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Cultivating Care and Love for The Environment Through Ecobrick Making

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Abstract: Schools are the main and strategic place in instilling values or caring attitudes in conditions of recovery from the Covid-19 pandemic. MI An-Nur, Cirebon City, is an Islamic Elementary School or equivalent to an Elementary School, which is located on Jl Kutagara, Pekalipan District, Cirebon City. The poor condition of the trash cans and the lack of availability made students dispose of garbage incorrectly according to the type of waste. The habit of throwing garbage in one place without sorting it based on the type of waste is still not visible from the habits of the students. Therefore it is necessary to cultivate an attitude of care and love for the environment through making ecobricks for students. The purpose of this activity is to introduce and provide training and habituation of ecobricks to students so they care about and love the environment so they know how to process waste and not litter. The method used is Qualitative Research which intends to understand the phenomena experienced by utilizing natural methods. The research was carried out at the MI AN-NUR school, Cirebon City, Jagasatru District, which was carried out for 40 days.Data collection techniques used are in the form of observation, interviews (interviews), and documentation.Primary data in this research, in the form of data from student observations in introducing ecobricks and making ecobricks simultaneously accompanied by the teacher and taking photos as evidence of research implementation. Data analysis techniques in this study are data collection, data presentation, data reduction and conclusion/verification. The results of the evaluation can be concluded that the level of students' understanding regarding training and habituation in making ecobricks to instill an attitude of care and love for the environment is categorized as moderate.

Keyword : Ecobricks, Caring Attitude, Love for the Environment, Elementary School Students

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Introduction

A clean and healthy environment is an environment that is free from various impurities such as dust, garbage and odors. Because the process of disease transmission is caused by microbes, a clean and healthy environment also means that it must be free from viruses, pathogenic bacteria and various disease vectors. A clean and healthy environment must also be free of harmful chemicals. However, cleanliness and environmental health have always been the subject of public discussion for a long time. Cases related to environmental hygiene and health problems also increase every

year. Many human activities have a negative impact on environmental quality, one of which is poor management of waste and waste. Waste is part of something that is not used, or something that must be disposed of, and usually comes from human activities. Human activities that pollute the environment by littering can reduce environmental cleanliness.

Based on the Minister of Public Works Regulation No. 21 of 2006 concerning national policies and strategies for the development of a waste management system, the vision is healthy settlements that are free of waste (Regulation of the Minister of Public Works No. 21/PRT/M, 2006). In order to achieve this vision in the future, the missions that must be carried out are reducing landfill waste in the framework of sustainable waste management, increasing the range and quality of services for the waste management system, empowering the community and increasing the active role of the private sector, increasing management and institutional capabilities in waste management system, mobilize funds from various sources for the development of waste management and enforce the law and complement the laws and regulations to improve the waste management system.

Waste is material that has no value or is not valuable for its ordinary or primary purpose in the manufacture or use of goods which are damaged or defective in manufacture, excess material, rejected or discarded. Waste is material that is disposed of or wasted from sources originating from human activities or natural processes and still does not have economic value. One of the factors that influence the increase in the amount of waste is the increasing number of residents in an area. Population growth will add to the burden, which is not easy for a city in preparing new infrastructure.

According to the Law of the Republic of Indonesia Number 18 of 2008 concerning Waste Management, waste is the residue of daily human activities and/or natural processes in solid form (Ministry of Health, 2008). So that if the waste problem cannot be managed properly it will cause a decrease in environmental quality.

Waste management is a problem that this nation has never been able to solve. According to the Director General of Garbage, Waste and B3 (Hazardous and Toxic Materials) Management from the Ministry of Environment and Forestry, Tuti Hendrawati Mintarsih, the total amount of Indonesian waste in 2019 will reach 68 million tons, and plastic waste is expected to reach 9.52 million. tons or 14 percent of the total existing waste. Based on data from Jenna Jambeck (2018), a waste researcher from the University of Georgia, Indonesia is ranked second in the world for producing 187.2 million tons of plastic waste after China, which reached 262.9 million tons. Not to mention, plastic waste in Indonesia is the main source of accumulation of waste weight, moreover plastic is decomposed within 1 millennium or around 1000 years.

Garbage can be divided into organic and inorganic waste according to the chemical substances it contains. Organic waste is waste that can be broken down by microorganisms or that can decompose, such as food waste, leaves, vegetables and

fruits. Meanwhile, inorganic waste is waste that takes a very long time to decompose, and is even difficult to decompose by microorganisms, such as plastic, glass and marble. The products that can be produced from organic waste are organic fertilizers which are very beneficial for fertility in plants, while the products that can be produced from inorganic waste are handicrafts such as bags, wallets, mats and many more.

Plastic waste is the waste most disposed of by the public because many people use plastic for their daily needs, be it individuals, shops or large companies. Throwing plastic waste into water and soil has also become commonplace, it causes environmental damage, because plastic waste is made from inorganic materials.

