

Workshop on Environmental Compassion and Energy-Saving Character Development

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ABSTRACT

The cultivation of strong character in schools can be achieved through character education. One promising approach to cultivating a deep affection for the environment is through the Workshop on Environmental Compassion and Energy Savings Character Development. Hence, it is essential to educate individuals about the implementation of the 4R (Reduce, Reuse, Repair, Recycle) principles and minimize energy when utilizing electronic devices in households and schools. By nurturing a foundational awareness of energy conservation and environmental consciousness at Bruder Melati Pontianak Elementary School, it is expected that the teachers will be able to impart this knowledge. Through the implementation of dissemination, school citizens gain a greater comprehension and consciousness of the 4R movement and the more prudent utilization of electricity by 94.4%. Furthermore, they acquire fresh perspectives concerning the energy-saving patterns of daily electrical energy use, thereby contributing to the betterment of society as a whole.

Keywords: *environmental compassion, energy saving, character development*

1. INTRODUCTION

Education is a process in which a nation prepares its future generations to conduct a life and fulfil the purpose of life both successfully and efficiently. Education can also be interpreted as an endeavor by a nation or state in building and developing self-awareness among individuals (**Zaman, 2018**). The short-term dimension of education is defined as a learning process. Furthermore, in the middle dimension, education is intended as a process of preparation for work, while in the long term, education as a culture process. These three elements are direct and continuous in the realization of what is called lifelong education (**Isa and Napu, 2020**). Within the entire season, it demands an enormous amount of dedication to establish a character.

Character development can be defined as a thoughtful and intentional human endeavor to empower and educate children in order to construct their personality through educational institutions (**Ministry of Education of Republic of Indonesia, 2022**). Character education at the primary school level is necessary for character development, as children at this age require moral instruction that can concretize abstract notions of right and wrong. By cultivating children with a preventive character, educators can effectively address challenges related to behavior and attitudes within a school environment. However, in accordance with Hurlock's perspective on the modest stage of early childhood moral development, the infant lacks the ability to translate the abstract concepts of ethicality and immorality. Character education guides the child not merely toward morality and immorality but in a deeper sense. Character education cultivates positive behaviors in children that allows they may comprehend, experience, and desire to perform good deeds (**Jamhariani, 2019**).

In character education, one of the 18 core values is that the individual respects the environment. The characteristic of environmental respect can be defined as an attitude and actions that consistently strives to avoid harm to the surrounding environment and intensify endeavors to restore any harm that has already occurred upon the environment (**Ministry of Education of Republic of Indonesia, 2017**). A further way to define the character of environmental compassion as a human quality is through the demonstration of attitudes and behaviors that consistently strive against any potential damage to the environment (**Nasucha, 2020**). One should exhibit the qualities of an individual who values the environment in the same way that he values another man. Man can manifest this affection in a variety of ways, including perpetual concern and management of his environment (**Harlistyarintica, 2017**). The education of an environmental consciousness in children can be facilitated employing the educational division of the institution. Adapting character values to the age and developmental stage of a child is achievable.

An aspect of environmental consciousness is the practice of conserving energy, particularly electricity. Modern-day existence is inextricably tied to electricity. Humans will not be deprived of electricity and will be incredibly consumed with it for industrial, residential, and educational purposes, among others. As time passes, electricity increasingly emerges as a critical survival resource; consequently, human beings have come to heavily depend on its presence. The demand for electricity by the human population and its necessities both grow in parallel (**Santoso and Salim, 2019**).

Innovations and the development of renewable energy have been implemented to meet the demand for electricity, including nano power plants and power optimization at plants. Nevertheless, the prototype stage of renewable technology development persists, resulting in a continued reliance on fossil fuels. Still widespread in power plants are fossil-fueled turbines powered by coal, gas, and solar energy. This is due to a greater efficacy of engines that utilize fossil fuels in comparison to other materials. Hence, it is crucial to decrease electricity usage in order to maintain a sufficient supply of electricity (**Sunarti, 2020**).

A few energy specialists consider the state of energy sustainability in Indonesia as unstable. As a result of the fluctuating Indonesian economy and the unpredictability of the global environment, electricity production is comparatively challenging. Moreover, Indonesia's expanding population has undoubtedly led to a surge in electricity consumption (**Ministry of Environment and Forestry of Republic of Indonesia, 2012**). As of September 2017, the Ministry of Energy and Mineral Resources of the Republic of Indonesia reported that approximately 2,500 villages, or 7% of the total village population in Indonesia, had not yet received the electricity access. According to the composition of electricity consumer data in

Indonesia, residential consumers of electricity account for a significant proportion of approximately 48.38%. As a result of this household sector's high electricity consumption, government attempts to restrict or suppress electricity use must be contingent on household electricity users' behaviour **(Bahij et al, 2020)**.

