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Building The Environmental Care Culture in The Paperless Society Trend

Case Study at SMK Negeri 1 Suak Tapeh Banyuasin District, South Sumatera

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Abstract—This study aims to reveal how to build a culture of environmental care in the paperless society trend through activities at the school of SMKN 1 SuakTapeh. This research is a qualitative research, wherein this paper the researcher looks at the steps and efforts made by the teacher and students in order to reduce the use of paper. Paper as a reading medium, writing subject matter and communication was replaced with internet and online media. Data collection techniques in this study are interviews with teachers, TU staff and students how their opinions build environmental culture in the paperless society trend, and supporting and inhibiting factors in building a culture of the environmental care in trends in SMKN 1 SuakTapeh and activity documentation. From the results of the study, it can be seen that teachers, TU staff and students as well as school management at SMKN 1 SuakTapeh have used the paperless concept through learning and administration activities, realizing the importance of reducing paper use in order to reduce tree felling and save forests so that a culture of environmental care is

Keywords—culture; environmental care; paperless society

I. INTRODUCTION

This research originated from the news on liputan6.com (07/10/2007 Edition), Jambi Province received an Intangible Cultural Certificate from the Ministry of Education and Culture of the Republic of Indonesia (Kemendikbud). There are 10 Jambi cultural heritage that received the certificate, including a number of skills and habits of the Orang Rimba Jambi in the Hompongan Tradition (knowledge and habits of the Orang Rimbabehavior for the universe) as well as a video on how Orang Rimba Jambi lives modestly in the forest (Santoso, 2017).

According to Soedjito (2009), Indonesian ancestors were known to be rich in traditional knowledge that was full of experience in utilizing and conserving forest biodiversity. Traditional communities around the forest are known to live close to nature, they manage forest production well and preserve its ecosystem. In the past, elephants and tigers could live peacefully alongside the community. Life "mutual respect" existence (coexistence ecology).

It is necessary to study why in an increasingly advanced era when people call it a modern society, Indonesia's forests and their inhabitants are in the spotlight and anger of the world as reported by VOA Indonesia (Edition 01/07/2014). The Indonesian government is perceived as 'leaving' the tragedy of destroying large forest natural resources. This fact is in line with the official report of the Ministry of Forestry of the Republic of Indonesia, at least 1.1 million hectares or 2% of Indonesia's forests shrink every year (WWF Indonesia, 2017).

From 1990 to 2005 Sumatra's lowland forests were reduced by 40%. It is estimated that primary forests on the island of Sumatra will become extinct in 2015. Bioecologically the remaining extinct forest area is due to the difficulty of maintaining the continuity of the ecosystem function (Alikodra, et al, 2013).

Reducing the area and termination of natural habitats in the form of forest cover is a trigger for decreasing population size and adaptation capabilities of various groups of wild dwellings. Such conditions will increase the risk of extinction for small and isolated populations (Fabrig, 2003). Extinction is also seen in large mammals. For example for 15 years (1992-2007), the elephant population dropped by 35% from 3,000 to 5,000 to only 2,400 - 2,800. The Javan tiger has been extinct since 1930 and the Balinese tiger since 1970. There are only around 400-500 Sumatran tigers in five national parks (FWI / GFW, 2001). Sumatran and Javan rhinos are classified as critically endangered on the International Union for Conservation of Nature (IUCN).

In the international context, environmental issues are related to the global security system. The existence of a new phenomenon about security studies namely shifting the state security paradigm into human security. The reference object no longer speaks of state-centred state security but focuses on people-centred (Rengganis, 2016). Today's context, anywhere in the world we are being attacked by contemporary security issues such as increasing transnational crime in the form of drug trafficking, human trafficking, arms smuggling, money laundering, mass refugee movements, environmental damage, cybercrime and terrorism issues. (Bantoro, 2003).



According to Bannett (2003) that environmental damage in the form of climate change and the greenhouse effect has a close relationship with the security of a country. In line with that, quoted from the press release of the Ministry of Foreign Affairs (07/20/2010 Edition) the phenomenon of climate change, and the effects of greenhouse gases, have become international attention because they have a significant impact on human life. In the 4th Assessment Report of the Working Group II of the Intergovernmental Panel on Climate Change (IPCC) in 2007, it was stated that increasing GHG emissions would cause threats to food shortages and water resources, rising sea levels, increasing natural disasters and deadly disease outbreaks. These impacts are suspected to lead to threats to international security and peace.

