The Design Studies of Living Environment Board Game "Earth Plan"

Revica Zora Vadeli[1] Kurnia Setiawan[1*] Herlina Kartaadmaja[1]

[1]*Design Communication Visual, Faculty of Art and Design, Tarumanagara University, Jakarta, Indonesia*
[*]Corresponding author. Email: kurnias@fsrd.untar.ac.id [2]

ABSTRACT

There are many issues about our environments. Indirectly, we are also among the people who contribute to the environmental damage. The author wants to introduce and educate environmental problems that are currently occurring through a game approach. This research was qualitative. The research object was the design of the environmental board game "Earth Plan". The research used a design methodology: Target Audience, Key Facts, Creative Strategies and Concepts, Results. The data collection methods used were literature study and interviews accompanied by a SWOT analysis. The design of the Board Game consisted of; board games, characters, game cards (chance cards, question cards and character cards), board game packs, pawns or game pieces. The board game design was made with the environmental theme concerning 3 important points by the Eco Spirit Center, such as 3 pillars (economic, social, ecological imbalance). As a solution, creative strategies with the concept of natural harmony and ecological conversion were used. The environmental board game design "Earth Plan" included board games, characters, cards, packaging and supporting media. Through the board game "Earth Plan". it is expected that it can provide education about the environment in playing and learning activities.

Keywords: Board game, Living Environment, Education, Playing

1. INTRODUCTION

There are many issues and problem in our environment such as depletion of natural resources, deforestation, pollution, environmental pollution, and others. There are many other environmental problems that occur around us[1]. Unfortunately, we have also contributed to these environmental problems due to daily activities such as cleaning the body, brushing teeth, washing clothes, etc., have polluted the environment. There are ingredients in soap, toothpaste, and detergents that can damage the environment. For example Alkyl Benzene that is difficult to decompose and Sodium laureth sulfate that is irritant and can damage the environment[2]. Besides the activities that use cleaning agents, the use of electricity can also affect our environment. For example, sometimes, we forget to unplug the cellphone charger when it is fully charged. This results in more electricity consumption. It means that the use of fossil fuel power for electricity generation is also increasing. Deforestation and air pollution can certainly damage the environment. Deforestation is also one of the main problems at this time, because without realizing it from our daily routine of using paper, more trees are cut down. It is evident from the existence of deforestation or deforestation during 2013 to 2017 that reached 1.47 million hectares per year[3]. This figure had increased when compared to the period 2009 to 2013 which was only 1.1 million hectares per year. In

addition deforestation another example of a current environmental problem is air pollution. Based on AirVisual data, it shows that Jakarta is in the first place with the worst air quality in the world. The value of Jakarta's air quality index (AQI) is 166 and the capital's air quality is declared unhealthy or 'unhealthy'. The Director of the Committee for the Elimination of Lead Gasoline (KPBB) Ahmad Syafrudin said that there was a decrease in air pollution that occurred but not during the PSBB (Large-Scale Social Restrictions) in mid-March when there was an appeal about social distancing. Even though there is a reduction in air pollution figures, this is due to current conditions that urge people to remain social distancing and stay at home during the pandemic and the implementation of the PSBB. Therefore, the number of vehicles on the roads has also decreased. Furthermore, there is an example of another environmental problem that is also a big environmental problem in Indonesia, namely waste. Indonesia is estimated to produce 64 million tons of waste every year. Based on data from the Ministry of Environment and Forestry (KLHK), the composition of waste is dominated by organic waste, 60% of total waste. Plastic waste is in second place with 14%, followed by paper waste at 9% and rubber with 5.5%. Other waste consists of metal, cloth, glass, and other types of waste (Ministry of Environment and Forestry, 2017). This garbage can cause flooding, land pollution, and so on. Besides the 2 environmental problems above, there are

still many other problems that need to be recognized and prevented from increasing. Some of the factors that cause air pollution are that the largest contributor to air pollution comes from motorbikes. Of the 19,165 tons / day of air pollution, the main source is motorbikes 44.53%, then followed by buses 21.43%, trucks 17.70%, diesel cars 1.96%, gasoline cars 14.15%, and bajaj 0. 23%. And there are many other environmental damages that occur besides the things mentioned above[4].

2. BACKGROUND

The problems leads many environmental care communities have sprung up, for example the Eco Spirit Center. This community has a vision and mission to protect and restore the environment to a better environment. ECS also wants to invite more people, especially young people, to be more sensitive to the environment in a creative way, one example is by playing board games. This board game was created by considering the small percentage of people who are interested in reading in Indonesia. UNESCO data states that the reading interest of the Indonesian people is only 0.001%. It means that out of 1,000 Indonesians, only 1 person has an interest in reading (Kominfo). This is what makes the writer design a board game. It is to make people can play and learn about environmental problems that exist today.

