



School Based Waste Bank and the Efforts to Improve Student Environmental Awareness

Zudha Rahma Nur Azizah^(✉) and Taat Wulandari

Faculty of Social Science, Universitas Negeri Yogyakarta, Yogyakarta, D.I., Indonesia
zudharahma.2020@student.uny.ac.id, taat_wulandari@uny.ac.id

Abstract. Efforts to increase environmental awareness of natural sustainability can be carried at all school levels. Awareness of a healthy and clean environment is very useful for students and other school members. The Adiwiyata school award is intended for schools that have succeeded in carrying out the environmental care and culture movement in the school area. One form of environmental care program at Adiwiyata school is the management of a waste bank. This article intends to document the waste bank program initiated by the Adiwiyata school at SMP N 2 Magelang as a form of environmental awareness for student. Waste bank is defined as a place used to collect sorted waste. The selection of waste is intended to make it assist in dealing with the management of the generated waste. Integrated waste bank program by 3R (reduce, reuse, recycle) so that it can teach student from sorting to utilizing waste. All school residents participate directly, both teachers and students as customers. The concern of students can be seen from the various activities that have been carried out in processing waste and providing value for the existing waste. The use of waste has been integrated in the learning process, so that all students can fully implement it. The implementation of the program will provide a respectful behavior towards waste and at the same time reduce it. Success in increasing environmental awareness needs to be reviewed continuously by the school so that it can provide more significant changes (**Abstract**).

Keywords: waste bank · adiwiyata · environmental awareness

1 Introduction

Efforts to increase students' environmental awareness have attracted a lot of attention from schools in Indonesia, the article is that until now more and more schools are adopting environmental education. Environmental education is an alternative in minimizing environmental damage caused by human activities. Student concern can be built from habits that are applied through the program that has been launched. In fact, the care that has been carried out in the school area is expected to be embedded in students as a provision for life in the real environment. Environmental education is a process to build a human population in the world who are aware of and care about the total environment and all the problems related to it, and a society that has the knowledge, skills, attitudes

and behavior, motivation and commitment to work together both individually and collectively in order to solve current environmental problems and prevent new problem [1].

Coinsiding on June 3, 2005 The Ministry of Environment (LKH) and National Education work together to make an agreement for environmental education programs. Moreover, the policies formulated are essentially used as school directions in implementing and developing environmental education in the Indonesian region. This program is believed to be an effort that can be made to instill awareness and understanding in preserving the environment from an early age. Caring for the environment is an attitude or action that always strives to be able to repair damage to the natural environment around it, and is able to develop efforts to repair natural damage that has occurred [2]. Referring to the concept of environmental care character according to the Ministry of Education, attitudes and actions that seek to always prevent damage to the surrounding natural environment and develop efforts to repair the natural damage that has occurred. In following up and collaborating to encourage the implementation of sustainable environmental conservation for the benefit of future generations, the Ministry of Environment has started to launch it through the Adiwiyata program.

Adiwiyata is a school program with the goal is to create a school environment conditions as a place of learning for school residents to encourage environmental conservation and sustainable development to lead to environmental care and culture. Referring to the Regulation of the Minister of Environment and Forestry of the Republic of Indonesia Number 53, that Adiwiyata is an award program given by the government, provinces, and districts that have succeeded in carrying out environmental care and cultured movements in schools. The intended movement is a conscious, voluntary, networked, and sustainable collective action carried out by the school in implementing friendly behavior towards the surrounding environment. Many schools in Indonesia have adopted Adiwiyata schools, there are 333 schools that won the National Adiwiyata award and 101 schools won the Adiwiyata Mandiri in 2019. This is certainly not the ultimate goal, but it is hoped that it can be used as a reflection of commitment in the world of education to be able to produce students who are environmentally concerned for the progress of Indonesia in the future.

