

## **RAISING AWARENESS OF PLASTIC WASTE BY MAKING ECOBRIKKS IN ELEMENTARY SCHOOLS**

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### **ABSTRACT**

As one of the Adiwiyata schools in Banda Aceh city, SDN 27 Banda Aceh is very focused on waste management in the school environment. Teachers invite students to minimize the use of waste, especially plastic waste which takes a very long time to decompose. Teachers invite students to the Final Disposal Site (TPA) for waste located in Gampong Jawa, Banda Aceh City to see firsthand how workers at the TPA manage waste starting from sorting waste according to the types of waste and processing it into organic fertilizer, biogas, or waste that can be resold such as bottle waste, plastic waste, cardboard, cans, iron and others. In the Real Action activity, students collect waste in groups and then sort it according to the type of waste. The main focus of this project is on plastic waste. The plastic waste that has been collected is cleaned, dried and cut into small pieces and then put into plastic bottles until full and solid. This activity is known as Ecobrick. After all the bottles are full, they are glued, painted and covered with plywood or board on the top side to be used as a table and covered with cloth as a table mat to make it more attractive. The work that has been made is used as a table in the reading corner in the classroom.

**Keywords:** *Ecobrick, Plastic waste*

### **INTRODUCTION**

Waste is a classic problem that we encounter in various regions in Indonesia. Lack of public knowledge and concern about the dangers of waste results in the accumulation of waste which causes discomfort to the community itself. In addition, waste can also pollute the environment. Such

as flooding, blocked water flow and causing many diseases. Therefore, education is needed from childhood, it is hoped that the younger generation can minimize waste in the surrounding area.

Plastic waste and the like are types of waste that take a very long time to decompose, it takes tens to hundreds of years for plastic waste to decompose. SDN 27 Banda Aceh is one of the schools in the city of Banda Aceh which has around 350 students. With this number of students, the potential for waste is quite a lot in the school environment, including plastic waste. However, SDN 27 Banda Aceh is also a school that has achieved achievements in the field of school cleanliness, namely the Adiwiyata school. This is because waste processing in schools is quite effective so that the school environment remains clean.

The target of the activity is 32 6th grade students (17 female students and 15 male students). The purpose of implementing activities as a form of increasing concern for waste is as follows:

1. Raising students' awareness of waste concerns both at school and in the surrounding area
2. Taking real action as part of a sustainable lifestyle to reduce plastic waste
3. Creating a character profile of Pancasila students who are independent, creative and care about the environment.

To process plastic waste in the school environment, an effective handling method is needed to break down or utilize it as a useful material. By thinking critically, students can find ideas or concepts so that the waste around them can be processed into useful materials in everyday life. One example is by doing plastic waste recycling skills activities. In this activity, students can learn about the importance of recycling plastic waste, reducing waste as well as an activity in developing handicraft skills. With teacher guidance, students can understand that waste can be turned into useful objects through innovation and creativity.

The implementation time of the activity is 3 months, namely in March the first and second weeks the Exploration stage is carried out, the third and fourth weeks the Contextualization stage is carried out and in April and May the Real Action is carried out.

Direct observation was carried out at the Final Waste Disposal Site located in Gampong Jawa, Banda Aceh City. While the Real Action was carried out at SD N 27 Banda Aceh (Jl Twk Hasyim Banta Muda, Gampong Mulia, Kuta Alam, Banda Aceh).

## **METHODS**

This program uses qualitative, according to (Sugiyono,2016) qualitative research method is a research method used to research on natural object conditions where the researcher is the key instrument. This qualitative research is a research that intends to understand about the phenomena about what is experienced by the research subjects, for example behavior, perception, motivation, actions, holistically, and by means of description in the form of words and language, in a special context that is natural and by utilizing various natural methods. In this study, an approach is used through the descriptive method. This descriptive method is a research method used to describe problems that occur in the present or are ongoing, aiming to describe what is happening as it should be when the research is conducted.

## **RESULTS AND DISCUSSION**

By making ecobricks, students can find solutions to managing plastic waste around them as a form of gratitude for helping to protect nature. In addition, students can utilize waste from Schools to be transformed into creative works so that they can be used for useful things in everyday life.