3. METHOD

3.1. Method of Collecting Data

Collecting data was conducted using qualitative method. the explanation is in the following below:

3.1.1. Literature review

Collecting data for Board Game design used observation of books related to the environment and board games, both from facts that occurred in the environment to ways that could protect the environment. Literature review was also carried out by searching data from the internet.

3.1.2. Interview

Interview is form of direct communication between researchers and respondents. Communication takes place in the form of face to face questions and answers. Therefore, the researcher had prepared alternative written questions. Data collection was carried out through interviews with respondents by providing information, suggestions and input related to the Board Game and the Environment.

3.2. Data Analysis Method

Data Analysis Method used was SWOT analysis to analyze a Board Game with an Environmental Theme. SWOT analysis is an acronym for Strengths, Weaknesses, Opportunities, and Threats. SWOT analysis was used to assess the strengths and weaknesses of the resources owned as well as external opportunities and challenges faced including competitors. The following below is a description of the SWOT analysis based on the internal and external factors that this Board Game has:

Strength
a. Having uniqueness such as combining Board Game with education.
b. Increasing interest and curiosity.
c. The visuals are close to the current game visual model

Weakness
a. New innovation can make people hesitate
b. The number of products sold will start from the small number of items first.

Opportunity
a. The target audience can gain knowledge while playing.
b. New innovations provide a great opportunity for people who are curious to buy this Board Game.
c.There are still few board games that discuss the environment that can add interest.

Threat
a. Competitors who have started the Board Game for a little longer will have more loyal buyers and enthusiasts
b. If there is a buyer who doesn't like or he/she prefers a competitor's product, it is likely that he/she will not come back.

4. FINDING AND DISCUSSION

4.1. Target Audience

Geographic: JABODETABEK
Demographic:
Age   : 18 – 25 years
Stage of Life   : Adolescent to Adult
Gender   : Man and Women
SES   : Upper Middle
Psychographics:
High curiosity,
High curiosity,
Glad to explore and be active,
Able to absorb knowledge well,
Enjoy practicing the knowledge gained.
Behavioral:
a. Doing activities both inside and outside the home,
b. Improving social relationships and enjoying gathering and grouping,

c. Having an interest in playing,

d.Caring for the environment and want to know more about the environment.

4.2. Key Facts

There were facts from the findings based on the concluded analysis that would play a role in the design decision, as follow:

a. The visuals that approach today's game visuals will influence marketing.

b. The discussion or facts that are entered both on the card and others are in the form of facts in the form of interesting questions to answer while remembering.

4.3. Creative Strategy and Concept

4.3.1. Creative strategy

Designing Board game used conceptual aspects of information converted into visual projects. Furthermore, the colors were adjusted to the colors that represent the environment. The design of this board game features designs or visuals that were close to the current game, especially the characters, that can attract consumers to play. Each character was also equipped with their respective skills that can help the character itself and attack other characters.

4.3.2. Creative concept

4.3.2.1 Main theme of design

The design of this Board Game design had the theme of the Environment and also it includes 3 important points that ESC also wants to convey, such as the 3 unbalanced pillars then the harmony of nature and ecological conversion.

4.3.2.2. Idea

The big idea of this design was to design a board game that aims to provide education or knowledge about what was happening in our environment today while playing. It was then translated into card games using colors that strongly depict the environment.

4.4. Result

4.4.1. Logo

The logotype was made in white so that the name of the game can be seen clearly. The background color used is green that shows the relationship with the environment. Besides, the logo was also made with textured or shaped fonts like rocks and earth. This is intended to add to the environmental impression in the logo.

Figure 1 Earthplan logo

4.4.2. Character of the game

The characters made for this board game have their respective elements. The colors chosen for these characters fit the elements they have and it can attract players' attention. There are four characters in this game representing important elements in the environment, such as land, water, air and sun.

Figure 2 Card characters

4.4.3. Board game

Board Game is dominated with green and yellow in order to describe the environment. The color of the board or in which the player is walking given a lighter color. Thus, it can be more clearly seen. Then the entire illustration is made pointing outward so that the four players can see the game board properly.

Figure 3 Board game

Figure 4 Mock up board game

The board game is also equipped with fields to plant the seeds that have been collected. There is also land of chance or opportunity, land for travel, wish tree, land of elements, and so on.

4.4.4. Question card

The question cards are made by having different levels of difficulty, such as the easiest level from level 1 to level 3. This card is used to allow players to collect as many seeds as possible. Each level, the player will get the number of seeds according to the level of difficulty as well as according to the right or wrong answer.