According to household sector consumer behaviour management, per capita electricity consumption in 2017 amounted to 1,012 kilowatt-hours (kWh) and was expected to jump by 10% to 1,129 kWh in 2018 **(Directorate General of Oil and Gas, 2011)**. Despite the fact that this electricity demand remains below 25% of the developed country's electricity consumption, which has reached 4,000 kWh per capita, it keeps remaining a threat due to the relatively rapid population growth of approximately 1.5%. This is the reason why Indonesia's energy supply is inadequate to meet the complete electricity demands of its population.

In accordance with one of the energy-saving initiatives undertaken by the government, the school building is selected for this community service contribution. The government encourages the reduction of electricity consumption and the elimination of fuel bursts. In this instance, energy-saving strategies are applied to the construction of buildings. This is due to the fact that the building sector absorbs 40% of global energy resources and more than 70% of electricity consumption, accounting for 50% of total energy use in Indonesia solely. The benefit of saving energy is the enhancement of community comfort and quality of life **(Ministry of Environment and Forestry of Republic of Indonesia, 2012)**. Ultimately, the primary objective of this community service is to guarantee that the delivered knowledge might affect the personal character of both teachers and students, provoking them to alter their regular habits and conduct regarding the consumption of electricity.

2. METHODOLOGY

2.1 Activity Location

The activities of community service are conducted at the SD (Elementary School) Bruder Melati Pontianak as shown in figure 1. The Faculty of Engineering of Universitas Tanjungpura is approximately \pm 4.9 kilometers away from the exact location. By car, the trip takes approximately 10 minutes. This partner's location is specified as A.R. Hakim No.92, Landat Sekip, Pontianak City, West Kalimantan 78243.



Figure 1. Community Services Location at SD Bruder Melati Pontianak

2.2 Community Services Activity

Lecturing method: Providing guidance to teachers and staff regarding the development of an environmentally conscious character in elementary school students and its integration into instructional and learning processes, as well as instructing them on the proper utilization of energy-efficient electricity and calculating of monthly electricity bills using a kilowatt-hourmeter. This will enable teachers to comprehend and implement these practices, thereby enabling them to influence societal energy and electricity conservation.

Discussion method: Investigating inquiries and dialogues posed by participants in the public questioning concerns pertaining to the character and fundamental understanding of environmental and electrical challenges they encounter on a daily basis.

Demonstration method: Illustrating activities that contribute to environmental conservation, including the implementation of 4R (Reduce, Reuse, Repair, and Recycle) principles into routine tasks performed at both educational institutions and households. Additionally, promoting the utilization of energy-efficient electrical appliances and educate individuals on energy conservation practices.

Simulation method: Presenting analyses of the implementation of 4R principles in educational institutions and households through the mediums of infographics and posters. Additionally, employing Microsoft Excel calculation simulation software to simulate monthly electricity bill computations based on data collected from a sample of multiple participants regarding their daily electricity consumption at home.

3. RESULTS AND DISCUSSIONS

This activity was organized and carried out by Faculty of Engineering teams of Universitas Tanjungpura. This activity was designed for the teacher participants in SD Bruder Melati Pontianak. The workshop activities are carried out utilizing four distinct approaches or methodologies. Initially, the approach of lectures entails the presentation of educational content by the lecturer to the primary school teachers and staffs regarding the attribute of environmental affection.



Figure 2. Opening and welcoming session from SD Bruder Melati Pontianak

Figure 2 shows opening and welcoming session from SD Bruder Melati Pontianak. Participants in the workshop were the teachers and staff of SD Bruder Melati Pontianak. The objective of the workshop is to provide educators with knowledge regarding the appropriate, prudent, and cost-effective utilization of electrical equipment. Additionally, the researchers aim to foster character development among primary school staff and teachers through the workshop program, which will subsequently be communicated to students; thus, this will enable them to develop a practical affection for the environment. Prior to the commencement of the teaching and learning activities, the environment recognition program is completed as follows:

Garbage management activities encompass a range of processes, including but not limited to garbage collection, transportation, processing, recycling, and disposal.

Morning picket activities consist of tasks that each student completes in conjunction with classroom cleaning. These tasks may include cleaning, removing desks, retrieving books from

the library, and organizing classrooms to maintain cleanliness.

Adequate and proper hand hygiene practices involve sanitizing the hands and fingers with soap or water, or for other intended reasons, in order to maintain cleanliness, whether it be as part of a prayers, to demonstrate respect, or for other reasons.

Engaging in self-care activities entails maintaining personal hygiene, such as regularly clothing students in accordance with the instructional process at the school.