One of the causes of the rate of damage (deforestation) of forests and contributors to carbon gas emissions is the pulp and paper industry. Unfortunatel,y the paper industry also lacks a good commitment to forest conservation and peatland management activities in Indonesia. Indonesia's pulp and paper industry is mostly carried out on peatlands which are drained on a large scale. No wonder Indonesia are known as the third largest contributor of greenhouse gases in the world. Recorded GHG emissions from the pulp and paper industry sector are estimated to be equivalent to 88 million tons of CO2 per year which comes from peat oxidation (Baffoni, et al, 2017).

The Indonesian government is currently in dualism, on the one hand trapped in the 'romanticism' of paper, quoted from the site kemenperin.go.id (Edition 12/12/2017), mentioning that until September 2016, foreign exchange earned from paper exports reached The US \$ 3 79 billion with the installed capacity of the pulp (pulp) industry reaching 10.43 million tons. This makes Indonesia the world's sixth largest paper producer in 2017. Researcher of the Indonesian Institute of Economic and Community Research (LPEM) of the Faculty of Economics and Business (FEB), Riyanto said, based on 2016 data at least the pulp and paper industry absorbed 1.49 million people. Furthermore, this 1.49 million people became the foundation of 4 to 5 family members. According to him, if this industry is disrupted, around 6 million people are disturbed by their lives (Afriyadi, 2017). On the other hand, the government realizes that the granting of permits for Industrial Plantation Forests (HTI) in primary forests to the pulp and paper industry is one of the triggers of forest destruction.

Intensive efforts to reduce the use of paper by the people in the world have been done a lot. Especially in the digital era and all automation, the use of paper has diminished. The role of paper has been replaced on all fronts. Starting from the concept of a paperless society which was introduced by Frederick Wilfrid Lancester in 1978. The Paperless society is a society in which communication between individuals in the form of paper is replaced by digital communication (Risal, 2017).

Lancester predicted that long before the internet was used by many people. The end of the 70s was the era of photocopying machines where a paper was at its peak. Now, the forecast of the University of Illinois professor, the United States is truly proven. We are in a paperless age, especially for reading, writing, and exchanging information. The digital era has driven the use of paper in offices to be minimal. The internet has replaced the role of paper as a medium for reading and information exchange (Hafizhatunnisa, 2017).

As if answering the issue of environmental issues, and the fear of humans in the destruction of the earth, the paperless concept is directly supported by many people. Not only do environmentalists also individual paper users. Andrian (2017) explains that producing paper involves millions of woods that contribute to increasing deforestation and forest destruction. Every 15 reams of A4 size paper will cut 1 tree. Every 7000 ex-throwing newspapers we read will spend 10-17 forest trees. The paper production also threatens the existence of energy sources on the earth such as fuel and water. To produce one kilogram of paper, 324 litres of water is needed, which means it takes a litre of water to produce 3 pieces of paper. In addition, every year the world produces more than 300 tons of paper, which means it needs 400 billion trees to be cut down (Kulkarni, 2016)

The concept of paperless has also entered the school, the 3rd Indonesian President BJ Habibie who offered a discourse to develop a paperless school when he was the keynote speaker on education conversion (between.news.com, 18/2/2014 edition. He explained that this model school relies on the use of rapidly developing information technology. The Indonesian nation must be prepared for discourse to change the pattern of educating children from conventional ways to digital by relying on the use of information technology advances that are growing rapidly. Information technology can benefit the educational process because now students at the school have mastered it. because if there are learning difficulties, students can surf the internet looking for answers.

