

Game-Based Model on Environmental Insights to Improve the Behavior of Clean and Healthy Living

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Abstract—This study aims to create a game-based model on environmental insight to improve the behavior of clean and healthy life students of one of the Elementary Schools in Indonesia considering that clean and healthy behavior is something that is needed to support the daily activities of the students, this clean and healthy lifestyle will get maximum results if applied early. This research uses research and development method. From the pre-test it is known that the average score of students of the school who have carried out clean and healthy living behavior before applying an environment-based game model. After doing the post-test it was known that the average score of students of the school had increased, this result was obtained after the given environment-based game model was applied. This increase was quite significant. The model made is expected to be useful in the wider community. That is beneficial for the development of clean and healthy living behavior, which is better in the future.

Keywords—*component; game; environment; behavior*

I. INTRODUCTION

Tourism activities cannot be denied and will always be a basic need for every human being to eliminate boredom due to daily activities. Haryono in [1] states that tourism is an activity where someone seeks pleasure by enjoying a variety of entertainment that can release fatigue. Based on the fact that humans will always need tourism, the tourism industry will always be sought after.

Judging from the geography, tourism is divided into mainland and island tourism. Both have their respective attractions. Archipelago tourism has a distinctive feature because it is different from mainland tourism in general. DKI Jakarta Province has tourism potential on land and islands. Islands tourism DKI Jakarta Province is located in the Seribu Islands.

Islands Region is the north gate of DKI Jakarta Province which has distinctive characteristics in terms of population and territory. The Seribu Islands has an area of 6,997.50 km² and 865.59 Ha of land. The Seribu Islands are a cluster of small islands stretching from Jakarta to Sebira Island. The Island which is the Administrative District since 2001 in accordance with the legal provisions set forth in Government Regulation No. 55 of 2001. Administrative District of the Seribu Islands

has a vision as a sustainable field and park of marine life. While the mission it carries out is: (i) realizing the Seribu Islands region as a sustainable marine tourism area, (ii) enforcing laws related to the preservation of the marine environment and all aspects of life, and (iii) improving welfare through the empowerment of the Seribu Islands community with an economy based marine.

One potential area to visit in the Seribu Islands is Tidung Island. Tidung Island is a populated island that is growing rapidly as a tourist attraction for beaches and marine tourism. The arrival of tourists who are increasingly giving a negative impact if not supported by good management. The high level of visitation and tourist activity on Tidung Island can result in high garbage yields. The garbage is still not managed properly. Waste management carried out by the community is still constrained both in terms of infrastructure and understanding of people's behavior regarding waste management and hygienic and healthy living behavior that is environmentally sound.

Community participation in waste management is very dependent on understanding the behavior and willingness of the community to maintain and create a clean environment. Understanding these behaviors should be instilled early. Planting is a process of giving understanding, explanation and understanding of ideas to someone about a material, while behavior is an activity carried out by every human being. Planting understanding of these behaviors can be done in various ways, one of which is by playing or playing methods

The benefits of playing as outlined by Howard Gardner's theory in [2] are a) improving language intelligence, b) increasing intelligence of mathematical logic, c) increasing music intelligence, d) increasing intelligence of the body, e) increasing intelligence of form and space, f) improving interpersonal intelligence, g) increasing intrapersonal intelligence, g) increasing existential intelligence, h) increasing spiritual intelligence, and i) increasing naturalist intelligence.

Naturalist intelligence is related to everything in nature such as plants, animals, weather, physical images of the earth. Naturalist intelligence includes the skills to recognize various categories and varieties of animals, insects, plants, and flowers. Examples include recording natural phenomena and showing a deep understanding of topics involving life and natural

systems. From these conditions researchers are interested in conducting a study of an environmentally sound game model to improve the behavior of clean and healthy living on students of Tidung 01 Elementary School in the Seribu Islands.

II. LITERATURE

A. Model

The model is defined as a conceptual framework used as: (a) a type of design; (b) a description or analogy used to help visualize something that cannot be directly observed; (c) a system of assumptions, data, and inferences used to mathematically describe an object or event; (d) a simplified design of a work system, a simplified translation of reality; (e) description of a system that might be imaginary; and (f) presentation of minimized data in order to explain and show the nature of the original form.