Plastic is made from petrochemical substances that are not suitable for the environment around us. Scientific research shows that this chemical is toxic to humans. Plastic that is scattered, burned, or thrown away will decompose into toxic chemicals. Over time, these chemicals dissolve into the soil, water and air, where they are absorbed by plants and animals. In the end, these substances will cause birth defects, hormonal imbalances, and cancer (Pavani, P. and Rajeswari, 2014). If this plastic waste is carried into rivers or into the sea, it will cause damage to the ecosystem in the area.

This management can be done with the 3 R approach (Reduce, Reuse, Recycle). Reduce means efforts that focus more on reducing consumptive lifestyles and always using "not disposable" which is environmentally friendly and prevents waste generation. Reuse means efforts to utilize waste material through repeated use so that it does not immediately become waste, without processing means reusing waste that has been sifted for the same function or another. While Recycle means that after the waste has to leave the home environment, it is necessary to sort and utilize it from the home environment.

One way to deal with plastic waste is through the ecobrick method or the utilization of waste with plastic bottles as media. Ecobrick comes from the words eco and brick which means environmentally friendly brick which is an alternative to conventional bricks in constructing buildings. Therefore ecobricks are plastic bottles filled with non-biological waste, namely plastic.

Ecobrick is a creative effort to manage plastic waste into useful objects, ecobrick can reduce pollution and toxins caused by plastic waste. The function of ecobrick is not to destroy plastic waste, but to extend the life of these plastics and process them into something useful, which can be used for human benefit. The goal of ecobricks is to reduce plastic waste by using plastic bottles and recycling them into something useful.

Ecobrick is a collaborative technology that provides a no-cost solid waste solution for individuals, households, schools and communities. Ecobrick is another way to utilize this waste besides sending it to TPS. This method is utilized by the school community of one of the schools in Cirebon, namely MI An-Nur. With ecobrick plastic

waste will be stored safely in the bottle, so it doesn't need to be burned, piled up and buried.

Teachers and students at MI An-Nur are very concerned about the state of our environment, especially TPS Kopi Luhur in the city of Cirebon. This makes teachers and students eager to keep the environment clean and reduce plastic waste in the school environment by bringing bottles and food containers from their respective homes, composting organic waste, and making ecobricks..

Ministry of Public Works of the Republic of Indonesia (2012) said that waste management can be carried out using the 3R approach (Reduce, Reuse, Recycle). However, MI An-Nur developed it into 10 R, namely, Refuse, Reduce, Refill, Reuse, Repair, Recycle, Resell. Replant), Rot (decompose/compost), Replant (replant), Residue (remaining waste). By routinely educating students and being disciplined in carrying out 10 R, the MI An-Nur school environment is free of garbage and passes the Cirebon City level Adiwiyata in 2022.

Several previous studies have conducted research in the field of ecobricks as conducted by Apriyani et al., (2020) at Khalifah Kindergarten, Samarinda City, utilizing plastic waste to become ecobricks in order to prevent the accumulation of plastic waste and early education for kindergarten students with counseling methods and the practice of making ecobricks. In addition, the research conducted by Aziz et al., (2022) that ecoliteracy corner through the use of ecobrick partners can be made to the maximum, so that program achievement reaches 100%. then the research conducted by Ikhsan and Tonra, (2021) States that this activity of introducing ecobrick at school needs to be done to increase students' understanding and awareness so they are able to process waste into something more useful.

However, based on the research above, it has not examined the making of ecobricks which are associated with affective attitudes, so this research will examine the training and practice of making ecobricks to train caring attitudes and love for the environment.

Methodology

This research program uses qualitative, according to the method (Sugiono, 2016) qualitative research is a research method used to examine the conditions of natural objects where the researcher is the key instrument.

This qualitative research is research that intends to understand the phenomenon of what is experienced by research subjects such as behavior, perceptions, motivations, actions, holistically, and by means of descriptions in the form of words and language, in a special natural context and with using natural methods.

In this study using an approach through descriptive method. This descriptive method is a research method used to describe problems that occur in the present or are

ongoing. Aims to describe what happened as it should at the time the research was conducted.

The research was carried out at the MI AN-NUR school, Cirebon City, Jagasatru District, which was carried out for 40 days from February to March 2023. The activities carried out were in the form of getting used to recycling plastic waste into ecobrick as a form of cultivating an attitude of care and love for the environment. And also MI AN-NUR implements 10 R including, (1) Refuse: Refuse, (2) Reduce: Reduce plastic wrap (3) Refill: Refill (4) Reuse: Reuse (5) Repair: Repair (6) Recycle: Recycle (7) Resell: Resell (8) Decay/Compost (9) Replant: Replant (10) Residue: Leftover Waste.