Research on paperless influences in schools and companies on savings, efficiency and the environment has been widely carried out. The results of the study by Shonfeld&Meishar (2017) stated that it found the contribution to students in three ways: preparing students for the future; efficiency of learning; empowerment of students. The teachers presented a variety of innovative methods of using the laptops in class and described in a very similar structure of the lesson. The teachers described the difficulties involved in conducting a classroom instruction and emphasizing that despite the efficiency of the computer and its ability to support the teaching process, they used technology critically. Then the research conducted by Hawkins, Lovins&Lovins which was written at Natural Capitalism stated that according to the research done by the environmental paper network, the paper industry is the fourth largest contributor to greenhouse gas emissions in the United States. The same study found that an emission of 1.6 million tons of greenhouse gases could be prevented by cutting 10% offices in offices.

The paperless trend is beginning to erode the existence of print media. For example, the KompasGramedia publisher stopped eight products in its magazine and bulletin outlets. (newsbisnis.com, 12/20/2016 edition). According to AsmonoWikan, Executive Executive Director of the Association of Central Newspaper Publishers (SPS), there was a reduction in newspaper circulation, one of which was due to



the incessant multimedia development through portal sites on the internet and cellular networks.

In addition, the paperless society marked the shift of conventional newspapers to digital newspapers, printed books to internet-based e-books. The ability of the internet to reach all corners of the world at the same time and provide almost unlimited space for everyone to save, send or open access to that information to anyone. Especially with the introduction of World Wide Web (WWW) technology by Tim Berners-Lee, the internet can display 'pages' which not only contain text but also images, graphics, animations, and interesting and colorful sound that is capable of displaying multi-media services audio-visual (data, image and sound) (Awaluddin, 2009).

Based on the empirical study above, it is necessary to conduct research in order to reveal how to build an environmentally caring culture in the paperless society trend case study at SMKN 1 SuakTapeh, Banyuasin District, South Sumatra. According to Kurniawan (2016), caring and environmentally friendly culture can also be used as a means to help students in obtaining a set of values, motivation and commitment to the environment. In addition, through environmentally friendly education students can obtain the skills needed to identify and investigate various environmental issues and can contribute to finding solutions to these problems.

Campaigns or seminars that discuss ways to save Indonesia's forests, will not succeed without the real actions of the Indonesian people and the full support of the government. Minister AnisBaswedan (Satu.com, 27/2/2015 edition) stated how to build a reading culture in the School Literacy Movement which was originally a duty, developed into habits and eventually became a culture so it can be assumed to build a culture of environmental care through processes such as that.

There is a kind of paradox, the more educated a person is inversely proportional to his love for the environment. Often the educational output that is obtained actually makes it materialistic and businessman who exploits nature at will without thinking about the future of the country and future generations of children and grandchildren (Sinaga, 2016). The influence of age gives its own colour to the values and paradigm of society. In the past traditional communities only needed value in the form of trust to preserve their green trees and forests. The belief in the anger of the guarding spirits if it destroys the forest turns out to be able to prevent the sustainable forest from being nosy and greedy. Different from modern society. They no longer believe in mystical things. So that the prohibitions do not affect their intention to exploit the forest. Traditional society is felt to be more advanced because it puts forward synergy with nature rather than the ego to satisfy self-desire (Ngigi, 2013).

Damage to the function and carrying capacity of the environment in Indonesia needs to be addressed by all circles of society including among the academic community, students as the younger generation, teachers, educators and parents. Awareness and care for the environment need to be used as subject matter that is not only taught in the classroom but can be practised outside the classroom. The mental revolution is

needed by Indonesian human resources (HR) so that they can act real in caring for the environment (Yosari, 2007).

II. METHODS

This type of research is a qualitative research, wherein this paper the researcher looks at the steps and efforts taken in dealing with an event or phenomenon that is happening. Mulyana (2008: 145) states that qualitative research has the advantage of being easier when faced with multiple activities, more accurately if presented directly to the nature of the relationship between the researcher and respondent and is more able to adjust to the many influences on the value patterns faced. Qualitative methods depart from a phenomenological view, which researchers try to understand the meaning of events and their relationships with ordinary people in certain situations (Patilima, 2011).

Ahimsa (2012: 273) argues that phenomenology can be interpreted as knowledge about the image of what is seen by someone, what he feels and knows in his awareness and experience. This research is aimed at investigating the things done by researchers by conducting various activities in educational institutions and reviewing how to deal with the phenomena encountered.