One of the programs as a form of increasing students' environmental awareness that can be implemented in schools is the Waste Bank. Waste banks can be used as an alternative in various problems, especially the generation of waste that is increasing every day. Based on SISN data, the amount of waste heap in Indonesia reaches 34 million tons produced annually, with the highest level of suppliers coming from East Java Province at 5.7 million tons and followed by Central Java Province at 4.6 million tons [3]. Therefore, it is very important for waste banks to be implemented in various elements, especially in the education sector as a form of answering the waste problem. The implementation of waste banks in schools is integrated by 3R (reduce, reuse, recycle) students are taught from the selection of waste according to its classification, the habit of reducing waste to processing waste into more useful goods so that it can extend the time before turning it into waste again. Waste management is carried out from controlling waste generation, collection, sorting, processing to the final disposal process.

SMP 2 Negeri Magelang is one of the schools that has adopted Adiwiyata to support the environmental care movement, especially in the school area. Various forms of school

commitment to foster a caring attitude are reflected in the waste bank activities that have been formed. The Waste Bank of SMP N 2 Magelang has made many achievements as evidenced by various competitions organized by the Magelang City Environmental Service. Of course, this is a special attraction to review more deeply the programs that have been implemented at the school. Waste banks in general actually have a goal to manage waste from everyday piles. The establishment of a waste bank as an action to make school residents aware of a clean and healthy environment, so that the waste heap is then used into something more useful. This article provides a breakthrough in increasing environmental awareness in schools through the waste bank activities carried out, so it is hoped that the findings of this study can provide input to schools and others in the success of the environmental care movement for Indonesia in the future.

2 Method

The research method used in this study is qualitative, which emphasizes the study of success in increasing environmental awareness through the waste bank program in schools. Qualitative methods are used to find answers to a phenomenon or question through the application of scientific procedures systematically [4]. This research was conducted at SMP Negeri 2 Magelang which is located on Jalan Pierre Tendean No. 8 Potrobangsari, North Magelang District, Magelang City, Central Java Province. Data collection techniques used are interviews, observation and documentation while in the field. The process of data analysis was carried out as a conclusion of this research.

3 Result and Discussion

A. *Adiwiyata School Initiation at SMP N 2 Magelang*

The Adiwiyata school award at the national level was successfully obtained by SMP N 2 Magelang in 2015 with the provisions of Decree No 60/MENLHK-BP2SDM/2015. As an Adiwiyata School with adequate facilities, it is supported by various implementation efforts related to environmental conservation. Adiwiyata has the meaning as a good and ideal place where all knowledge and various norms and ethics can be obtained which can be the basis of human beings towards the creation of our welfare and towards the ideals of development [5]. The purpose of the Adiwiyata program is to be able to create qualified school conditions for learning places and raise awareness of school residents so that they can be involved in environmental conservation. In addition, it is expected to be able to encourage mutual success through government efforts in preserving the environment for the benefit of future generations, all school members participate in saving the environment. The establishment of a vision and mission is a form of reminder for all school members in achieving success together. As stated in the vision of SMP N 2 Magelang, including realizing a school that preserves the environment, it is followed by the mission of developing a school culture program with an environmental perspective that can be implemented in the school environment.

The Adiwiyata program at SMP N 2 Magelang has made various efforts in relation to environmental conservation, supported by the issuance of the Principal's Decree Certificate which assigned each clump. Some of the decisions made include 1) regarding restrictions on the use of air conditioning, 2) about saving water use in schools, 3) about saving electricity at school, 4) about the implementation of clean Saturdays at school, 5) about the invitation to throw waste in its place in the environment, 6) about the selection of waste in schools, 7) saving office stationery, and 8) regarding the establishment of a waste bank at SMP N 2 Magelang. Schools have a role to form behavior that cares, loves and has a sense of belonging to their environment. A sense of ownership will encourage responsibility to participate and create a comfortable condition at school. Each school member has an important role and responsibility to make the Adiwiyata program a success. As the role of the principal is focused on the holder of process control which includes planning, organizing, implementing and supervising in order to achieve the desired goals. While the role of teachers and students as implementers of programs that have been designed by the principal includes several rules that have been established both in the field of cleanliness, school order, and other activities. The implementation of the Adiwiyata school is a strategic choice and effort in the success of sustainable development national.

