

EDUCATIVE INTRODUCTION COLOR GAME BASED ON ANDROID

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Abstract -- Game is a game that is familiar in the world of children. This study raised one educational game which applied to TK Muslimat Khoiriyah Kudus. This research was appointed to provide a variety of learning in kindergarten Muslimat Khoiriyah Kudus in the learning process, especially in terms of color recognition. Color is one of the basic materials in the world of children. This is what makes the author of this theme of. Learning the introduction of color are very embedded in early childhood education. This is accomplished to practice children's creativity level. For enjoy easy and attractive communication of necessary media learning interesting and interactive. This research method research and Development. Result from this research is a game Education is designed to help teachers to further raise interest of children to learning the introduction of colors.

Key words - *education, color, android, game.*

I. INTRODUCTION

The gaming theory (*Game*) initially developed by a France mathematician, Emile Borel (1921). Then developed by John V.N and Oscar Mogenstern as economic competitive action formulating mean contains of "Game included of a set of rule which triggered competitive situation from two until some people or group by choosing developed strategy to maximize self-winning or to minimize the opponent winning; the rules determine the action possibility to every player as received noted in every player as advancing playing and some victories or losing in every situation." Meanwhile a methodology used to promote the attempt by using model of one real system called as simulation. Thus simulation is a technique to formulate and breakdown general models of the wide ones. This wide group or class can be called, "If all the other attempts fail, try to take simulation." From the game theory and simulation there is relation between them, that is by the existence of *management simulation*

and *training simulation* which include of gaming simulation itself.

Game is taken from the English word means basic gaming. Gaming, in this case, refers to the definition of "intellectual agility." [1]

Computer game was firstly found in 1962 by the MIT engineers by name of *space war* This game worked by computer engine PDP-1, which was like a car. Although its graphic was still primitive but the size in that era was said advance.

There are several categories of the game, such as:

A. Shooting

This game needs high speed reflect, coordination of eyes-hand, timing; the main point of this game is shooting. Example: GTA and Crysis.

B. Fighting

Game in which its playing needs reflect, and fast eye-hand coordination. But the point of the game is mastery the character skills. Example : Mortal Combat and Tekken.

C. Adventure

This game emphasizes on its story plot and player's thinking ability in analyzing places visually, solving riddles or event concluding various events. Example: Kings Quest, and Space Quest.

D. Simulation, Construction, Management

This game often describes world closely to real world and paying attention on the various detailed factors. Example: The Sims, Roller Coster, Tycoon.

E. Strategy

This game needs coordination and strategy to play. Most of this game is battle. Example: Warcraft, Age of Empires.

F. Sport

This game is real-adaptive game which needs agility and strategy to play. Example: PES 2012, and NBA

G. Puzzle

This riddle game, the players must solve the riddle in the game. Example: Tetris, Minesweeper dan Bejeweled.

H. Edugames

This educative game used to introduce color, words, or numbers to toddler, even foreign language.

The technology development recently has changed to android operation system by the time of hardware development. Even many children are familiar with smartphone based android. Android is an operation system which its *Open Source* and can be developed by competent researchers. Android is an for *mobile* devices based linux encompasses operation *middleware* and application. Initially, Google Inc, bought Android Inc which was a new comer in creation of smartphone software. Then to develop Android, there was development of Consortium of Open Handset Alliance from thirty four software companies and telecommunication, included Google HTC, Intel, Motorola, Qualcomm, T-Mobile, and Nvidia [2].

The statement of the problem of this research still used conventional way and no interactive learning based android.

In this research, the researcher proposed the theme of educative color introduction game based android. The learning about color in this kinder garden, Muslimat Khoiriyah Kudus, was still conventional. By using this application it is expected more interesting learning and better learning. The result of this research is educative game based on android, the presented proceeding in seminar and national journal with ISSN.

II. THE RESEARCH PURPOSES AND SIGNIFICANCES

A. The Research Purposes

The research purposes of Educative Introductory Game based on Android are:

1. Introducing color to students by delivering it into educative game.
2. Improving the learning modes in the kinder garden which previously and conventionally held into based on media.