Data collection methods used in this study were observations and direct interviews with resource persons namely teachers and students of SMK Negeri 1 SuakTapeh. Researchers conduct interview techniques by asking questions to obtain information relating to how to build an environmentally caring culture in the paperless society trend. In addition, the researcher also presented data from observations and documentation that the researcher obtained during the activity in accordance with the trend of the society paper that researchers, teachers and students have applied inside and outside the classroom. The data analysis technique used in this research is qualitative data analysis that follows the concept given by Miles and Huberman (1992) by realizing the main components including data collection, data reduction, data presentation, and conclusion drawing.

The process of data analysis begins with data collection. Then after the data is collected, the data is reduced. Data reduction is a process of selection, focusing and simplification and abstraction of existing data. The process of data reduction continues throughout the study. After the data is sorted, then the data is presented in the form of sentence form which is compiled logically and systematically referring to the formulation of the problem. In the final stage is to draw conclusions or verify data. Activities in the final stage are drawing conclusions on certain patterns or configurations. The results of the conclusions need to be re-verified in order to develop the accuracy of the research results.

III. RESULTS AND DISCUSSION

A. Interview Results

1) How do you think about building a culture of environmental care through the paperless society trend?



Researchers conducted interviews with several teachers and students how to build a culture of environmental care through the paperless society trend in school. One of them discussed here is the result of an interview with mother EntinKartini, S.Pd, who teaches Entrepreneurship subjects as follows:

"The learning process by reducing paper use such as not recording but through powerpoint, sharing in WA or transferring material in student files will make us not need to buy a lot of books, meaning that the less paper is used, of course

it reduces the forest trees that are cut down means we maintain balance nature means schools through teachers and students care about the environment".



Fig. 1. The Researcher with Mrs. EntinKartini, S.Pd (Source: Personal Document, 2018)

2) Research Interview with Teachers of SMKNegeri 1SuakTapeh

Interview with Mrs. SulistianahS.Pd who teaches mathematics subjects at the break which is supplemented by the opinions of other teacher friends as follows:

'Building a culture of environmental care can be done by reducing the use of paper because paper comes from trees. If we maintain the sustainability of trees, our forests are also sustainable".

The researcher also interviewed researchers with several students, among others, one of them was shown here, namely DovinGranat class XI TKJ. Dovin is an outstanding student who has won the Scientific Writing Competition so that he is not awkward to express his opinion as follows:

"When in school, teachers reduce the use of paper for example in recording so I really agree because besides saving we also reduce felling of trees because of paper from trees. I have read the news that many of Indonesia's forests have been deforested. So we care about our forests being threatened, we care about our environment. A real example, we used to save files in soft copy, not crossing out scribbled books and more".

Dovin also showed his blog posts that had won in competitions like



Fig. 2. Researcher Interview with Students in the Computer Network Engineering Laboratory at SMKN 1 SuakTapeh(Source: Personal Documents)

Based on teacher and student interviews, it was revealed that teachers and students of SMKN 1 SuakTapeh were aware that reducing paper use had contributed to forest sustainability. Forests function as earth's pores, where animals and plaques live. Safeguarding forests means that we contribute to saving the earth, environmental care must be instilled early and they agree that caring for the environment can be built through the paperless society trend in schools.

3) How to Build a Culture of Environmental Care Through The Paperless Society Trend?

Researchers conducted interviews with teachers, administration staff and students on how to build a culture of environmental care through the current paperless society trend. One of the researchers conducted an interview with Mr. DarmaSuryati, S.Pd, the Accounting Computer productive subject teacher who interviewed the researcher when she was guiding students in practice. The results of the interview with him are as follows:

"If I apply the concept of paperless ... for example teaching via powerpoint, I have the child send a task via email, or whatsApp. I told them to download additional material on Google and then save it in flashdish and then I checked there was no material they downloaded".