Figure 5 Question card

4.4.5. Chance card

Chance cards are made to add to the excitement of this game. These chance cards consist of good chance cards as well as chance cards that can harm the players. This card can be used to benefit the player's own character or can be used to attack other players. This card can also contain challenges to get more seeds.

Figure 6 Chance card

4.4.6. Packaging

In game packaging, the colors used are festive with green as the dominant color. This aims to give an even stronger impression of the environment. By using eye-catching colors, buyers can be more interested or curious about this game first.

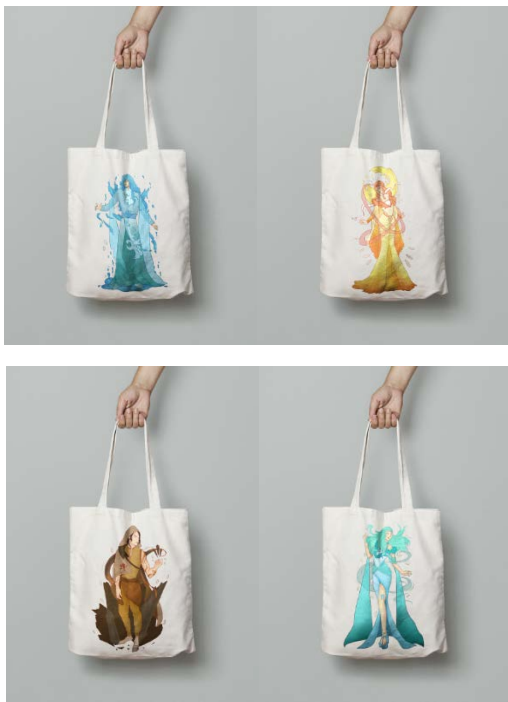**Figure 7** Packaging

4.4.7. Supporting Media

4.4.7.1. Tote Bag

Here, Tote bag is a supporting media that can support the use of plastic as well as the main purpose of this game.

Figure 8 Tote bag

4.4.7.2. Mug

Figure 9 Mug

4.4.7.3. Paper Cup

Figure 10 Paper cup

4.4.7.4. Umbrella

Here, umbrella is designed with a dominant green color that gives a strong environmental impression and image, then an illustration is also given on the ends and sides of the umbrella.
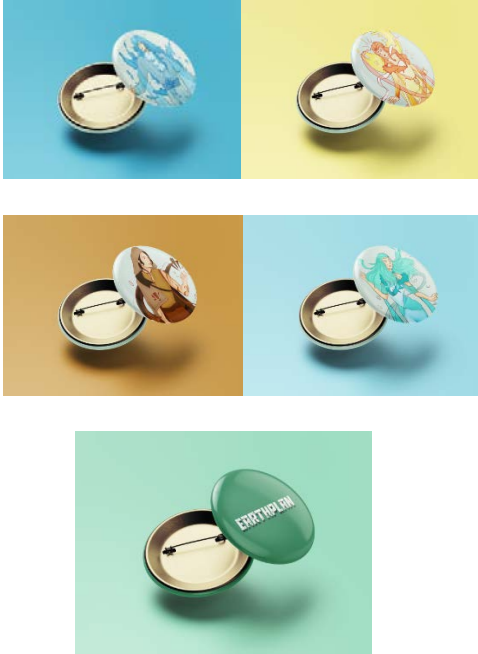

Figure 11 Umbrella

4.4.7.5. Pin

This pin can be worn by payers to increase popularity also introducing this game to people who don't know this game either. Besides that, it also functions as merch for players.

Figure 12 Pin

4.4.7.6. T-shirt

This t-shirt can be as merch for players as well to introduce the game to many people as well.

Figure 13 T-shirt

4.4.7.7. Eco Bag

Eco bag as Supporting media can also support the minimal use of plastic, as what this game wants to convey.

Figure 14 Eco bag

4.4.7.8. Drinking bottle

This drinking bottle is made to decrease use of plastic bottles and to support this board game as well.

Figure 15 Drinking bottle

5. CONCLUSION

The design of board game is made with the environmental theme concerning 3 important points by the Eco Spirit Center, such as 3 pillars (economic, social, ecological imbalance). As a solution, creative strategies with the concept of natural harmony and ecological conversion are used. The design of the environmental board game "Earth Plan" includes board games, characters, cards, (opportunities and questions), packaging and supporting media (totebags, mugs, paper cups, umbrellas, pins, t shirts, eco bags, drinking bottles).

Knowledge of the environment is very important for society. This knowledge can make people aware and educate people to prevent environmental problems that exist today. With the creation of this board game, it is expected that players will realize the importance of protecting the environment for survival now and in the future.

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