B. The research significances

The research significances in the educative introductory color game based on Android are:

1. The educative game application will enrich learning literacy of the kinder garden.
2. Improving the ability of Muria Kudus University in researching, developing, and applying Science and Technology.
3. Cooperating between Muria Kudus University with the kinder garden.

III. THE RESEARCH METHODOLOGY

The research methodology was prototype method. It was one of the methods to develop software mostly used. Through this method, its development and the customers can interact each other during its creating period. Usually a customer only defines generally what is needed. The processing of its data needed and contrary filled up by development was lack of efficiency of the operational system ability and interface which connected human to the computer [3].

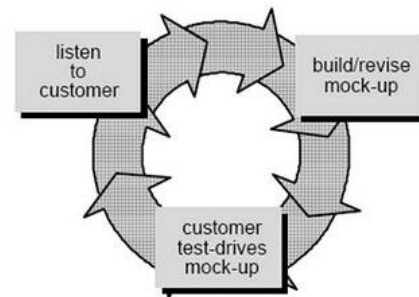


Figure 1. *Prototype Model*

The Prototype Methodology Steps:

1. Collecting any necessity and revisions

Determining the necessity to develop the software and also the collecting data method and interview done in this step.

- a. Observation

Observation is a technique of collecting data and facts effectively to figure out a system.

Observation is a direct observing of the stakeholder and also its physical condition and or direct observation to an ongoing activity. In this research the observation done in the kinder garden as study case.

b. Interview

In this research interview done to the teachers of the kinder garden which became observation results for the researcher to figure out the teachers' necessity.

2. Designing

Translating step from the analyzed necessity and data into understandable form by users.

3. Prototype Forms

Translating arranged data into language programming.

4. Evaluating the Customers to the Prototype

The program tested and examined by customers and if any negative unexpected things could be fixed and added.

5. Fixing Prototype

Fixing the program based on the necessity of customers then being created into program and evaluated by customers until all users' necessity covered.

6. Recreating Product

The program and all necessity of the users covered.

IV. THE RELATED RESEARCH

Based on Agustinus Nilwan in his book titled *Pemrograman Animasi dan Game Profesional* published by Elex Media Komputindo, game which is computer based game created by animation technique and method. To understand deeply about the use of animation needs to understand any game creation. Or to understand how the game creation, then needs to understand technique and method of animating because both of them are related (Nilwan, 1998). Based on Clark C Abt. Game is an activity involves players, and also needs to struggle to achieve its purposes by its limitation of certain context (example, limited by rules). (C., 1987). Based on Chris Crawford, a gaming computer designer says that main point of game is an interaction, activity which concern on

achieving something and requires active players though there are passive players (NPC) [4]

The most successful and real application from this gaming theory mostly found in military but also by its development in real word which is getting more competitive and limited source and also increasing the importance of its gaming business application. The contract and bargaining of program and also the applied decision of pricing is the example of the use of the wider gaming theory. These theory models of gaming can be classified with some modes, such as player numbers, advantage and disadvantage numbers and strategy numbers applied in the game. If there are two players, the game played by two players. If there are N players, the game is called N game players. If the advantage and disadvantage are zero-called as zero gaming (constant) and if the advantages and disadvantages are not zero-called non zero gaming (Non Zero-Zum Game) [5]

The real word surely has various colors. Those can be caught due to light. As mentioned that is without light we never can see colors. Light consists of fragmented lights which have various length and various vibration and different frequency. If waves get into eyes, then there will be color sensation. In the development, the use of game in educational field has grown significantly. Since educative game grows, learning theory inspires newly by considering educative game as one of the learning models. Gaming is an activity happens directly limited in certain circumstance based on the current rules freely, and outside of necessity and materials. Gaming is a fun and enthusiastic activity based on that given circumstances [6]

When planning a basis and multimedia consist of various data and format, the data in the organization was based on content and physical storage. The intended results to ease accessibility on the object or element of multimedia used in the system [7]/

The definition of Android is a operational and mobile system in which its open source developed by Google. The OS of Android used for computer tablet and smartphone. But based on the definition and its form of Android is a intelligent robot in the form of human. The android users in Indonesia based on Research Institution, Sharing Vision, recently published the research findings to Android users in Indonesia in 2013. In 2013, the operational system of Android covered about 60% available smartphones in Indonesia. The growing numbers of the users reaches morethan 1.5 million per day. The revealed application which mostly used by Android users in Indonesia are Whatsapp (80%) and its

