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Collaboration of the Eco Art Garden as an Effort to Foster Students' Creativity through a Participatory Method at a Senior High School in Banten, Indonesia

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Abstract

This study aimed to describe the implementation of the Eco Art Garden project as an effort to foster students' creativity through a participatory method a Senior High School in Banten, Indonesia. The two-week activity involved 56 students and eight facilitators in a manner applicable in the participatory method in which students took an active part in planning, implementation, and evaluation. In week one, the students made mosaic artworks using recycled materials, while in week two, they made a vertical garden using plastic bottles in forms involving cleaning, cutting, and painting. The impact of the study indicates that the participants were actively involved in all implementation levels and managed to produce seven pieces of mosaic artwork and one vertical garden erected in the school compound. Conclusion Conclusion Based on these impacts, it is clear that Eco Art Garden is an important environmental subject for meaningful environmental-based educational activities related to increasing student creativity by involving them in processing waste materials and creating art.

Keywords: Eco art garden, Vertical garden, Mozaik, Creativity, Collaboration

INTRODUCTION

Environmental education plays a crucial role in embracing environmentally conscious behaviors among students. Learning institutions are not only learning fields but also a setting that provides students with the opportunity to learn about the importance of conserving the environment. Environmental behaviors can be ingrained within students through well-structured learning exercises that enable students to be environmentally conscious through displaying environmentally conscious behaviors (Farida et al., 2017; Zabitl, 2010).

The activities entail engaging the students in gardening and recycling of plastic bottles for planting. For example, plastic bottles can be used for planting to create a garden at school. This is a very important activity that, apart from making schools green, enables students to be educated on how to take care of plants and be conscious of waste management. (Situmorang et al., 2018).

Art activities made from recycled materials also could teach environmental values, such as creating mosaics from dry leaves, used straws, and plastic wrappers. Mosaic is an art of creating pictures or distinctive patterns by arranging small pieces of materials (Ningsih & Rakimahwati, 2020). Students learn fine motor skills, creativity, and recycling principles through transforming waste into aesthetically valuable artwork in this activity.

Available yard space in both urban and rural locations is shrinking with the increase in land use for development. This condition has necessitated a more creative approach involving the use of vertical spaces for gardens. Vertical gardens that are suitable for small spaces can be instituted by adopting hydroponics or even using soil systems. These also work as green walls, substantiating an effective solution for maximizing narrow spaces to provide pleasing greenery.

The observations were made at a Senior High School in the Banten Province of Indonesia. There were several problems found that were connected to plastic waste that had yet to be managed properly. These problems were the driving force behind the Eco Art Garden community service project. The project combines mosaic art, vertical gardening, and the use of plastic waste.

The project aimed to encourage the students to think innovatively by using plastic and organic waste materials for artistic purposes. By such an activity, the students are required to establish creativity and make the school surroundings clean and green.

METHOD

This is a participatory method in which students will be directly involved in the stages of planning, implementation, and evaluation of research activities. Community service was implemented in October 2025 at Senior High School in Banten with a participatory method by way of collaboration between facilitator, teacher, and student. Participants include students from grade X, XI, and XII; partnering teachers; and the implementation team.

The project lasted two weeks. The first week focused on creating mosaics using dried leaves, straws, and snack wrappers. The second week was dedicated to creating vertical gardens from used mineral water bottles. Each class created one mosaic artwork. Activity stages included:

1) Preparation (coordination, permits, material collection, tool preparation). This includes coordination with the school administration, obtaining activity permits, and collecting materials (dried leaves, plastic snack wrappers, and plastic bottles). In addition, the team also prepared the necessary tools and supporting media such as scissors, glue, A3 paper, string, paint, brushes, and plants.
2) Socialization and education on waste management and the 3R concept (Reduce, Reuse, Recycle). The team delivered a briefing on the importance of waste management, the 3R concept (Reduce, Reuse, Recycle), as well as examples of artworks made from recycled materials.
3) Training and creation of mosaics and vertical gardens.

