

**MOBILE GAME AS EDUTAINMENT MEDIA**  
**(Protectooch-Arsasenia's game study case)**

**Pramadya, Randi**

*randipramadya@yahoo.com*

**ABSTRACT**

*One of many ways to deliver the importance of keeping tooth healthy is with health counseling. It can be in many forms, such as public service advertisement, advertisement from dental care products (brush, toothpaste, and mouthwash), school activity (mass tooth brushing), event from dental care products, and even game.*

*Edutainment is one of counseling form which is most commonly used and demanded, where children feeling easy to learn while having some fun. One of the options that are popular in edutainment is learning through mobile game. From all of the mobile games with the theme of education, one of them is Protectooth. Protectooth, a game with children dental health as the theme, is a very interesting topic for research. This game is created and being developed by Arsanesia, one of the local game developer located in Bandung, West Java.*

*The research on the game with this edutainment theme using qualitative methods such as as interviews with the creators and literature as well as communication theory for analyzing. The outcome of this research is that the method through an edutainment game can be a valuable input for similiar counselings.*

*Key Words: Caries, Dental Health, Counseling, Edutainment, Mobile Game.*

## **1. Background**

### **1.1 Dental Problems**

Indonesian Dentists Association (PDGI) complained about the quality of the dental health of Indonesian children under the age of 12 years which continues to decline. In the mid 1970-1980's on average two children experienced one case of dental cavities (caries) per year, then in the 2010's could be more than two cavities cases happen per two years.

According to research conducted by several faculty of dentistry in Indonesia, approximately 70% percent of children in primary schools have cavities or caries. And most of the caries are attacking the deciduous teeth or baby teeth. The caries that are attacking the deciduous teeth or milk teeth are increasing the risk of periodontal disease, which also can spread to the permanent teeth.

Dental caries is a disease that is often found on the teeth. In Indonesia, the prevalence of caries in primary school children are almost 60-80% (Dep.Kes.1960), while in the United States 93% of the population had caries lesions (Massler, Ludwick & Schour 1952) .

It is also supported by a research which conducted in Singapore and Indonesia in 2007, where 8 of the 10 children of primary school age are already having cavities problems. Shockingly, the study also revealed that five years old children in Indonesia has experienced cavities problems on three teeth, where as children in Singapore experienced cavities problem on the age of 12. (Source : <http://female.kompas.com/read/2012/05/10/17022744/3> .  
Penyebab.Utama.Gigi.Berlubang).

### **1.2 Edutainment**

Edutainment is one of counseling form which is most commonly used and demanded, where children feeling easy to learn while having some fun. According to Moh. Sholeh Hamid in his book Metode Edutainment, concluding that edutainment is a way to make the process of education and

learning can be fun so that the students can easily capture the essence of learning itself without feeling that they are studying. Edutainment is a relatively new term in the world of education, which became popular along with the development of industry and entertainment programs in the late 19th century. Edutainment are including playgrounds, television shows, and computer games.

Mobile games or video games in general, is one of the newest alternative in introducing or providing education, especially to children. At first, educational games are intended for children who are still young, at the age of 3-5 years old. And the core of the game is to teach skills or abilities as well as provide information or knowledge to the players in a fun way . In the book *The Art of Game Design: A Book Of Lenses*, Jesse Schell says that games can be an appropriate tool for education or education, but the game is only efficient in their function as a tool and not as a system of education. This is because the games essentially has the function of entertainment, which is entertaining.

In the learning process, learning the facts (multiplications, scientific name, the table, the name of the capital, etc.) can be felt boring and repetitive. Video games can easily integrate these facts into a game or gameplay systems that can provide a "reward" when players learn the information which is not so attractive. Video games, in particular, can use visual or a player that can help the user learn these facts.

### **1.3 *Protectooth* Game from Arsanesia**

Arsanesia is one of the local game developer located in Bandung, West Java. The company is engaged in two fields, Game Development and Brand Services. In Game Development, Arsanesia has made 13 title games with Indonesian culture as their main theme, and has been downloaded more than 200,000 times. While the brand services main job are to help other companies or brands who need games for company branding or marketing.

This is probably because at this point, the game is a fun and effective medium to attract consumers and build brand awareness.

One of the games that had been made by the developer is Protectooth, a game that tells the story of how the children could play a character in this game that is related to dental health. The terminology of the title of the mobile games are derived from the from English word “protect” and “tooth”. Because Protect has the letters "t" on the end and the tooth has an initial letter "t", then the two words are then combined into Protectooth.

Protectooth is one of those games that Arsanesia made apart from other games, namely: Gamelan Player, Pitung, Rush Prambanan Temple, Wago Warrior, Slapillar, Little Lea and Flipallago. They are managed to make the world to take a notice to Indonesia, and this is proofed from the number of downloaders. Until now, the company made their games downloaded by many countries. With the percentage of India by 26%, Indonesia 15%, Thailand 10%, Philippines 10%, and 10% Malaysia. The rest are Vietnam, Pakistan, Italy, Brazil, Mexico, Russia, Finland, Saudi Arabia, Germany, Turkey, ad Egypt by 1-2 percent.