Then the researcher interviewed the Head of TU SMK Negeri 1Su Tapeh Mr Almiadi, S.Sos in his room. The results of the interview can be seen as follows:

"We now have a lot of TU staff to reduce paper use. As we know that SMK Negeri 1 SuakTapeh from the 2017/2018 school year has been using Android-based semester exams, and UNBK, then graduation announcements are also through WhatsApp media. Announcements to the teacher council also through WhatsApp media. Our school promotion process is also through web media. Absent, we have also used a FingerPrint. We often print using scrap paper. In fact, we can save costs with this paperless system, meaning we support environmental care".

Some activities are exemplified by Mr Almiadi, S. Kom, can be seen in the following pictures.



Fig. 3. Print with Second Paper(Source: Research Document)





Fig. 4. Finger Absent Student SMKN 1 Suaktapeh(Source: Research Document)

Next, the researcher interviewed the students, namely RidwanSyafitra as the chairman of OSIS at SMK Negeri 1 SuakTapeh. The interview results are as follows:

"Mrs Lisa often discusses the need for us to care for the environment through reducing paper in class. At that time, my mother told the OSIS when the Literacy activity would no longer write stories through books but through digital media so we did it through reading, telling stories through wayang media. Osis also introduced Mind Mapping. Even Mind Mapping we race every meeting class and must be from scrap paper ... remember you don't. It was from his idea that my mother, who I personally strongly agreed to because we did not throw paper and cut down trees in vain ... cie".

Some activities called RidwanSyafitra are seen in the following picture:



Fig. 5. School Literacy Socialization Storytelling With Paper Puppet (Source: Personal Document, 2018)



Fig. 6. Mind Mapping With Use Second Paper

Based on interviews with teachers, TU staff and students, it turns out that there have been many activities that are in line with the concept of paperless society that is currently trending in the SuakTapeh State Vocational School indirectly making school residents realize that this activity is 'smelling' good because we care about the environment.

4) Matters What Supports and Inhibit The Application of The PaperlessSociety at SMKNegeri 1 SuakTapeh

Researchers conducted interviews to find out what things were supporting and inhibiting the application of the paperless society at SMKN 1 SuakTapeh. The researcher conducted an interview with Mr Efriansyah, S.Kom. as Head of Multimedia Study Program at SMKN 1 SuakTapeh. The results of the interview with him are as follows:

"Sis What is it??. Confused, if I teach practice means not using paper but I try to make students not take notes because if there are important things they have to write on their laptop. Being an obstacle is the difficulty sometimes students do have to take note of important things on pape / photocopying because the steps they often forget are job descriptions. The thing that supports this paperless society activity is that our school's computer and wifi facilities are there about internet browsing, students are easy to do.

Interview with a student named Sahardi Student of Class XI TKR Department, which researchers did while consulting apprenticeship reports. The results of the interview are as follows:

"We don't have Bu's laptop," so the teacher always told us to take notes in books sometimes because they were pursuing material, the teacher told them to copy. If erroneous assignments such as an apprenticeship report must be repeated but the mother may be used paper. It's delicious that Mrs Lisa has taught us to use the Mind Mapping concept so if we study chemistry we don't take too many notes but understand. Unfortunately the teacher hasn't done much".

Based on interviews with teachers and students, there are several factors inhibiting the application of concepts where there are still many teachers applying the method of recording or photographing coffee. Actually the paperless society concept does not eliminate the existence of paper but reduces the amount. There are so many methods that can be applied to support this concept such as the application of mind mapping, printing used paper, storing files on a laptop, sending tasks digitally and using internet-based media to complete the subject matter

B. Environmental Care Cultural Activities Changes the Old Way to the Paperless Society Trend

Researchers look for data in the form of documentation through activities that have been carried out by schools and "intentionally", implementing activities together with students to foster a culture of environmental care by applying the concept of the paperless society trend.

1) Conducting School Exams and Computer or Android-Based Semester Exams

SMKN 1 SuakTapeh since 2017/2018 academic year has applied paper reduction through online examinations along with processing and submitting values without printing. This is seen in the following figure:





Fig. 7. Differences in 2016/2017 Academic Year Still Doing Paper-Based Exams 2017/2018 Academic Year based on online and Android (Source of research documents)



2) Announcement of Graduation Through Online Media

Announcement of student graduation so far through newspapers and notification letters to parents but this year the announcement of student graduation through media online (Whatsapp). As shown in the following picture.





