



THE IMPLEMENTATION OF WASTE DIAPERS AS CROP PLANT MEDIA BASED ON DIGITAL ECO- LITERATURE

Ahmad Iklil Saifulloh , SS., M.Pd. , Engkin Suwandana, M.Pd., Akhmad Fatoni, SS,
Islamic University of Majapahit, Mojokerto

ARTICLE INFO:

Article history:

Received 1 January 2021
Received in revised form
Accepted 07 April 2021
Available online 30 June 2021

Keywords:

Waste Diapers, Media
Planting media, Eco
Digital Literacy

Abstract

The aims of this program were PKK and Karang Taruna Karya Pemuda Sumbertani who were domiciled in the village of Mojorejo. Mojorejo villagers were lazy in separating waste, processing organic matter into compost, and reselling inorganic waste to the local unit waste bank. Because it is difficult to process and reuse is organic waste and diapers. Both type of those waste cannot be burned because of the water content was high. So to solve the problems some citizens throw the diapers into the river.

To solve partner's problems are to carry out the processing of waste diapers into the planting medium. The purpose of this activity is to resolve the problem of waste that categorize as the most or highest level of pollution that contaminating the environment than other types of waste. Partners also get benefits in social and health care, the economy increased due to drought did not have a negative impact on agriculture, and also the environment becomes cleaner and reduced the pollution of the environment, and also as the absorption of water in the dry season.

The method is sparted into two stages; 1) increasing public awareness through counseling on the impact of diapers waste; 2) the use of diapers as a planting medium. The results obtained were the community was much more aware of not throwing garbage and diapers on the riverbanks and secondly, during the pandemic, people felt it was helped to cultivate the land around the house to meet their daily needs.

Copyright © University of Islamic Majapahit Mojokerto, East Java Indonesia

* Corresponding author.

E-mail addresses: clil88id@gmail.com

1. Introduction

This program was held in a village in the district Pungging. In Mojorejo Village, during the dry season there are problems with irrigation for farming or gardening. This drought is also a problem for citizens when large-scale industries dominate water sources around the village, such as the CV Fertilindo Agrolestari, Pt. Krispi Industri, PT Pura Agung, PT. Rapindo Plastama, PT Java Indo Purstar Carbon, and PT Kurnia Anggun. Those numbers of factories are causing more problems for water supply to the citizens, as well as source of water citizens more shallow day by day.

The water crisis also has an impact on the health of citizens. Evidence of the lack of citizens awareness concretely is the entry of the village in the district was categorized as ODF or Open Defecation Free. Although there were several movements such as Stop Open Defecation (Stop BAB) or Open Defecation Free (ODF) which was witnessed directly by the Regent of Mojokerto, Pungkasiadi, Chairman of the PKK Yayuk Pungkasiadi and OPD, Friday (21/2/20) afternoon on the Bukit Bunga Mojorejo tour. (BBM) Pungging district.



Figure 1. Left-right: Pungging District ODF Declaration - Submission of a charter from the Regent of Mojorejo to the Village Head of Mojorejo (Muhammad Fakhruddin, 2020)

Although the three pillars (Government, Educator, and Society) continues to be the main home work in waste management and public cleanliness, but the reality we encountered from the field observations were not the same. The waste bank managed by the citizens in TPS and with the movements of 3 R (Reduce, Reuse, and Recycle) has long been abandoned by citizens. Program that was active since 24 of February 2017 and run approximately one year was abandoned a year after that. The community is still passive in separating waste, processing organic waste into compost, and reselling inorganic waste to the local unit waste bank.



Figure 2. Left-right: The process of sorting wet waste - the result of sorting dry waste (Photo source: partner's personal documentation).

The left picture is the picture of an abandoned trash that was not use by the citizens of Mojorejo. The reason was the contamination of unidentified organism or dirt which is attach into valuable good to be cycled such as plastic. If a plastic or bottle of plastic waste has been contaminate by the accumulations of manufacturing and household waste in the river, so it can be recycle into valuable material. And the people feel disgust more if the contaminations are mixed with diapers. Meanwhile the right picture is the result of valuable plastic material that has more value, but those plastics are not taken from the river but from an abandoned good of household.

