

Implementation of a Composting Program in Increasing Environmental Responsibility in Primary School Students

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Abstract

This study explores the implementation of composting program at elementary school as an effort to increase environmental responsibility among students. However, based on the observation, the composting program can encourage the participation of students to be active in protecting the school environment. The purpose of this study is to examine the effectiveness of the composting program in building a learning community that cares about the environment at elementary school. The type of research is descriptive qualitative, data collection without settings by researchers, by conducting observations, interviews and documentation in data collection. The aspects studied were the implementation and impact of the composting program. In the implementation, students better understand the process of recycling and decomposing organics. In terms of impact, students showed increased participation in keeping the environment clean, both at school and at home. The barriers are in the implementation of the composting program, measuring the level of success, and the availability of organic materials. The conclusion of this study is that the implementation of the composting program in elementary school is going well. Student implementation can run well according to the correct recycling process. The impact of students shows an increase in responsibility for the environment.

Keywords: Composting Program, Elementary School, Environmental Education, Environmental Responsibility, Quality, Recycling

1. Introduction

The global environmental crisis is increasingly urgent. Global warming, climate change and environmental pollution are real threats to human survival. One of the roots of environmental problems is improper waste management. To overcome this problem, efforts are needed to foster environmental awareness from an early age, especially in children. Schools as educational institutions have an important role in shaping student character and behavior. One effective way to instill environmental values in students is through a composting program.

Compost is organic material that has undergone a decomposition process with the help of living organisms such as microorganisms and worms. Compost contains various kinds of nutrients that are very useful for the soil. Compost functions as a conditioner, fertilizer, source of humus and natural pesticide for soil which can help the plant growth process when used as a soil medium (Jahangir et al., 2021). Students as the main producers of waste

in the one Krajan state elementary school environment must also be aware of how to reduce, reuse and process waste into other products that have use value, such as converting waste into compost.

During the educational period, it is hoped that children will be able to develop the life skills needed to overcome various challenges independently. Learning programs in schools must be designed to build independent character in children through tasks related to the curriculum and personality development activities (Curry & Schneider-Muñoz, 2020). A supportive school environment is very important to create quality learning. Instilling knowledge and awareness about clean and healthy lifestyle behavior is very effective if it starts from elementary education, so that students can implement this healthy and clean lifestyle outside the school environment (Inna et al., 2021).

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Important Aspects of Responsibility:

1. Awareness: Understanding that our actions have an impact, both positive and negative, on ourselves, others and the environment.
2. Obligation: Feeling obligated to do something or achieve a certain goal.
3. Accountability: Willing to explain and be responsible for the actions and decisions we take.
4. Trust: Building trust with others through consistent and reliable actions.
5. Integrity: Adhere to moral and ethical values in every action.

To build a school character that cares about the environment, cooperation between the school system and management is needed. This means that environmental programs must be agreed upon and implemented by all school members. A teacher is not only tasked with delivering lesson material, but also providing environmental education that can foster a sense of concern for the environment. School leaders need to encourage teachers, staff and students to actively care for the environment through various programs and activities held (Diyana Nurvika Kusuma Wardani, 2020).

Based on observations made at SD Negeri 1 Krajan, Pekuncen District, Banyumas Regency, researchers made observations. This school is a school whose clean environment is not maintained due to many factors. Such as the behavior of students who are irresponsible towards waste and there are no educational staff.

Implementing a composting program in elementary schools can significantly increase students' sense of environmental responsibility. By combining practical activities with educational material, this program helps foster awareness and involvement in environmental issues from an early age.

Research shows that interactive learning approaches, such as composting activities, get positive responses from students. Student involvement through games and direct experience can deepen their understanding of conservation concepts (Soenarno & Miranti, 2021). In addition, early education about recycling and composting has been proven to influence students' long-term environmental behavior (Altikolatsi et al., 2021).

Composting programs can increase environmental responsibility by involving students in practical activities, which encourage critical thinking, collaboration, and a sense of ownership of environmental issues around them (Činčera et al., 2020). This hands-on approach not only fosters a deeper understanding of environmental challenges but also empowers students to take action and advocate for sustainable practices in their communities.

The composting program teaches students about waste management, fosters a sense of environmental responsibility by introducing them to organic waste, how to separate it, and the composting process.

This is very helpful in integrating these concepts into their daily lives (Chotimah, 2019). This hands-on experience not only strengthens their learning but also inspires them to take initiative in other environmental projects, cultivating a culture of sustainability that goes beyond the classroom.

This project effectively involves elementary school students in composting activities, which fosters a sense of environmental responsibility through practical experiences such as recycling waste and growing vegetables in the school garden (Silva et al., 2020).

While composting programs offer many benefits, some argue that without adequate training and resources for teachers, the effectiveness of such initiatives may be limited. Thus, comprehensive support for educators is essential to maximize the impact of these programs.

Formulation of the problem

Based on the background above, the problem formulation in this research is:

1. Is the composting program effective in increasing students' awareness and behavior towards the environment around the school?

Research Purposes

The aims of this research are:

1. Determine the effectiveness of the composting program in increasing environmental awareness and responsibility in elementary school students.
2. Analyze the factors that influence the successful implementation of composting programs in elementary schools.
3. Develop a model for implementing an effective and sustainable composting program in elementary schools.