(1) Mosaic Creation Using Dried Leaves and Plastic Wrappers:

The creation process was carried out through several stages in Figure 1:

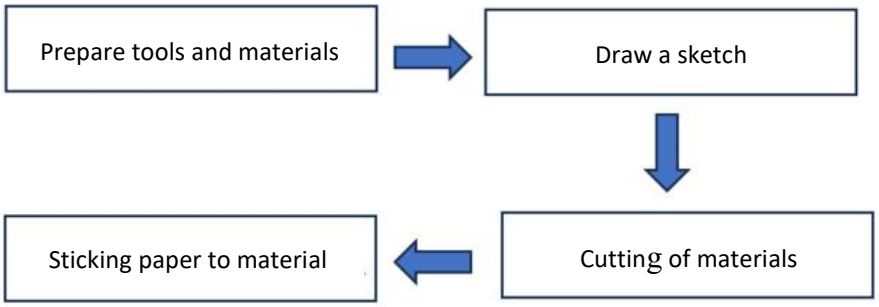

Figure 1. Mosaic-making process

(2) Vertical Garden Construction Using Recycled Bottles:

The construction process was carried out through several stages in Figure 2:

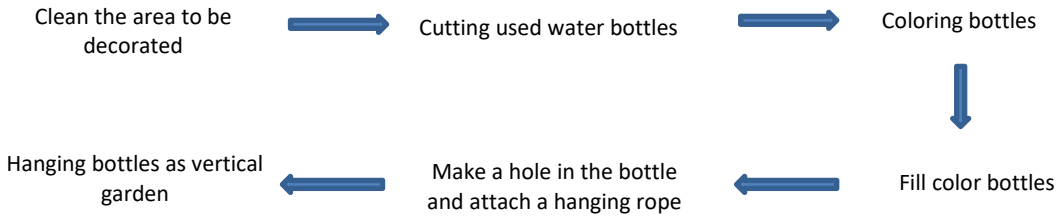

Figure 2. Vertical garden construction process

4) Installation of artworks in designated school areas. The completed mosaic artworks were displayed on the school bulletin board. Meanwhile, the vertical garden installation was mounted on the outer walls or surrounding school area to enhance the environment and increase greenery.
5) Evaluation and reflection through observation and participant feedback. The evaluation was conducted through direct observation of participant engagement, the quality of the artworks produced, and feedback from both teachers and students. Reflection was carried out together with the participants to assess the benefits of the activity and to develop a sustainability plan for the maintenance of the vertical garden

RESULTS AND DISCUSSION

The Eco Art Garden project is a creative approach introduced for the integration of environmental education with the development of students' creativity. The project involves the use of recycled materials as a medium for the enhancement of students' creativity in the school learning process. The Eco Art Garden project was executed in October 2025 for two weeks in a Senior High School in Banten, Indonesia, involving 56 students from grades X, XI,

XII, as well as an implementation team of eight personnel. The Eco Art Garden project is divided into two programs, which are the creation of mosaics from recycled materials, as well as the construction of a vertical garden.

During the first week, the focus was on mosaic creation using a combination of the organic recycled materials like dried leaves and inorganic materials like snack packaging and used straws. The classes involved different designs and different recycled materials for each grade level. For instance, grade X was using used drinking straws, grade XI was using snack packaging plastic wrappings, while grade XII was using dried leaves. The classes created one mosaic each, making three mosaic artworks created by the students.

The process involved in mosaic art began with the preparation of the tools and materials. In this step, the students were required to obtain used plastics from food and beverage packaging during the break time. This would enable them to use them as decorative components in the mosaic artwork. Afterward, they washed them.

Moving ahead, the process of sorting waste involved sorting materials based on their colors and shapes with the aim of enhancing the aesthetic aspect of the artwork. The subsequent process involved creating sketches, whereby the students were encouraged to exercise their creativity. Assistance and direction from the team involved in implementing were essential for the students to enhance their creativity, especially in designing works of art from waste materials.

The following stage involved material cutting. In this stage, students showed active participation in ensuring that the work was shared evenly among group members. It is apparent that for the creation of a mosaic design, a variety of colors would be needed; this made it necessary for students to work together to share the burden accordingly. The final stage would be attaching material to the paper medium. In this stage, students would distribute pieces of material from the waste material according to a sketch pattern and color gradient predetermined. Students' active participation in all aspects would have contributed to boosting their creativity and work in teamwork and innovative idea development.

The mosaic artwork developed by the students was later presented on the school bulletin board as a way to appreciate the whole process involved and the final products developed, as well as to enable people to appreciate the artwork developed. From the implementation process, it's clear that the mosaic-making process using recycled materials was successful in improving the creativity levels of the students to create artwork from plastic materials discarded during eating and drinking. This process will also aid in developing the

understanding of the need for environmental conservation and the role of recycling in converting waste into valuable creations.