The point is Mojorejo village has many wet waste or organic waste trash rather than the dry ones. The wet trashes dominate the village because the majority of the organic waste is waste from households and directly thrown into the river. Unicycle waste becomes the main problems, so the trash directly thrown into the TPA or *tempat pembuangan akhir* or final place of trash to be burned down. But the problem remain the same, in TPA the employee can't burned down the wet trash and worsen by the diapers who has more water contain than other trash.

Both types of waste trash cannot be burned because of high water levels. Some citizens are usually embarrassed to dispose of organic waste, especially diapers, and finally these diapers thrown away into the river. The lack of citizen's awareness makes clean-up activities in the village within a period of one year in 2017 has already totally dead. Of course, the culture of throwing trash into the river now back as usual.

This condition was in line with the world health research agency, disposable diapers being the second largest contributor to waste in the sea, which is 21% according to the World Bank's research in 2017. In the first place there is organic waste whose

figure reaches 44%. In addition, there are plastic bags (16%), other waste (9%), plastic wrapping (5%), glass and metal glass (4%), and plastic bottles (1%). (Della Syahni, 2018) The main point is the organic waste and diapers are the main constraints in the public rivers and the main contributor trash into the ocean.

This is the evident in the condition of the Brantas River, which is the initial estuary of the river in Mojorejo Village, which is heavily polluted by used diaper waste. Based on data from Ecological Observation and Wetlands Conservation (Ecoton), at least one million diapers come to the Brantas River Basin (DAS) every day. Ecoton researcher Andreas Agus Kristanto explained, based on data collection he did in 2009, there were about a million diapers coming to the Brantas river watershed from upstream in Malang to downstream in Surabaya and its surroundings. "According to data from BPS (Central Bureau of Statistics, 2019). We calculated. It turns out that with the use of four to nine (diapers) per day per child, it turns out that one million diapers will be released into the water," Andreas said, Tuesday (21/7/2020) (Della Syahni, 2018) The prostate approximately 97.1% be linked dominant use of diapers and takes over the 250-500 year in order to vanish fully. (*KTI Limbah Popok Bayi*, n.d.)

Based on those problems, there are several cases of Mojorejo village problems. It's happening because of the awareness people in the village. The villagers consider that it is not a problem or consider it as something that is natural to throw some trash into the river. The conclusions of major problems are: 1). Public awareness problems related to irrigation and clean water and 2). The problems of waste diapers.

2. Methods

The implementation of this program was using a descriptive qualitative approach, as said by Bogdan and Taylor "it's an approach that is used to get descriptive data observable written and spoken words from people and the action or behavior.(Segni & Davidson, 2016) The data received is the result of the Interview of several people who lives on Mojorejo village using social media as the tools in pandemic time. The Method is accompanied by assistance accompanied by a period of approximately 90 minutes per meeting on Saturdays in a period of one week for one month which half of the previous month we have analyzed SWOT related to strengths, weaknesses, opportunities, and threats at the school.



Data collections as the instruments used are interviews, field observations, and documentation. To analyze of data in this research uses a model of Miles and Huberman, namely: reduction of data, data presentation and withdrawal conclusion (Plomp & Nieveen, 2007) Technique Data validity check is performed with: credibility, transferability, dependability, and conformability (Prof. DR. Lexy J. Moleong, 2014) It means that the data in this program were taken from a survey taken randomly from several people from Krang Taruna and several people from PKK Mojorejo Village

3. Result and Discussion

This Community Service activity was carried out in Mojorejo Village, Pungging District, Mojokerto Regency, and East Java. This program is focused on two partners of the Mojorejo Village group, namely Karang Taruna and PKK . This program is implemented through two stages, namely counseling on the impact of diapers waste, the practice of using diapers waste as a planting medium. In addition, this activity also invited several resource persons to deliver a workshop on the awareness of citizens. Apart from that, this activity also provided counseling on the dangers of long-term diapers waste if disposed of into the river.