B. *Waste Banks and Efforts to Increase Students' Environmental Awareness*

Knowledge of the environment can be instilled from an early age through activities provided at school. The understanding that is continuously applied in the future to form a good attitude for the environment. Knowledge of values can shape attitudes, behaviors, which reflect on a person's personality or character [6]. Instilling the value of caring for the environment in schools has a goal of making someone able to preserve the environment. Environmental sustainability in question is both in the effort to prevent damage and the efforts made to repair the damage that has occurred due to human and natural activities. Various internal and external factors that can affect each of these caring behaviors, such as the environment or upbringing in schools. If the education provided by the school is good, it will provide good output as well, and vice versa. Referring to Yaumi's opinion that caring behavior can be seen from several characteristics including; a) maintain the preservation of environmental functions and prevent pollution and destruction that occurs in nature; b) provide true and accurate information regarding environmental management; c) give an invitation to keep the environment clean and improve ecosystems that are already polluted; d) provide ingenious solutions to develop a comfortable, clean, beautiful and tidy environment; e) maintain and inform the need to preserve the school, household and community environment by using flora and fauna in a simple way [7].

Environmental education is concerned with teaching conceptual knowledge and skills, the process by which individuals gain awareness that will enable them to act and also develop values and attitudes that will motivate and also develop attitude values that will motivate and empower individuals and groups to be able to provide solutions to current and future environmental problems [8]. This has a relationship that is focused on moral development that is embedded and conceptualizes the individual's relationship with nature by building the view that humans cannot be separated by nature as our

residence, so of course this becomes a completeness in an effort to love nature and be responsible for the surrounding environment.

Indicators that can be used to measure concern for the community can be seen from several aspects including is first, behavior in energy saving. Reflecting on the amount of wasted power found, this needs to be limited or alternative, the use of lighting during the day can be replaced with sunlight so that there is no excessive use. Second, the behavior of throwing waste. Waste is one of the main problems that can cause environmental damage. Multiple ways can be done to overcome it so that it has use value, such as by recycling waste that can still be reused, separating waste according to its type and minimizing the use of materials that are not environmentally friendly. Third, the behavior of air utilization, saving air usage needs to be considered so that the use is more effective and efficient according to needs. Fourth, the behavior of carbon emission contributors that can cause the greenhouse effect. The use of equipment that produces carbon needs to be minimized, such as the use of air conditioners, perfumes, and transportation. Fifth, healthy living behavior can be applied by maintaining the cleanliness of the school environment.

Waste bank based on the Regulation of the Minister of the Environment of the Republic of Indonesia Number 13 of 2012 has the meaning as a place for selecting and collecting waste that can be recycled and has economic value. The existence of abandoned waste is one of the driving factors for SMP N 2 Magelang in the implementation of waste utilization so that it has more use value. Therefore, the school began to form a Waste Bank “Rafflesia Spenada” according to the principal’s decision. The formation of a waste bank at SMP N 2 Magelang is a form of school concern about waste management under the guidance of teachers and waste bank coordinators. Unit level of formal education and knowledge of recycling were found to be positively related to recycling behavior [9]. According to Visvanathan, waste management is an integral part of the environment to ensure a safe and healthy human environment and can be considered for the advancement of sustainable economic growth [10]. Waste banks can be used as a solution in overcoming the problem of inappropriate waste management, as is often encountered that is by burning. The implementation of the waste bank involves all school members, including teachers and students. The involvement of students is a trigger to participate in environmental conservation, especially in the school area. Activities implemented in the waste bank include 3R management or all activities that are able to reduce everything that can cause waste, activities to reuse waste that is fit for use for the same function or other functions and activities to process waste to be used as new products.

