data with Primary data so that data sources are obtained directly from respondents. In this study the primary data source is the results of questionnaires and observations of responses before and after playing the game.
2. Sources of data with Secondary data so that the source of the data obtained is concrete data originating from books, existing journals that explain the importance of knowledge about recognizing images and coloring.

D. Data Collection Technique

1. Literature Study / Literature
Library study is a technique of collecting concrete data and information, which comes from scientific books, journals, research reports and written or electronic sources.
2. Questionnaire / Questionnaire
Questionnaires or questionnaires are looking for information to collect data by asking questions to respondents. The distribution of questionnaires in this study was carried out before making the game and after making the game to find information on making games and the impact of the games that have been played

E. Game Development Method “Guesspic Game As Educational Game Media Knowing Life And Dead Objects For Children

In the development of the game "*Game Guesspic As Education Game Media Knowing Life Objects And Dead Objects For Children*" using the EgineUnity 2D game requires several steps as follows:

1. Making assets in the form of designs in the form of characters, layouts, and backgrounds.
2. Making assets in the form of sound on characters, and backsound games.
3. Do game development through Unity 2D.

F. Framework

In this study, the following framework can be formulated.

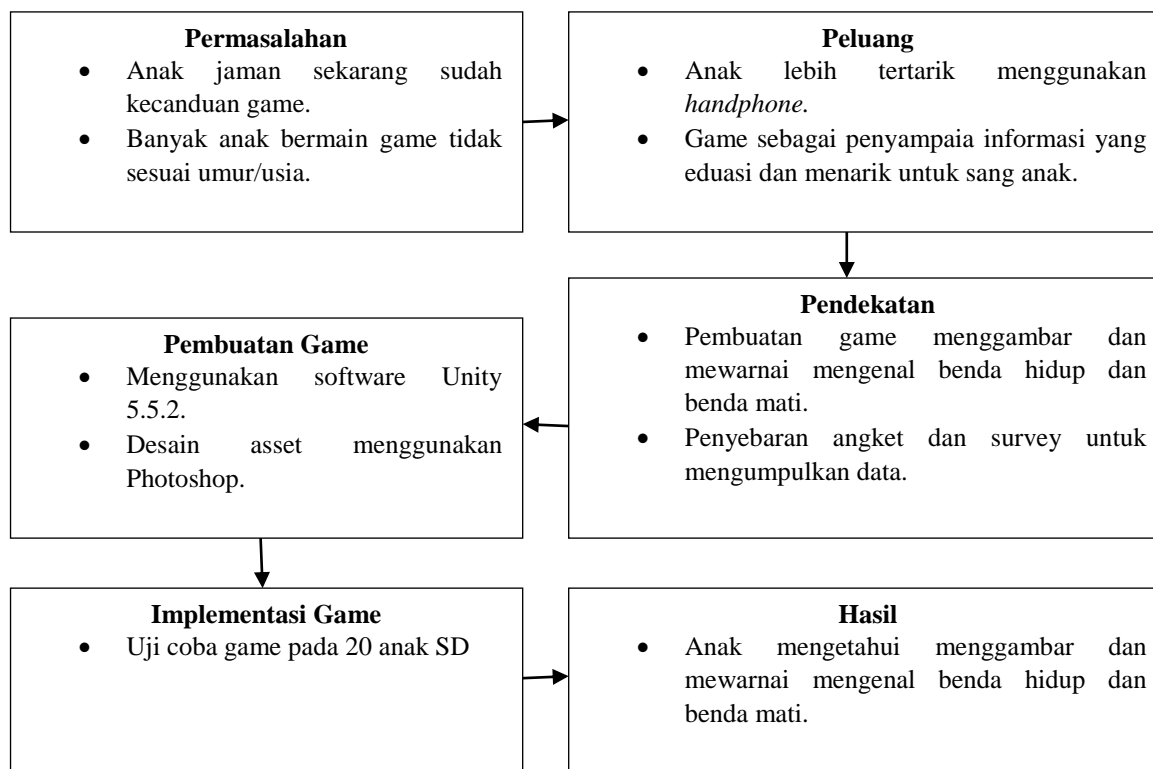


Figure 3.1. Framework

The problem faced in this research is how to use Unity 2D technology as one of the game engine media used by researchers to build educational games "Game Guesspic As Education Media Game Knows Life Objects And Dead Objects For Children" in utilizing an Android-based educational game.

IV. RESULTS AND DISCUSSION

A. Gameplay Guesspic

Guesspic is a learning game that recognizes living objects and inanimate objects by coloring objects that have been made this game applied in Android based. This game is made aiming to recognize living objects and inanimate objects by coloring to add creativity, insight into what knowledge of the shape of objects that exist around the environment with attractive graphics many various kinds of color variations so that the game is more educational when displayed. This game was created with Unity Version 5.5.2 software

with the size of the game after being an Android APK 32 MB more or less. This game is played on the minimum Android 4.1 Android OS Jelly Bean. In the game there are various different objects to be colored. the game flow starts with the Splash screen logo then goes into loading game, MainScene, Selection next Gameplay.