The follow -up process of production is composed of two stages, namely the stages of training to partners 1 PKK and partner 2 Karang Taruna, PKK in this stage is given training to coordinate data collection for citizens who use diapers, collect, and process diapers at home. This coordination provides awareness regarding the dangers of diapers waste and the processing of its waste into a planting medium, so Karang Taruna in regard as a mover of main activities of this program. Once the phases are carried out by the PKK, the coral cadets were given training related to technical processed diapers are efficient as a planting medium. The stage of evaluation and follow -up activity is the stage end of the activities of the application of technology appropriate for processing waste diapers. All activities from the start will be evaluated for the problem and given a solution.

In phase 1, implementation process, awareness of the importance of protecting the environment as well as the impact of hazards is done virtually through a literary ecological approach. This approach is considered to be one of the most efficient when applied to youth organizations and young mothers and friends who are included in the millennial generation. This approach is carried out in the pre-material stage in the form of environmental-based film surgery with the title wall e. Therefore, this service is based

on digital Eco literacy. (Saifulloh, 2019) So each partner is like in home schooling. By giving a barcode that contains a link to the discussion or material as in the following image

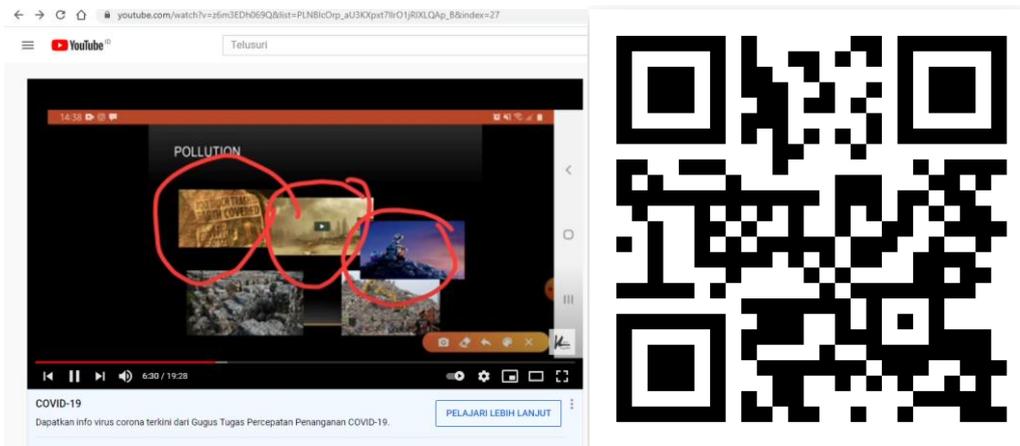


Figure 3.1 First Material. Environmental film surgery with barcode link 1

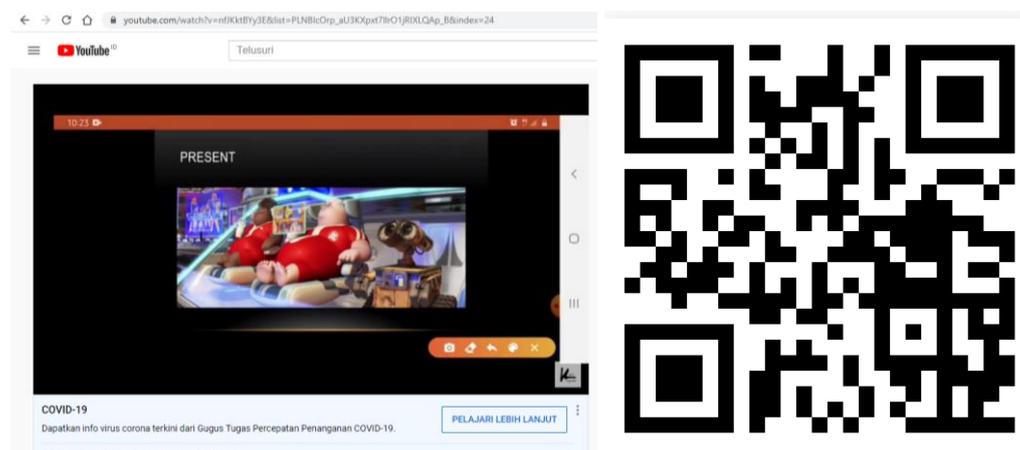


Figure 3. 2 Second Material. Environmental film surgery with barcode 2

From the two pictures, there are a lot of discussions which are the objectives of the awareness material related to the importance of protecting the environment. In the film, there are 8 core discussions that must be conveyed as an illustration and a trigger to protect the environment.(Garrard, 2004), those are; First, Pollution, which is related to pollution in any form to the environment which causes the earth's imbalance. Pollution is very important to start the course of this discussion. Pollution is both the trigger and the strength for the discussion to progress. This motivation triggers a sense of sympathy and empathy to follow the course of the discussion in this first stage. In the beginning of the story, the condition of the earth, which is full of piles of garbage, is told. The high level of contamination causes humans to be forced to leave the earth. Pollution is also described not only on earth, but the earth's atmosphere is full of satellite waste.



Second, Position, is defined as the position or condition of the earth at this time. In the story structure or plot of a story, occupying a position in the rising action or the emergence of problems leads to a climax. Position has a double meaning because it is mimetic in nature to criticize the environment at that time. So the position can be analyzed inside and outside the work. In the film itself, it is positioned in the year 2815, where humans have left the earth for 700 years from 2110. Humans at that time left the earth with spacecraft that have high facilities and technology. The relationship between humans and the environment is almost non-existent and is being replaced by technology. Even walking humans use machines. Here's also how to communicate and other activities that are automatic. And this is also a concern in one of the antagonistic characters in the film, the vice-captain who is none other than a machine.