## **2. Study**

Game, especially educational game, cannot contain fully education. But educational game also can not fully "getting rid" of learning materials. Games can change the learning materials that are dull and flat, into a fun and active learning through the whole gameplay, story line, music, and the involvement of the main characters in the game. This is what makes video games as an effective medium as a medium of learning or educational media for children.

A good games has 4 important elements in the form of the game mechanics, story, aesthetics, and technology. Referring to these 4 elements, the Protectooth game analysis are as follows:

### **a. Mechanics**

In the game, there will be two type of gameplay, the first gameplay is fighting bacteria, and the second gameplay is cleaning teeth. The

game against bacteria is the main gameplay, and the difference between other games is also the theme game, which is dental health. Players will interact directly with bacteria that attacking the teeth. The teeth, bacteria, and the player is an active character, where bacteria play as an antagonist and the teeth play as a protagonist. The purpose is to build a state of the interactive game between a player and the two characters, where they are interconnected with each other. In conclusion, "the bacteria attack the teeth and the player must save the teetgth from bacteria".

- In the game, the bacteria will move according to the selected motion pattern (by programming).
- The three main things in the game are Decay Bar (tooth status), Grip Bars (bacteria), and Pulse (the player's attack).
- Players attack bacteria by tapping or touching the screen . When doing a tap, a pulse of wave will appear which is the player's attack.
- Pulse will reduce Grip Bar. But as in game, the bacteria will reduce Decay Bar. The player will win if Grip Bar exhausted or vanished and lost if the Decay bar runs out.

b. Story

The world of Gwynor is threatened when the portal of the Land Of Rotten suddenly open and the bacterias are attacking the teeth. Tooth fairy came to save the tooth from bacteria, and they are taking adventures in the world full of wonders, Gwynor. The tooth fairy is a member of the Protectooth group, an organization that are in charge of guarding and protecting the tooth. Tooth fairy is the main character of the game. Basically they are the tooth fairy in children story, a mythological creature or creatures of imagination that is popular among children. Tooth fairy became a very important lead character in various stories regarding the departure of baby teeth that usually occurs when in 6-7 years old. Parents in all over the world, with multiple versions of similar and almost the same story, tell tales about

the existence of fairies, which will replace the milk teeth that are lost with the prize of money or other small gifts.

c. Aesthetics

Illustrations are used to describe the character and background of the game. Because the target audience are the kids with age 8-12 years old, the visual style is the one that often used in the children story books. While in gameplay, the visuals are in form of vector. It is used to create a significant difference between the character and the background, where the character is in vector form while the background is in illustrations form. And also in order to focusing the player with character throughout the game.

d. Technology

This game is created using Unity3D engine . Unity3D is a freeware software, namely software without paying or free to use. Unity3D is usually used in 2D and 3D game development. In addition , the use of Unity is based on:

- Use of source for a variety of different projects and even for multiple platforms.
- The use of flexible programming languages.
- Not too complicated but also not too simple.
- Simple workflow .

### **3. Conclusion**

It is important to understand that none of the 4 element of the game that is far more important than others. In the following picture does not show any relationship that is more important, but more to how to describe the "gradations of clarity" or " visibility gradient", which in fact , elements of technology tend to be the least seen by the player. While aesthetics are the most visible elements, and mechanical and stories are in the middle.

## BIBLIOGRAPHY

### Book Source

- Anggraini, Lia dan Kirana Nathalia. (2014). *Desain Komunikasi Visual*. Bandung: Nuansa Cendekia.
- Arsyad, Azhar. (2006). *Media Pembelajaran*. Jakarta: Rineka Cipta.
- Ainul Kusumo, Romli. *Sayur + Buah = Sehat: Mengenal Kandungan dan Khasiatnya Untuk Menjaga Kesehatan Tubuh*. Sleman: Pionir Media.
- Hamid, Moh. Sholeh. (2013). *Metode Edutainment*. Jogjakarta: Diva Press.
- Sachari, Agus. (2005). *Pengantar Metodologi Penelitian Budaya Rupa: Desain, Arsitektur, Seni Rupa, dan Kriya*. Jakarta: Erlangga
- Saulter, Joseph. (2007). *Introduction To Video Game Design And Development*. United States: McGraw-Hill Irwin.
- Schell, Jesse. (2008). *The Art Of Game Design: A Book Of Lenses*. United States: Morgan Kaufmann Publishers.

### Magazine, Journal, and Thesis

- Fuller SS. *The Development of A National Oral Health Promotion Programme For Pre-School Children In England*. Int Dent J 2001;51;334-8.
- Kupietzky A. *Teaching Kindergarten And Elementary School Children Dental Health: A Practical Presentation*. J Clin Ped Dent 1993;17(40);255-9.

### Another Source :

- \_\_\_\_\_. "70% Penduduk Indonesia Alami Gigi Berlubang". <http://kebijakankesehatanindonesia.net/component/content/article/73-berita/1653-70-penduduk-indonesia-alami-gigi-berlubang.html> (Accessed on 11 April 2014)
- \_\_\_\_\_. (2012). "3 Penyebab Gigi Berlubang". <http://female.kompas.com/read/>

2012/05/10/17022744/3.Penyebab.Utama.Gigi.Berlubang  
(Accessed on 11 April 2014)