In this game giving learning coloring and knowing any objects that are around the environment when choosing on the available image will appear but not yet colored when it has colored the child imitating the image that has been colored after finishing coloring will go to the next image that will be on color it. this game is also available blank sheets for free drawing so that the child releases creativity in drawing and coloring. Here are the types of guesspic games.

Use sheets to draw freely as is appropriate for the imagination of the child's creativity to menggambar whatever is on his mind, this sheet is available stickers is

an object that is already available images of various shapes that have been living, just dropping the size of the object image and stay selected.

1. Paste The Image



Figure 4.1. Paste The Image

2. Coloring Animal



Figure 4.2. Coloring Animal

The choice of receiving animals adds to the knowledge of various kinds of animals ranging from land, air and water.

3. Coloring Vehicle



Figure 4.3. Coloring Vehicle

The choice of receiving animals adds knowledge about various types of advice starting from land, air and water.

4. Coloring Number



Figure 4.4. Coloring Number

5. Coloring Alphabet



Figure 4.5. Coloring Alphabet

B. Correction Text

Correlation Test Results in the research variables are presented in Table 4.15 Reliability Correction tests between variables Ease (M), Use (B), Fun (S), play experience (L), and Availability of Facilities (P) have strong correlations with Intention variables (I) This states that children will still be willing to continue to play this game if the game is easy to play, feels useful, and has facilities to play.

Table 4.1 Reliability of Correction Test between Variables

	G	S	M	E1	E2	SEE	SPE	SF	SI
G	1	-.002	.173	.089	.151	.103	.015	.063	.062
S	-.002	1	.148	.149	.040	-.058	.119	.131	.101
M	-.173	.148	1	.209	.420	.079	.106	.030	-.254
E1	-.089	.149	.209	1	.115	.263	.290	-.043	.247
E2	-.151	.040	.420	.115	1	-.023	.021	-.114	.193

SE	-	-	.079	.263	-.023	1	.549	.377	.596
E	.103	.058					**	*	**
SP	-	-	.106	.290	.021	.549	1	.257	.346
E	.015	.119				**		*	*
SF	-	-	.030	-.043	-.114	.377	.257	1	.444
F	.063	.131				*			**
SI	.062	-.101	.254	.247	-.193	.596	.346	.444	1
I						**	*	**	

V. CONCLUSIONS

From the background above, the writer formulates the problem about guesspic games as the children's educational game media, namely: 1. Game Guesspic is a learning game that recognizes living objects and inanimate objects by coloring objects that have been made this game designed using unity. 1. What makes it interesting is that this game has categories of animal images, vehicles, numbers, letters, and Gameplay. In this game giving coloring learning and knowing what objects are around the environment when choosing on the available image will appear but it has not been colored when it has colored the child imitating the image that has been colored after finishing coloring will go to the next image that will be color it. 3. Game Guesspic research results from 39 respondents, the game states that children will still be willing to continue playing the game. This is based on a correlation test with easy to play parameters, is felt useful, and the child has the facilities to play so they are willing to continue using the Guesspic game.

REFERENCES

- [1] Jumroh, O. M., & Tahun, D. E. (2014). Sniptek 2014 Perancangan Animasi Interaktif Permainan Mewarnai Untuk ISBN : 978-602-72850-5 -7. 247–252.
- [2] D.L. Fithri dan D.A, Setiawan, “Analisa Dan Perancangan Game Edukasi Sebagai Motivasi Belajar Untuk Anak Usia Dini, dalam Jurnal Simetris, Vol 8, No 1, 2017.

- [3] Shofiyah. (2013), “Penerapan Pembelajaran Mewarnai Gambar Dalam Meningkatkan Motorik Halus Anak Kelompok B Di TK Hidayatus Shibyan”, dalam Jurnal IT-EDU, Vol 2, No 2, 2013.
- [4] Studi, P., & Informasi, S. (2018). Aplikasi Media Belajar Interaktif Mewarnai Gambar Digital Untuk Anak Usia Dini. (September), 62-65.
- [5] Nurchasanah, E., & Sudarmilah, E. (2017). Pengembangan Multiplatform Game 2D Pengenalan Nama Benda Dalam 3 Bahasa Untuk Anak Usia Dini. *Khazanah Informatika: Jurnal Ilmu Komputer Dan Informatika*, 2(2), 64. <https://doi.org/10.23917/khif.v2i2.2075>.
- [6] Edukasi, G., Android, B., Media, S., & Untuk, P. (2016). Game Edukasi Berbasis Android Sebagai Media Pembelajaran Untuk Anak Usia Dini. 1(1), 46– 58.
- [7] Andrianto, D. (2011). Memanfaatkan Lingkungan Sekitar. 1–22.
- [8] Pratama, M., Sinsuw, A., Tulenan, V., Sentinuwo, S., Studi, P., Informatika, T., ... Bahu, U. (2014). Prototipe Game Musik Bambu Menggunakan Engine Unity 3D. 4(2), 1–6. Retrieved from <https://ejournal.unsrat.ac.id/index.php/informatika/article/view/6990>
- [9] Ii, B. A. B., Pustaka, T., & Dasar, D. A. N. (2014). No Title. 6–12.
- [10] Pratama, W. (2014). Game Adventure Misteri Kotak Pandora. *Jurnal Telematika*, 7(2), 13–31.