Third, Pastoral, in this case is defined as the condition of the earth that existed in the past, the era which human and animal plants lived in harmony and balance. This is also a little applied in this film. When Wall-e as the main character picks up trash, there are objects that are considered unique and according to him interesting, he keeps them for collection. Now there is a classic object in the form of a black and white television that shows human activities in the past. Inside that old television was a bit of a video where humans were happily dancing and singing, even holding hands. This has become very rare even in situations during a pandemic where we are far apart. The distance that separates and the direct interaction make the predictions in this film even more real. Limited direct interaction. And all of the IOT makes people fatter. The natural beauty, mountainous situation and pleasant atmosphere that used to exist now are not there and are of course caused by the human hand itself. And what makes this dramatic has been understood and realized is that we as humans are slowly killing ourselves slowly leading to massive destruction.

Forth, Wilderness, is defined as a natural earth with all its wild, natural environment both flora and fauna without human intervention, bio-genesis, industry and other technologies to grow and develop the wild and natural side of a plant, forest, animal and biota in it. In this film, there is a side that shows a wild side that apparently thrived when the earth was abandoned by humans for more than 700 years. Of course, one plant does not represent the wild side or wilderness, but the plant is a series of stories in which

a heroine robot named eve has the main mission to find a new planet at night with the specifications of plants growing on the planet.

Fifth, Apocalypse, is defined as mass destruction caused by human ignorance in maintaining the survival of the surrounding environment, such as biota in plant and animal water. In this film, climate change often appears which shatters the earth's surface, like a dust storm. Even leaving humans from the earth due to high contamination makes the talisman as if it had happened. The story in the film is told when the antagonist's role, namely the engine autopilot in the form of an ark steering wheel, seizes the plant seeds from which humans return to earth. However, because the auto pilot was given the first order by the president with the A133 mission not to return to earth because the earth's garbage cleaning operation failed to carry out.

Sixth, Dwelling, defined as a temporary shelter due to our original home disaster. Of course, in this film humans embark on a spaceship and for 700 years they live there. Dwelling also has a characteristic that the place we live in but temporarily is comfortable but in the heart feels something is missing and wants to return to the place of birth.

Seventh, Animalism, in this case is a human way of respecting animals, a way of human-animal interaction in which no human term is the center, but all living entities on earth are one unit, including the animals themselves. We often consume animals without being grateful; we even consume all the animals on earth. And this will certainly damage the eco-system if left unchecked without any concern for the continuity of fauna on this earth. Therefore, in the film Wall E, there is a satire scene that shows the close friendship between a trash robot and a cockroach. Animals that are usually considered disgusting and are usually found in trash cans. In the film there are no other animals except the cockroaches themselves. Animals are extinct and the following are plants on earth.