Data collection techniques used are in the form of observation, interviews (interviews), and documentation. Observations were made by researchers directly in the field to see how far the students' caring and loving attitude towards the environment in making ecobricks. Researchers used semi-structured interviews with teacher and student respondents. The documentation used by researchers is in the form of photos and videos of students making ecobricks.

Sources of data according to (Sugiono, 2016), namely, primary data and secondary data. Primary data in this research, in the form of data from student observations in introducing ecobricks and making ecobricks simultaneously accompanied by the teacher and taking photos as evidence of research implementation. Secondary data comes from journals (both nationally and internationally reputable journals) and various books related to variables in research. The steps for data analysis in this research are 1) data collection, 2) data reduction, 3) data display, 4) conclusion drawing/verification.

Result and Discussion

The inculcation of care and love for the environment at MI An-Nur, Cirebon City is carried out in several ways, including by recycling plastic waste into ecobrics. The inculcation of a caring attitude and love for the environment at MI An-Nur Cirebon City was carried out using the problem solving method. Where students at MI An-Nur Cirebon City are presented with facts about the surrounding environment which has a problem with waste accumulation, then students and teachers hold discussions on handling waste problems, the next step is that the teacher guides students to make ecobrics to deal with non-organic waste problems and explains the benefits of making ecobrics to students.

Prior to the habit of dealing with waste through the manufacture of ecobrics, it was known that the amount of plastic waste per day could reach 15,600 grams or around 15.6 kg which included plastic packaging waste, bottles or plastic cups, etc. After this habituation was carried out and carried out, the amount of plastic waste dropped dramatically to around 30% or around 4680 grams or 4.68 Kg. Even after the habituation activities were carried out by the whole class there was almost no

plastic waste. This shows that the inculcation of a caring and loving attitude to the environment at MI An-Nur Cirebon City has received enthusiasm from students, and students also have responsibility for the waste they have both at school and at home.

In the future, the ecobrics that have been made by MI An-Nur students in Cirebon City will be made into functional objects such as chairs and others. The following is documentation of the plastic waste management habituation activities at MI An-Nur, Cirebon City.

No	Activity	Documentation
1.	Environmental waste emergency education	
2.	Garbage conditions in schools before habituation	
3.	Garbage sorting activities	
4.	Education and discussion about waste problems in the school environment through the 10 R activities	

5.	Making ecobrics	
6.	he condition of school waste after habituation	 Empty school trash can  Recyclable waste around reduced to 30% only.

As representatives of the future society, students must be equipped with the value of caring for the environment from an early age. Therefore, in an effort to preserve the environment, a sense of concern for the environment is needed (Azza Nuzullah Putri, 2021). As future representatives of society, students must have the value of caring for the environment from an early age. Therefore, to protect the environment, it is necessary to care for the environment.

Many people who don't care don't even have the awareness to protect and maintain the environment. The attitude of humans who do not care about protecting and caring for the environment is humans who do not apply good values in all aspects of life. In 2006, environmental education was carried out through the adiwiyata program for primary and secondary education. The program encourages school members to have culture and character, especially caring for the environment by protecting it (Fathurrahman, 2022 ;Adianti and Ayuningtyas, 2020; Palupi et al., 2020).

Lack of awareness and knowledge about the utilization of plastic waste and household waste that can be recycled. By converting plastic waste into something that

can be reused like bricks, it is environmentally friendly to help reduce environmental pollution. Plastic waste that is turned into eco-bricks can be used to make furniture, gardens and buildings, as well as art through reprocessing and new ideas for making eco-friendly bricks (Adhik Audy Alliffiantauri, 2022; Selintung et al., 2021). Eco-brick is an environmentally friendly brick that was developed as a solution for processing plastic waste in a simple way (Wiwik Lestari, 2022).

Based on related test results, before the habit of processing waste by making ecobrics, it was found that the amount of plastic waste produced each day could reach 15,600 grams or around 15.6 kilograms, including plastic packaging waste, plastic bottles or cups, etc. After doing this habit and doing it, the amount of plastic waste dropped dramatically to around 30% or around 4680 grams or 4.68 kilograms. Even after the routine activities of the whole class, there is almost no plastic waste. This shows that the attitude of caring and loving the environment at MI An-Nur Cirebon City is positively responded to by students who are also responsible for the waste they produce at school and at home.

Conclution

Implementation of training and practice of making ecobricks for MI An-Nur students to practice caring and love for the environment is carried out offline by coming to school in person. All activities run smoothly according to a predetermined schedule. Implementation of training and practice begins with the delivery of materials on types of organic and non-organic waste, waste processing methods, processing plastic waste into ecobricks in the form of bottles. The training and practice activities end with the giving of rewards and rewards to find out the level of instilling a caring attitude and love for the environment. The results of the evaluation can be concluded that the level of instilling a caring and loving attitude through making ecobrick is categorized as medium. With this activity, it is our great hope that students can implement an attitude of care and love for the environment.

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