The model can be used to organize various sources and then be used as a stimulus to develop hypotheses and build theory into concrete terms / conditions to apply it to practice or test theory. Richey explained that the model is a picture that arises from reality that has a composition of a particular sequence.

B. Games

In general, both children, adolescents and adults have a tendency to always want to move while having fun, especially for elementary school age children, it seems that their activity is so high. Usually the forms of activity are channeled through the game. Playing for children is very meaningful and is an absolute requirement to stimulate growth and development.

Games and children are two different things, but one another cannot be separated. It can be said that almost all of the children cannot be separated from the game. One of the child development tasks that must be fulfilled is that a child is able to make up with his peers. To be able to adjust to the environment the child must communicate and interact with peers, most of the peer interaction during childhood is involving the game.

C. Environmental Insights

The community in utilizing the environment, both as a source of fulfillment of living needs such as food, as well as a place of rest and social development such as settlement, recreation, sports, and a place to produce goods for human life such as clothing and other household appliances is sometimes only oriented to the perceived benefits groups or communities that are working on it.

Environmental damage is increasingly increasing so that the impact on human life is increasingly severe and complex. The impact of environmental destruction is slowly taking place so that the community is often not aware of it. Likewise to repair and overcome it is done slowly and gradually and takes a long time.

Human behavior is possible to be the central point of environmental development, in this context environmental psychology tries to learn how motivation, attitude, human

feelings towards the environment. Environmental psychology is then expected to be able to predict and engineer human behavior for the sake of environmentally sound development. In the midst of the community can be seen there are efforts to manage the environment consciously but not programmed, usually seen in the forms of community behavior in managing environmental aspects such as volunteering to fix trash in the household, cleaning water channels, caring for plants, and so on.

D. Clean and Healthy Behavior

Clean and healthy behavior according to the health promotion of the Republic of Indonesia [3] is all health behaviors carried out on awareness so that family members can help themselves in the health sector and play an active role in health activities in the community. Factors that influence the behavior of clean and healthy living according to Atika Proverawati and Eni Rahmawati [4] are: a) washing hands and brushing teeth cleanly, b) consuming nutritious food, c) maintaining the cleanliness of the school environment, d) exercising regularly, e) set a good rest time, f) no smoking, g) weigh the body weight and measure height every 6 (six) months, h) throw garbage in its place.

III. METHODS

This research was conducted in Tidung Island, Seribu Islan DKI Jakarta in April 2018, the object of the study was 49 students of Elementary School 01 Tidung Island.

The method used is to use research and development methods from Borg and Gall cited by [5] which is a process used to develop and validate research products. The design in the research model based on environmental insights using the theory of Borg and Gall proposed by [5] has the following stages. A) Potential Problems, Through observation techniques, the researchers conclude that the behavior of clean and healthy living students of Elementary School 01 Tidung Island – Seribu Islands is still not good, therefore, if the behavior is left unchecked it will have a negative impact on students and the environment. Tidung Island is one of the best tourist destinations in the North of Jakarta City, so the behavior of clean and healthy living is a very important issue for increasing tourist visits to the place. Based on these potentials and problems the researchers took the initiative to create a game model based on environmental insights to improve the behavior of clean and healthy living students of Elementary School 01 Tidung Island – Seribu Islands. B) Data Collection, Data collection used includes reviewing literature or literature studies that can be used as material for planning products to be made. This study makes concepts of game models based on environmental insight. C) Product Design, The product design stage is to make a product in the form of an environment-based game model. In making this product model, researchers conduct consultations with peers, environmental experts or material experts and review literature and references to produce a game model product that is in accordance with the material in question. D) Design Validation, This stage looks at the level of meaningfulness of

the products made and provides a validation instrument based on environmental insight models. In the validation instrument, each expert is asked to assess the design of the model so that it can further identify the weaknesses and strengths of the model. E) Usage Test, the design tested using an environmental-based games model to the small group. F) Product revision, are made after seeing the trial of the uses of whether there are shortcomings and weakness of the product. G) Mass Production, The last stage is to make mass products that can be expected to be applied to every institution that needs and the wider community after the product is tested and declared effective and feasible for mass production.

