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# ENVIRONMENTAL EDUCATION USING COMPOSTER MEDIA AT AN-NIKMAH ISLAMIYAH PHNOM PENH, CAMBODIA

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## ABSTRACT

This service project aims to educate the environment using composter media at an-nikmah Islamiyah phnom penh kamboja, with the aim of increasing and fostering a sense of concern for the environment and understanding that the use of composters can help students understand the natural cycle in organic waste treatment, as well as provide practical insights into waste reduction efforts. Education through composter media can also motivate behavior change, encourage students to be wiser in managing waste and preserving the environment.

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## Introduction

Cambodia in its official language is called Khmer, is a country located in Southeast Asia. Cambodia is bordered by Thailand to the west and northwest, Laos to the north, Viet Nam to the east, and has a coastline to the south that faces the China Sea Strait of the capital Phnom Penh, which is also the largest city in the country. Cambodia is known for its rich history as part of the Khmer Empire, which reached its peak in the 12th century with the famous Angkor Wat temple.

Cambodia has quite abundant natural resources both from the agriculture, forest products and fisheries sectors. Most Cambodian people rely on the agricultural sector. More than 80% of the population lives in the central plains where rice is a staple food product. (Birdsell 2020)

Community service activities are the efforts of University of Muhammadiyah Cirebon students who are doing international real work lectures at An-Nikmah Islamiyah Cambodia. The implementation of this service is to foster concern for the

environment in An-Nikmah Islamiyah Cambodia, as well as provide education by making a vertical garden composter Recycling inorganic waste makes a place for planting media that is beneficial for all An-Nikmah Islamiyah students

Cambodia has several problems related to the environment. The country of Cambodia has the potential to increase industrial development along with the entry of various commodities from outside. This will of course greatly influence the increase in environmental problems in the form of waste and pollution. This can be seen from the increase in population in the capital city of Cambodia, Phnom Phen, which has domestic waste amounting to 1300 m<sup>3</sup> per day (an average of 0.5 tons of waste per person per year). Currently there are no government regulations, laws, regulations or standards to regulate the siting, technology or environmental practices of related industries. (Phyrun 1996).

Organic waste is waste that is easily decomposed, such as food scraps, vegetables, dry leaves, which can still be processed and utilized. Meanwhile, inorganic waste is waste that does not easily decompose, such as plastic food opening containers, paper, plastic, toys, bottles and drink glasses, cans

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and wood. Inorganic waste can be used as commercial waste. Waste management aims to improve public health and environmental quality and make waste a resource. (Putra et al. 2022)

Environmental education serves to oversee the implementation of environmental management in the community. Schools play a role in implementing sustainable development in the form of environmental education. This terminology itself is defined as a learning process to strengthen public knowledge and awareness about the environment, thus the community is expected to have the expertise to deal with environmental problems (Sulistiyowati et al. 2021)

In this environment, there are indeed no garbage cans that are divided according to the type of looking around the school environment, starting from the garbage cans that are put together and there is no effort to recycle an item into an item that can be reused and the absence of land to plant plants is a prablomatika that must be completed and the low knowledge about proper waste management in order to improve a comfortable and beautiful learning environment

## Methods

### Design Stage

This activity is carried out with an educational method and the direct application of making and planting using a vertical garden composer through education is expected that students can be able to understand and increase their knowledge about the environment around them.

### Preparation Stage

Identification of needs: assessing the needs and education and interest of students, especially in natural sciences, even though there is no learning of natural sciences in this school.

### Data Collection Stage

Pretest: As an effort to determine the level of students' knowledge related to the environment and the creation of vertical garden composter planting media.

Needs survey: Conduct interviews related to the needs of science learning at An-Nikmah school with students.

### Implementation Stage

Introduction to education: about the importance of protecting the environment and its impact and benefits on life

Posttest: to know the results of students' knowledge of the environment and activities that have been carried out

Demonstration activity: planting together using vertical garden composer planting media to attract and interest students in protecting the environment and then implement it

### Evaluation Stage

Data analysis to evaluate student responses to students' understanding and interest in natural sciences

## Results and Discussions

The work program in this activity began with a survey of problems in An-Nikmah. Then the target of the work program carried out is An-Nikmah students to gain insight into waste processing and be able to recycle an item that is not used into a useful planting medium, the work program carried out is socialization education on how to manage waste and make vertical garden composters in An-Nikmah Islamiyah phnom penh cambodia

**Tabel 1.** Table based on pretest and posttest results

Group	Pretest Score	Posttest Score	Difference Score	Improvement Score
Group 1	15	55	40	266.67%
Group 2	35	100	65	185.71%
Group 3	35	100	65	185.71%
Group 4	25	100	75	300.00%

The results obtained in the pretest and posttest show that the increase in knowledge that has been carried out after the environmental education is carried out shows that it provides real and sustainable benefits,

both in terms of increasing knowledge, changing behavior, and students towards the environment

This service activity began by carrying out garbage cleaning activities around An-Nikmah Islamiyah Phnom Penh



Figure 1. Cleaning up garbage activities carried out around An-Nikmah

The second activity is a pretest which is carried out with the aim of finding out students' understanding related to waste management and how to collect it

The third activity is socialization and education about understanding waste processing and making vertical garden composters and conducting questions and answers about students' understanding of socialization that has been carried out



Figure 2. edukasi serta perancangan pembuatan komposer vertikal garden

The fourth activity is to do postes related to students' understanding of the activities carried out and the benefits of socialization ended by asking students' responses related to making vertical garden composters which students consider useful for them

#### Impact of education

Increasing Educational Knowledge and Skills in this service provides opportunities for students to acquire new knowledge and skills. In the health education program, people can learn about healthy lifestyles, disease prevention, and the importance of maintaining a clean environment. This can improve the overall quality of life. , creating positive behavior change, Education about healthy lifestyles, environmentally friendly behaviors, or the importance of education can encourage students to apply better habits in daily life.

#### Conclusions

The service carried out, namely environmental education using composter media at An-Nikmah Islamiyah Phonm Penh, was successfully carried out well and had a positive impact on the students at An-Nikmah Islamiyah and student interest in this activity was very good and many students were interested. This activity is also not free from several evaluation problems that must be improved, namely in terms of students' attention and communication understanding which are the main factors in this activity, but with this activity I am grateful to the partners in educational activities about natural sciences, it is also hoped that it can increase students' interest and It is a desire to learn natural sciences at An-Nikmah Islamiyah and the need for additional general learning to support students if they want to continue at university and the need to improve infrastructure and training and the presence of teachers who come from studies such as natural sciences and other learning.

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