(97%) of the respondent admitted that they joined group. [8]

V. THEORETICAL FRAMEWORK

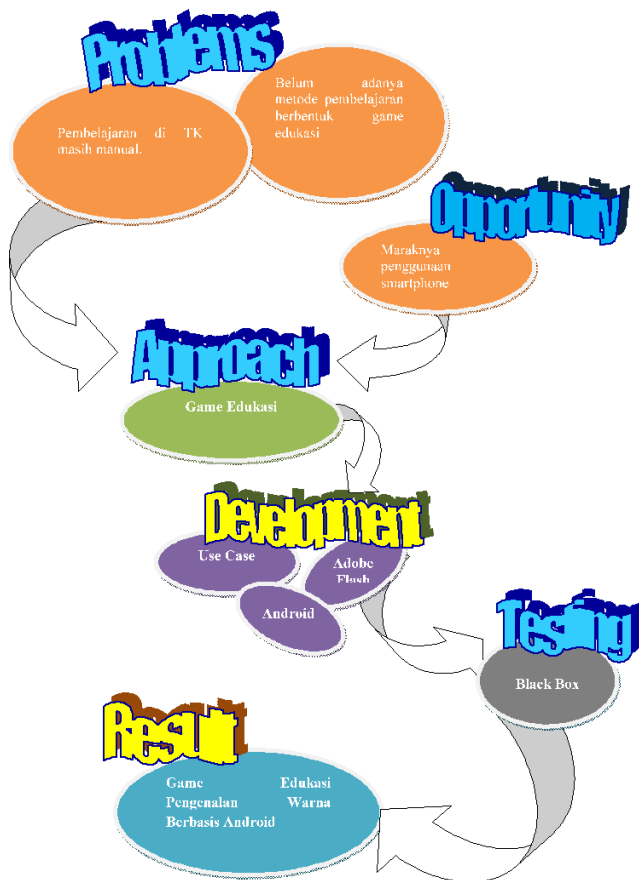


Figure 2: Theoretical Framework of the Educative Introduction Color Game

VI. THE PLANNING OF THE EDUCATIVE INTRODUCTION COLOR GAME BASED ON ANDROID

In developing a educative introduction color game based on Android, needed arrangement steps of the game. The steps are in the form of *flowchart*. In figure 3, explains the flow of the game which will be developed.

Dalam membangun sebuah *game* edukasi pengenalan warna berbasis android, diperlukan alur perancangan dari *game* tersebut. Perancangan pada *game* edukasi ini menggunakan *flowchart*. Pada figure 3, menjelaskan alur dari permainan *game* yang akan dibangun.

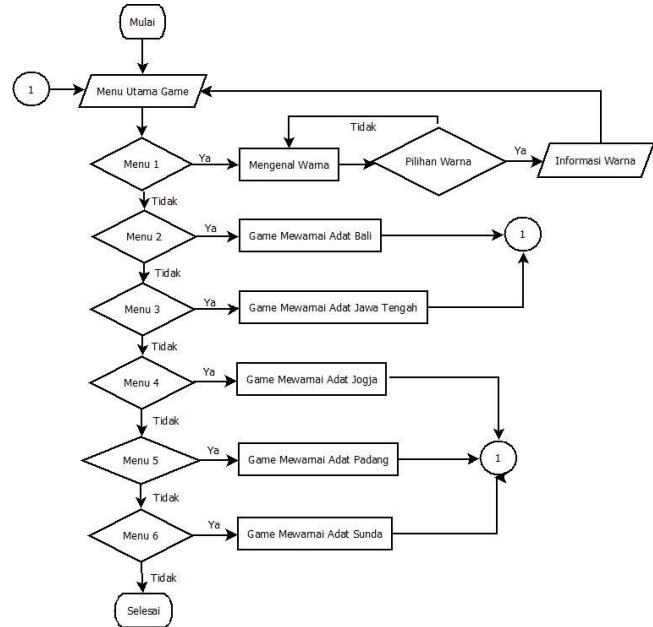


Figure 3: The Flowchart of Educative Introduction Color Game

In this developing stem of the game had several steps. The first one was designing the characters which would become the basis of colouring. The basic color decision which would make students easy and like in playing *the game*. This research findings could be seen in figure 4 for the main menu of this game.