IV. CONCLUSION

Based on the data obtained in this environmental insight-based game model study which aims to improve the behavior of clean and healthy living conducted at Elementary School 01 Tidung Island – Seribu Islands, there are percentage increased by 38% from pre-test and post-test results. The researchers can draw conclusions that the game model based on environmental insights can be developed and applied to elementary school students 01 Tidung Island, Thousand Islands and also an environmental insight-based game model that aims to improve the behavior of clean and healthy living effectively to improve the behavior of clean and healthy living for students of Elementary School 01 Tidung Island – Seribu Islands.

In connection with the products made, namely an environment-based game model to improve the behavior of clean and healthy living students of Elementary School 01 Tidung Island – Seribu Islands, which are packaged in the form of games, researchers provide suggestions such as the use of this product must show the condition of facilities and infrastructure. Researchers also suggest that before disseminating this product, an evaluation stage from experts is needed which is useful for perfecting the product. Hopefully the environment-based game model that is made useful for the process to improve the behavior of clean and healthy life students of Elementary School 01 Tidung Island – Seribu Islands.

Expert tests conducted by researchers on two experts there are some constructive suggestions for the improvement of an environmental insight-based game model to improve the behavior of clean and healthy living students of Elementary School 01 Tidung Island – Seribu Islands.

From the pre-test it is known that the average score of 49 students of Elementary School 01 Tidung Island – Seribu Islands who have carried out clean and healthy living behavior before applying an environment-based game model of 56%. After doing the post-test it was known that the average score of 49 students of Elementary School 01 Tidung Island – Seribu Islands had increased to 94%, this result was obtained after the given environment-based game model was applied. This percentage increased by 38% and was quite significant.

Based on data collected from experts, which consists of: one (1) game theorist there are several product designs that

need to be revised before small groups and large groups are tested:

TABLE I. THE GAME MODEL

No	Name	Validation	Result
1	Find the healthy	√	Applied and done
2	Find a plastic	√	Applied and done
3	Healthy Puzzle	√	Applied and done
4	Estafette (jump, run and lift) B2M	√	Applied and done
5	Collect the mineral bottle	√	Applied and done
6	Find the microbe at hands	√	Applied and done
7	Choose the healthy food	√	Applied and done
8	Hunt the rubbish	√	Applied and done
9	Estafette the toothbrush	√	Applied and done
10	Pull the tail	√	Applied and done
11	Sort the rubbish	√	Applied and done
12	Sort the healthy life	√	Applied and done
13	Arrange the picture of caring for plants	√	Applied and done
14	Pull the profession line - the tool used	√	Applied and done
15	Creative from used bottles	√	Applied and done
16	Run to distinguish types of garbage	√	Applied and done
17	Choose nutritious and non-nutritious foods	√	Applied and done
18	Insert garbage in the basket	√	Applied and done
19	Matching the function of food and nutrition	√	Applied and done
20	The relay cleans the hands and teeth	√	Applied and done

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REFERENCES

- [1] K. A. Agustina, "Pengembangan Kawasan wisata Budaya kota Surabaya," Institut Teknologi Sepuluh Nopember, 2011.
- [2] N. Mulyani, "Super Asyik Permainan Tradisional Anak Indonesia," *DIVA Press*, Yogyakarta, 2016.
- [3] *Keputusan Menteri Kesehatan Republik Indonesia tentang Pedoman Pelaksanaan Promosi Kesehatan di Puskesmas.*
- [4] A. Proverawati and E. Rahmawati, *Perilaku Hidup Bersih dan Sehat (PHBS)*. Yogyakarta: Nuha Medika, 2012.
- [5] Sugiyono, *Metodologi Penelitian Kuantitatif, Kualitatif dan R&D*. Bandung: Alfabeta, 2013.