**Picture 1.** Utilization of Ecobricks as tables in the reading corner in class

a) Exploration stage

Students watch a learning video about waste. This activity aims for students to see an overview of the waste problems that exist around them. Conducting questions and answers and discussions related to waste problems. Furthermore, students are invited by the teacher to see directly in the field, namely visiting the TPA (Final Disposal Site) of waste located in Gampong Jawa, Banda Aceh City. Students interview officers regarding the volume of waste that comes in every day and also interviews related to

waste processing at the TPA.



Picture 2. Students watch a video about waste



**Picture 3.** Students interview TPA officers. Direct interviews with officers at the TPA regarding data on the volume of waste received each day and interviews related to the waste processing process at te TPA



**Picture 4.** Students observe a plastic bottle waste bank located at the Gampong Jawa TPA



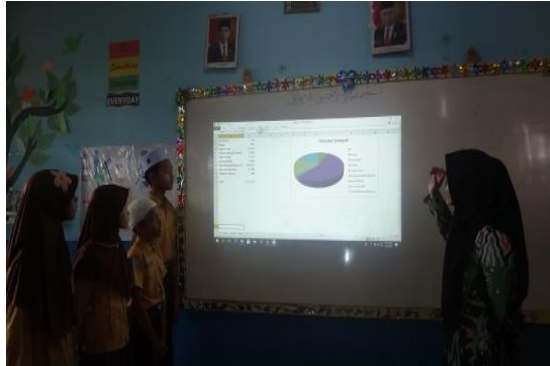
**Picture 5.** Reviewing the final waste disposal site in Gampong Jawa directly

b) Contextualization Stage

Contextualization means the process or action of understanding or linking learning materials that have been studied with real conditions in the field. In this activity, students link data that has been obtained in the field with IT-based learning. After obtaining data in the field related to the volume of waste that comes in every day, students enter the data into a table in Microsoft Excel. After that, they do a group presentation and other groups give responses. The next IT-integrated learning is that students are assigned to make a poster about how to wisely manage waste and then demonstrate it to other students at school.



**Picture 6.** Integration of IT in mathematics learning



**Picture 7.** Presentation related to the volume of waste that enters the TPA in the form of a pie chart



**Picture 8.** Making a poster to care about waste using the Canva application



**Picture 9.** Demonstrating the poster that has been made

c) Real Action

Students in groups collect waste and sort it according to the type of waste. Plastic waste is the most common type of waste found. So the focus of the real action carried out is to process plastic waste into something useful. The sorted plastic waste is then cleaned, dried and cut into small pieces so that it is easy to put into plastic bottles. The bottle is filled with plastic pieces so that it becomes full and solid. This process is called Ecobrick. Ecobrick is one solution to utilize plastic waste so that it can reduce plastic waste around.



**Picture 10.** Activity of collecting waste at school during break time



**Picture 11.** Students sorting waste according to type



**Picture 12.** Activity of putting plastic waste into bottles



**Picture 13.** Gluing bottles that are already filled with plastic



**Picture 14.** Painting Ecobrick

## **CONCLUSION**

The activities that have been carried out aim to foster awareness of waste since childhood. This is in line with one of the topics of the Pancasila Student Profile Strengthening Project, namely the theme of Sustainable Lifestyle. With the real actions that have been carried out, students are able to sort the waste to be processed and are able to create creative products from plastic waste that are useful and have sales value. This activity can also shape the character of students, namely being pious to God Almighty (morals with nature also protect the surrounding environment), mutual cooperation, independence, creativity, and critical thinking.

### **Obstacles faced and how to overcome the problem**

1. To make ecobricks requires a lot of plastic waste that must be collected so that it takes quite a long time to collect the raw materials in the form of plastic waste. The way to overcome this is for each class to create a team that will be responsible for collecting plastic waste.
2. When inserting plastic pieces into bottles, it requires strong force to



press the plastic so that the bottle is denser and stronger. The way to overcome this problem is to function the class association that has been formed so that it can involve the participation of parents to help the process of making this ecobrick.

**Recommendation:**

1. For Teachers

Teachers in educational units are expected to be able to link each subject matter with waste management so that students' characters who care about waste are formed through daily habits.

2. For Other Schools

Ecobrick is an alternative use of plastic waste around us. Thus, this method can reduce environmental pollution. Schools can make other innovations from plastic waste by providing special training and guidance related to the implementation of these activities so that they can create useful and valuable products.

3. For Students and the Community

Educating about reducing the use of plastic waste in everyday life by bringing their own shopping bags instead of plastic, using drinking bottles or tumblers, using lunch boxes instead of styrofoam or plastic rice wrappers and the like.

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