Fig. 8. Differences in 2016/2017 Academic Year Class XII Exam Announcement through 2017/2018 Academic Year Newspaper through WhatsApp Media (Source: Research Document)

3) Maximizing Used Paper

The use of paper in a school environment cannot be avoided, even the highest paper use activities are dominated by schools and offices. Even so, paperless usage can be reduced. The thing that researchers have done with students is to use waste paper into a storybook that supports the School Literacy Movement (GLS) of SMKN 1 SuakTapeh and introduces the manufacture of waste paper into recycled materials.



Fig. 9. Making Children Storytelling Book With Recycle Paper Paper Product Student



Fig. 10. Competition Mading 3D With Use Recycle Paper Product Student

4) Changing the Habits of Consuming Snacks from Paper or Plastic into a Leaf Wrap

Students are accustomed to buying snacks in the canteen or school cooperative where the package is paper or plastic Researchers invite students to make food wrapped in leaves and campaign with the school community and through social media. As shown in the following picture.



Fig. 11. Making Children Storytelling Book With Recycle Paper Paper Product Student CampaigneTo Teacher Abaut Snack Leaf Banana Wran



Fig. 12. Activities Making Snack Leaf banan Wrap, Then Upload in Media Social

5) Making Learning Media / Props from Used Paper

The researcher invites the teacher to use used paper that is no longer used to become a scrapfbook, fairy tale book or pop up a book as a learning media, then it implements in the classroom. The results achieved from this activity are shown in the following picture:



Fig. 13. Researchers Make Scraft Book from Paper in Learning Media Media Competition Activity 2018 (Source: Research Document)

6) Changing Making Practicum Reports from Paper-Based to Video Blogs

Researchers have been implementing paper-based practicum reports, the researcher changed the paper-based practicum report format to video, the goodness of this method is cheaper, not vulnerable to damage, will not be wet, efficient also more efficient because the video can last a long time, save chemicals (not always practicum) and used repeatedly.



Fig. 14. Student Video Blog Report Practicum (Source: Researcher Documentation, 2017)

Based on the activity data above, the researcher saw that the implementation of the paperless concept can make students care about the environment. Character education is very necessary for students to foster a good culture in this case the culture of environmental care according to According to Minister Muhadjir Effendi (Web Ministry of Education and Culture, edition 12/13/2016) environment-based learning, must foster character, competence, and problem solving. Schools can bring the world to class and bring class to the world. It is expected that if students live their days with the habit of caring for the environment, the character of environmental love will take root in him.

Based on interviews, and observations of activities carried out by researchers, then obtained indicators of the achievement of environmental care culture through table 1 below:



Table 1 Indicators of Achievement of Attitude of Care in Schools in the Paperless Concept (Source of Adiwiyata School Guidebook, 2015)

| No | Indicator | Fulfiled |
|----|---|--------------|
| | | Yes No |
| 1 | School routine activities related to environmental care culture | |
| 2 | The spontaneous activities of school citizens who show a culture of environmental care | \checkmark |
| 3 | Forms of the exemplary teacher in accordance with the environment | $\sqrt{}$ |
| 4 | Learning process activities involving a culture of environmental care | \checkmark |
| 5 | Active learning process so that students directly practice environmentally caring culture | \checkmark |
| 6 | Students understand the character of caring for the environment | $\sqrt{}$ |
| 7 | Having knowledge related to environmental care | |

(Source: Nopilda, 2018 (data processed))

IV. CONCLUSION

Building a culture of environmental care can be done by applying paperless usage. The paperless society concept does not eliminate paper but reduces paper use by replacing the paper's function as reading The material, subject matter material, correspondence and administrative media with digital and online media. The use of paper will cause deforestation to meet the needs of consumers of paper also decreases. This can foster an environmental care attitude from the younger generation. Environmental awareness can start from school with a variety of real activities that are integrated in teaching and learning activities.

V. ADVICE

It is hoped to build a culture of environmental care by applying paperless usage to be disseminated more through campaigns or "enlivened" on the social media of students and teachers so that pride arises in participating and acting in reality.

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