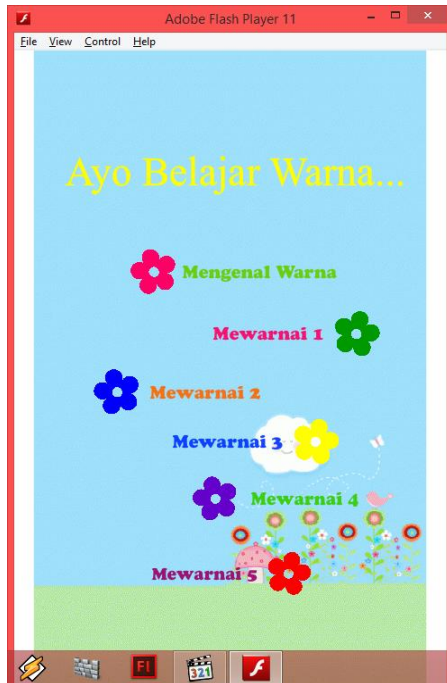


Figure 4: Main menu of the game

This application consists of 6 menus, such as: introducing colors, coloring 1 until 5. In the menu of introducing color consists of introducing basic colors completed by their pronunciation of each color and its writing. In the figure 5 shows the introducing color menu.



Figure 5: Introducing color menu

This game completed by gaming option which could make students interested in to learn using the application. In the coloring menu 1 until 5 consists of coloring game. But not only coloring game, the proposed theme in this research is also to introduce Indonesian cultures through its traditional clothing. In the figure 6 covers Balinese traditional clothing, Javanese traditional clothing in figure 7. Yogyakarta citizen traditional clothing can be colored in the coloring menu 3 can be seen in the figure 9. In the figure 9, in the coloring menu 4, the students can give color the traditional clothing of Padang, Western Sumatera. And the last menu is coloring menu 5 can be seen in the figure 10.



Figure 6: Coloring menu 1



Figure 7. Colofing menu 2



Figure 9. Colofing menu 4



Figure 8. Colofing menu 3



Figure 10. Colofing menu 5



Figure 11. Game on android platform

VII. CONCLUSION

This research resulted learning color activity for kinder garden students. In this application, the students can learn various basic colors, the writing of the colors in Indonesian and English language. And the application also completed by pronunciation of each colors. To relieve any boredom, this application also has coloring game which previously the students did it on drawing books; but currently they can do it on their gadgets.

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REFERENCES

- [1] R. M. T. L. Nur Khasanah, "Build Educative Game as Tool Teaching Science Nahwu Jurumiyah For Android Based," Solo, 2014.
- [2] Nazruddin.S, Android Pemrograman Aplikasi Mobile Smartphone dan Tablet PC Berbasis Android, Bandung: CV. Informatika, 2012.
- [3] R. S. Pressman, Rekayasa Perangkat Lunak: pendekatan praktisi (Buku1), Yogyakarta: Andi Offset, 2007.
- [4] C. Crawford, The Art of Computer Game Design. Second Edition ed, United States: Peachpit, 2003.
- [5] T. Listyorini, "Perancangan Game Simulasi Pendaftaran Skripsi Pada Program Studi Teknik Informatika Universitas Muria Kudus," *Simetris*, vol. 2, no. 1, pp. 56 - 63, 2013.
- [6] J. S. a. H. Hakonen, "Synthetic Players A Quest for Artificial Intelligence in Computer Games," *HUMAN IT*, vol. 7, no. 3, pp. 57-77, 2005.
- [7] Jasson, Role Playing Game (RPG) Maker (Software Penampung Kreativitas, Inovasi dan Imajinasi Bagi Game Designer), Yogyakarta: Andi Offset, 2009.
- [8] T. Listyorini, "3d-Catalog Mountain View Resident Berbasis Augmented Reality," Bandung, 2014.

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