Waste management is defined as all types of waste materials that are ready to be recycled, all sources of solid waste including domestic, commercial and industrial [11]. Waste management activities with 3R can be described as follows, The first stage is reduce activities which are carried out to reduce everything that can lead to waste generation. Someone is accustomed to using appropriate needs, such as using products that can be refilled, reduce the use of disposable items so as to minimize the addition of more and more waste. Efforts to reduce waste in schools can be applied from waste collection activities which are better to be sorted first according to type. The second stage, the reuse activity, is carried out in order to reuse the waste that can still be used either in the same function or in other functions. Utilize waste to extend the time of use before it

turns into waste again. The implementation of reduce at SMP N 2 Magelang has been applied, especially to the maximum use of paper stationery, both in the use of HVS paper and replacing chalk. This is supported by the issuance of the school principal's decision letter No 88/289.13/230/SMP. Another effort can be seen from the use of used bowls as a planting medium. The third stage is recycling activities or reprocessing waste into goods that are no longer used to become useful goods and can add value ecobomically. This effort has been carried out at SMP N 2 Magelang through prakarta subjects and through other adiwiyata activities. Students are given the freedom to be creative in reprocessing waste for high-value crafts such as plastic flower crafts, flower vases, miniature making and others. The work is then stored in the Adiwiyata secretariat room and the teacher's room and when the school holds an event, the work will be sold at a price range of 20,000 to 75,000 for each item. So that it can encourage students to take advantage of waste generation in the surrounding environment.

The working mechanism of the Rafflesia Spenada waste bank can be carried out by all school residents, with the customer's name. The involvement in these stages was carried out by the adiwiyata team or the management of each class, so far there are 107 customers who have joined. The first process is carried out by collecting and sorting waste according to their respective classifications and then selling it to the main waste bank. Waste collection activities are supported by a decree from the Principal of SMP N 2 Magelang. All forms of waste that have been sorted are then handed over to the Rafflesia Spenada waste bank to be weighed and recorded in a savings book in accordance with the price provisions of each type of waste. The purpose of giving a passbook can make it easier to calculate the balance that has been obtained from depositing the waste.

Waste Banks have several benefits for environmental sustainability, such as making the environment cleaner, making school residents aware of the importance of maintaining a clean place to live, and making waste into a more economical item. In addition, the wages from the waste that has been collected can be an encouragement for customers to be more active in participating, but not just wanting the wages they get but more for respecting the environment so that there will be no worse damage due to the generation of waste. The waste bank of SMP N 2 Magelang has received several awards organized by the Magelang City Environmental Service, this shows that the management and equipment owned are good, so that it can be an incentive for the school to continue to develop the Rafflesia Spenada waste bank program.

4 Conclusion

Based on the discussion above, it can be concluded that as an Adiwiyata School in supporting the environmental care and culture movement that has been launched by the Ministry of Environment and Forestry of the Republic of Indonesia, it can be implemented with various efforts, one of which is a waste bank. SMP N 2 Magelang has implemented a waste bank program under the name Rafflesia Spenada, various achievements have been achieved in various competitions organized by the Environmental Service. Various waste bank activities are implemented through student familiarization which is integrated with the 3R (reduce, reuse, recycle) program. All school members participate as customers in the Rafflesia Spenada waste bank activity. The school has provided various

strict rules through the Principal's decision regarding the various activities implemented. The findings of this study are that environmentally conscious behavior can increase from the existence of a waste bank program through the habit of reducing waste, collecting waste, sorting waste, recycling waste to giving meaning to the economic value of existing waste utilization. There are obstacles that are found, including food wrapping that does not use environmentally friendly materials such as plastic. This can be used as an evaluation so that care for the environment can be more optimal.

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