Eighth, Future the Earth , is here defined as the same imaginary act of being able to understand the earth as a fragile totality of which we are part of what we do not belong, or a biological system to produce the unlimited non-monetary wealth provided entirely by rational management, and that both scholars claim to be ecological. So in essence, in the future we hope for what kind of earth. In this film at the end of the story, there is a story that is not included in the film and is only an imaginary sketch of the author about

how humans make the earth a beautiful place. A place where there is water and fish that live as before.



Figure 3. 3 The Third Material. The Use of diapers as a planting medium with barcode 3

From this link, the service team provides an example of how to use diapers as a planting medium and at the same time implement stage 2. The first step in utilizing diapers waste is to first prepare diapers waste that has been piled up from yesterday to remove the smell of ammonia or put it in a bucket and be filled with water, second, separate the gel and sponge from the outer cloth, third mix with a ratio of 1: 1 between the waste diapers, soil, husk, and compost, then mix well. And the anti-drought planting medium is ready to use and lasts for 7 days without being watered again.

4. Conclusion

From the various stages of the Eco Digital Literacy activities above, it can be concluded that solutions to solve partners namely to carry out the processing of waste diapers into the planting medium. This resolves the problem of waste which has the highest level of environmental pollution than other types of waste or garbage. Partners also get benefits in social and health care, the economy increased due to drought did not have a negative impact on agriculture, and also the environment becomes more clean and reduced pollution of the environment that could create a channel of water could be much better, as well as the absorption of water in the season dry to be used in agriculture.

Acknowledgements

Thousands of thanks due to the dedication of expert who tends to secure their time and power to this research Mr. Syihabul Irfann, M.Hum, Mr. Akhmad Fatorni, S.S., M.Hum,

Mr. Deni Mustofa M.Pd.I, and Mr. Suprpto, M.Si. and The researcher would like to express his immense gratitude to both his supporters who have provided insight and expertise that greatly assisted the research

References

- Central Bureau of Statistics. (2019). Indonesian Environmental Statistics 2019. *Badan Pusat Statistik*, 1–224.
<https://www.bps.go.id/publication/2018/12/07/d8cbb5465bd1d3138c21fc80/statistik-lingkungan-hidup-indonesia-2018.html>
- Della Syahni. (2018). *Suarakan Bahaya Sampah Popok Sungai Brantas ke Kementerian sampai Istana Presiden*. Mongabay.Co.Id.
<https://www.mongabay.co.id/2018/01/28/suarakan-bahaya-sampah-popok-sungai-brantas-ke-kementerian-sampai-istana-presiden/>
- Garrard, G. (2004). Ecocriticism (the New Critical Idiom). In *London and New York: Routledge Taylor & Francis Group* (Vol. 53, Issue 9).
- KTI Limbah popok bayi*. (n.d.).
- Muhammad Fakhruddin. (2020). Lima Desa Mojokerto Deklarasikan Stop BAB Sembarangan. *Republika.Go.Id*, 1. <https://republika.co.id/berita/q623nv327/lima-desa-mojokerto-deklarasikan-stop-bab-sembarangan>
- Plomp, T., & Nieveen, N. (2007). *An Introduction to Educational Design Research*.
- Prof. DR. Lexy J. Moleong, M. (2014). *Unconfirmed 791047*.
- Saifulloh, A. I. (2019). *The Implementation of Ecocriticism Approach for Healthy Earth and strengthen the English Writing Skill of Literary Appreciation Class*. 01(02), 10–17.
- Segni, B. B., & Davidson, L. M. (2016). *RESEARCH ARTICLE THE PRACTICES OF TEACHING ENGLISH AS A FOREIGN LANGUAGE USING LOCAL CULTURAL CONTENTS Professor and Head , Department of English , Andhra University , Visakhapatnam BELACHEW BEYENE SEGNI , Dr . L . MANJULA DAVIDSON Research Journal of Eng. 4(4)*.