Park and school environment care activities encompass tasks aimed at preserving the functionality of the school grounds and environment, in addition to the premises, and implementing recommendations to ensure that these components are always in excellent condition (preventative maintenance).

Table 1. Progress Measurement of participants' understanding

No.	Question	Pre-workshop (%)	Post workshop (%)
1	Do you know the urgency of the importance of cultivating the character of a conserving environment in a child?	54	92
2	Do you know any strategies that can nurture a child's environmentally-loving character?	40	98
3	Did you know that saving electricity can save the environment?	62	95
4	Do you know any strategies that can be attempted to save electricity?	46	97
5	Do you know how to calculate the electricity payment?	28	90

The analysis of the questionnaire responses and recapitulation performed in table 1 revealed that the average level of comprehension and satisfaction among participants after the workshop was 94.4%, which was considered to be exceptionally high. As a consequence, it can be asserted that the workshop aimed at cultivating a respect for the environment among students and conserving electrical energy was effectively executed, achieving tangible benefits.

The material is subsequently delivered to the students, enabling them to cultivate a genuine appreciation for the environment through practical application. This program not only encourages students to practice and jump in person in order to teach them to respect and care for the environment around them, but also to engage in therefore in order to promote them an environmental character that is responsible. This program essentially teaches students how to care for and appreciate the environment through the utilization of daily items. The following are some of the benefits achieved of these activities:

1. Contributing to the preservation of the school environment through greening and maintenance; and ensuring that the school environment remains tidy and well-organized.
2. Captivating students' interest through the maintenance of the school environment.
3. Raising student awareness and motivation regarding the significance of engaging in activities that promote environmental sustainability and sanitation in educational institutions.
4. Nurturing a sense of empathy and compassion among the students participating directly in

these endeavors.

The subsequent subject pertains to energy conservation and electricity usage. The presentational format of the material is a PowerPoint slide. The delivery of the materials is tailored to the demands of teachers concerning the utilization of electricity in both academic and domestic settings. Preceding the commencement of the presentation, the participants have been provided with the shared material in order to eliminate any potential information gaps between the presenter and the participants.

Providing teachers with a brief course on energy conservation was conducted through energy evaluations that involve regulating the use of electrical devices and calculating electricity consumption over a certain amount of time as shown in figure 3. The energy-efficient lifestyle promotion campaigns that have been implemented in Indonesia thus far were insufficient to achieve widespread societal comprehension. The sole objective of energy conservation is to lower electricity costs. The current electricity supply in Indonesia is insufficient to consistently and reliably satisfy the needs of the entire population, hence electricity savings are not beneficial. The majority of us endure to engage with blackouts of electricity multiple times per day or are without access to electricity for a whole day. Indonesia remains to deal with the challenge of enhancing its electricity supply in light of the yearly growth in consumer demand for residential, commercial, and industrial purposes. Failure to meet this requirement will result in Indonesia suffering an electricity crisis. Good governance and the prioritization of adequate and appropriate energy production, particularly renewable energy, are essential for Indonesia to achieve energy sovereignty. Concurrently, it is incumbent upon us as consumers to embrace an electricity- efficient way of living and develop into knowledgeable customers.



Figure 3. Delivering the materials

Furthermore, figure 4 shows the discussion approach facilitates presenter-participant interaction with the intention of stimulating a pleasant, warmly received and proactive workshop ambiance. During this discourse, certain groups of the attendees expressed tremendous curiosity for interaction. The majority of the workshop attendees engaged in the discourse, contributing their experiences and approaches regarding educational methods and cultivation of an environmental consciousness to their students. Nevertheless, participants in the workshop inquired about the standards that should be adhered to when constructing a proper and effective waste bank, because of the SD Bruder Melati Pontianak school's negative experience at an environmental hygiene competition as a case in point.



Figure 4. Discussing and exchanging the experience and knowledge

Subsequently, the demonstration method consists of simulating the electricity consumption of SD Bruder Melati Pontianak applying an Excel-based application and a random sample of electricity usage from a participant's residence. Participants were also ecstatic during this session since they expected that by conserving electricity, they could reduce the amount they spent on expenses for electricity.

Eventually, the occasion concluded with the distribution of posters to the schools and capturing of photographs by the community service team, which included the teachers and staff members of the school as participants as shown in figure 5.



Figure 5. Distributing the posters and capturing photo together

4. CONCLUSIONS

As a result of the organized community service, it can be justified to conclude that the participants' comprehension of the workshop has been enhanced by 94.4%. However, by participating in this endeavor, it is expected that all the participants will be more conscious of the need to conserve electricity in order to preserve the environment.

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