Benefits of research

1. Theoretical Benefits: Development of science: This research can contribute to the development of science, especially in the fields of environmental education and waste management.
2. Practical Benefits: Improved environmental quality: By implementing a composting program, schools can reduce the amount of organic waste thrown into landfills, thereby improving the quality of the environment around the school.
3. Benefits for Students: Changes in attitudes and behavior: Composting programs can encourage students to care more about the environment and change their behavior in managing waste.

2. Research Methods

This research uses descriptive qualitative research methods with data collection techniques through literature study. In this research, the researcher carried out a library study method by starting by searching scientific articles, reading related literature, and analyzing the results of relevant previous research, observations and interviews with the aim of finding out the actual situation (Firmansyah & Dede, 2022). Observation is carried out with clear, detailed, complete and conscious observations about an individual's actual personality in certain circumstances.

The observations made were related to children's understanding regarding psychomotor development through compost fertilizer, psychomotor development through making compost fertilizer, and psychomotor development through the benefits of compost fertilizer. Researchers play an important role in collecting data, both primary and secondary data. Interviews were conducted with students, principals, teachers, employees and other relevant informants as well as observing the school environment and facilities. To ensure the validity of the data, researchers used triangulation of sources, techniques and time. Data analysis was carried out interactively through the process of data reduction, data presentation and drawing conclusions..

3. Results and Discussion

The research results explain the data obtained through observation and interviews. In general, elementary schools are included in the public facilities category because the facilities and infrastructure are provided by the government or private sector for the benefit of the community.

Elementary schools have also obtained official permission to operate according to their function, namely providing basic education to children aged 6 to 12 years. one Krajan state elementary school operates from Monday to Friday. During these five days, various activities were carried out by the school community. It cannot be denied that activities at school also produce waste, especially during recess.

Some of the main benefits and characteristics of compost according to Vera (2012) are first, enriching the soil. Compost increases soil fertility by providing important nutrients, such as nitrogen, phosphorus and potassium, as well as micronutrients. This supports healthier plant growth.

Second, reduce organic waste. Using organic materials to make compost helps reduce the amount of organic waste that goes to landfill, which contributes to more sustainable waste management.

Third, improve soil structure. Compost improves soil structure by increasing water storage capacity, air circulation and soil drainage. This helps prevent soil erosion and increases resistance to drought.

Fourth, environmentally friendly land. Compost fertilizer is an environmentally friendly alternative to chemical fertilizers, because it does not contain dangerous chemicals that can damage the environment.

Fifth, improving plant quality. Plants fed with compost usually produce higher quality yields, with better taste and nutrition.

And sixth, reduce dependence on chemical fertilizers. Using compost can help reduce dependence on chemical fertilizers which are expensive and can damage the environment if used excessively.

For this program as a whole, the availability of rubbish bins at one Krajan state elementary school is quite adequate, with two rubbish bins in front of each classroom and additional ones in several locations such as the canteen, field, toilet and prayer room. However, this amount is still not enough to accommodate all the waste produced.

Even though there are two different colored and labeled trash bins, yellow for inorganic waste such as leaves, wood and food waste, and green for organic waste such as plastic, paper and students still have difficulty disposing of waste properly. Trash bins are often filled with a mixture of different types of waste, indicating that their awareness of waste management needs to be increased.

Based on interviews with grade 5 teachers at one Krajan state elementary school, students have actually received education about the types of waste and how to dispose of it properly. However, applying this knowledge is often a challenge.

Many students forget and end up throwing rubbish into the trash which is mixed with various types of waste. This creates problems because students do not take appropriate action. Students, especially in lower grades, may not fully understand the concept of waste segregation, so they unknowingly mix different types of waste.

Although awareness in waste management still needs to be increased, the level of students' awareness of disposing of waste in the right place is quite good, as can be seen from the lack of rubbish strewn around the school environment.

The teachers' efforts in providing education, especially during ceremonies, should be appreciated because they have proven effective in raising students' awareness of environmental cleanliness.

The habit of throwing rubbish in its place and picking up scattered rubbish, even if it is not one's own, is an education that is always conveyed by teachers during ceremonial addresses to all students at one Krajan state elementary school. It is hoped that students will always remember this and apply it in their daily lives

Inhibiting Factors

There are several inhibiting factors, such as lack of support from the government in terms of funding. The family environment has a significant influence on the formation of student character. Even though they have the same experiences in the classroom, outside of school, they are exposed to different characters. Elementary/MI age children often imitate interesting things, whether in negative expressions, actions or habits, even though they have been taught about the importance of environmentally caring character at school.

Supporting Factors

Supporting factors for implementing the composting program at one Krajan state elementary school to build environmentally caring character include commitment from all related parties, support from the school principal, teachers, employees and the local community.

Familiarization activities also play an important role in forming environmentally caring attitudes among students, while collaboration with external institutions also supports the protection and management of the school environment.

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4. Conclusion

This research proves that composting programs can be an effective tool in raising environmental awareness in elementary school students. Students' active participation in the composting process shows a significant increase in their responsibility towards the surrounding environment.

Through the composting program, students not only gain knowledge about organic waste management, but also develop an environmentally caring attitude that will benefit their future.

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