In the second week, the EcoArt Garden was developed with 600 mL used beverage bottles. EcoArt Garden is one of the garden concepts which uses some ecological principles that harmonize with creativity by reusing waste materials such as plastic bottles to make the garden different and functional. Applying waste plastic bottles to obtain an artistic and aesthetic feeling in the school environment not only minimizes plastic waste but also adds value. The bottles cleaned were pierced in the middle, painted in various colors, which turned into a creative medium for the students participating in the development of the EcoArt Garden.

The following stage involved painting the perforated bottles, which involved Grade XI students. The painting stage took two days to complete. The aim of this stage involved improving the aesthetic value of the plants by adding colors to them. In addition, the main aim involved protecting the bottles from damage brought about by weather conditions. This stage helped in achieving a cleaner and beautiful garden for the purposes of attracting the interest of the whole school community. This project helped the involved students to gain skills and knowledge not only in recycling but also in planting and decorating the plants using creativity in bottle painting.

The next step entailed filling the bottles with planting media. Every bottle was filled with a material composed of fertile soil and organic fertilizer. This would help improve and facilitate optimal plant growth. The soil was also compacted enough for optimal plant growth. This step followed planting, where ornamental plants such as golden pothos, small-leaf foliage plants, spider plants, and others were carefully positioned inside bottles that were filled with a soil fertilizer material. This not only added aesthetic value to the garden but also served to improve air quality inside the school.

Its final stage was fixing and placing the bottles planted vertically. In the case of the filling and planting of bottles, strings were to be fitted on both sides for support to be hanged using a nylon rope for fastening. After that, the bottles were mounted on the wall or on the fence. This made the most of a small space by maximizing the area vertically, therefore economizing land while displaying a greener and more delightful garden display. Aside from the bottle garden display, the remaining open soil area was planted with different herbal plants such as aloe vera, basil, ginger, turmeric, lemongrass, and many others.

Eco Art Garden gives benefits such as minimizing plastic waste generated within the school through appropriate use of plastic bottles and utilizing the previously unused space between the prayer room and creating a beautiful environment. Besides, this activity promotes

active participation of the students. Eco Art Garden is effective because it utilized the previously unused space and created a garden that not only conserves the environment but acts as a learning platform for the students and Eco Art Garden team.

In Eco Art Garden in a Senior High School in the province of Banten, Indonesia, a total of 56 participants involving high school students collaborated with 8 personnel from the implementation team for the creation of mosaic art using recyclable materials and the development of a vertical garden. So, the participants managed to create three mosaics and an additional mosaic from the implementation team, along with a vertical garden established inside the school grounds. Direct participation of the students in the activity clearly indicated an increase in their creativity in terms of designing the mosaic patterns and arranging the plants in an aesthetically pleasing manner. In addition, the participants demonstrated an elevated sensitivity to the environment through the utilization of recyclable materials and proper maintenance of the garden. These aspects emanated observations found in accordance with Suprapto et al. (2020) who found that art programs using recyclable materials resulted in an increase in both creativity and environmental concerns. Additionally, the program improved the coordination abilities of the participants since they had specific areas in the garden and in creating the mosaics.

CONCLUSION

The Eco Art Garden project at a Senior High School in Banten, Indonesia, was conducted through two major activities: the creation of mosaic arts by recycling and the vertical garden making using used plastic bottles. In all, the activities in the series provided students with hands-on experience in transforming useless waste into useful creations while utilizing school space as a creativity-based green open area. These activities led to some mosaic artworks for each grade and a vertically installed garden within the school environment. Through this process, students practiced how to work in a team, created ideas, and actively participated in improving the surroundings at school. This also contributed to improving the school environment, where the school area became cleaner, orderly, and beautiful.

SUGGESTIONS

Based on the findings from the activities of the community service, it is recommended that the school performs regular maintenance of the vertical garden installed on the walls of the school, as well as waste management for the use of dried leaves and plastic as materials for mosaics to become regularly organized activities. The school should also organize a sustainable waste management program so that the use of dried leaves and plastic as materials

for mosaics can become an organized activity regularly performed by students. This activity has the potential to be integrated into classroom activities

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