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Installing a Waste Care Education Program from an Early Age

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Abstract: The waste consists of useless materials that must be discarded or removed. The statement, as mentioned earlier, is an understanding of the waste of the previous paradigm of thought; now, we must establish a new paradigm in which waste can generate income and bring advantages. Children must be taught from a young age that waste has numerous benefits and can generate income to influence future generations to be more concerned about waste issues. Children who get early childhood education are encouraged to care about the environment from an early age. To do so, they must be accustomed to environmental care activities, such as sorting waste by kind and depositing it properly, caring for hydroponic plants, bioports, waste alms, waste banks, etc. Implementing some of these procedures can protect the earth and mitigate the issue of waste piles. This research aims to see the responses and actions of children in the care of the environment, one of which is waste management. It also introduces early childhood how to manage waste properly so that they can keep the environment clean and sustainable. The novelty of this research involves children protecting the environment and processing waste directly in early childhood. The care for a waste program implemented in early childhood education immediately becomes a warning to us, with the image of the earth sobbing, bearing the burden of waste disposed of carelessly by its inhabitants. This results in a large amount of not managed waste, and the earth cannot decompose them. Eventually, the trash's original shape didn't change.

Keywords: early childhood education, waste care education program, environmental care.

从小开始实施废物管理教育计划

摘要：廢物由必須丟棄或清除的無用材料組成。聲明，如前所述，是對之前思想範式浪費的一種理解；現在，我們必須建立一種新的範式，在這種範式中，廢物可以產生收入並帶來好處。必須從小就教育孩子們，垃圾有很多好處，可以產生收入，影響子孫後代更加關注垃圾問題。鼓勵接受幼兒教育的兒童從小就關心環境。為此，他們必須習慣環保活動，例如按種類分類並妥善存放垃圾、照料水培植物、生物港、垃圾施捨、垃圾銀行等。實施其中一些程序可以保護地球並減輕影響垃圾堆的問題。這項研究旨在了解兒童在保護環境方面的反應和行動，其中之一就是廢物管理。它還向幼兒介紹如何妥善處理廢物，使他們能夠保持環境清潔和可持續發展。這項研究的新穎之處在於兒童保護環境和在幼儿期直接處理廢物。幼兒教育中實施的關愛垃圾計劃立即成為對我們的警示，地球在抽泣，承受著居民不小心丟棄的垃圾的負擔。這導致大量未經管理的廢物，地球無法分解它們。最終，垃圾的原形沒有改

變。

关键词：幼儿教育、垃圾关爱教育计划、环境保护。

1. Introduction

At the beginning of human history, waste was not an issue. However, as the number of people and types of activities expands alongside technological advancements and the modernization of life, the number and variety of waste types have increased, resulting in greater waste-related problems.

If waste is not properly managed, it will cause numerous environmental problems. In other words, those problems will lead to environmental pollution of the water, air, or soil. Proper management and control must combat environmental contamination.

Waste management and control are becoming increasingly complicated. Additionally, the growth of culture, which continues to evolve in line with the times, increases the complexity of waste types produced.

Human behavior reinforces this situation, which allows an increase in waste production to the point where waste production exceeds waste destruction. Given these facts, it is crucial to recognize that community participation plays a significant role in attempts to solve health problems, especially waste problems because some of these issues arise from human behavior.

Wastes differ by their wet and dry characteristics. Wet waste comprises material that decomposes easily, but most dry waste, such as paper, plastic, metal, and rubber, can still be recycled.

Several strategies have been described in [20]. [19] conducted research on waste generation per capita, waste composition, and household attitudes toward waste management in the Rahman Nagar Residential Area in Chittagong, Bangladesh. Meanwhile, [8] concluded that generational prediction is essential. [5] explored the potential application of an effective waste management policy for the Baranagar City area, which is adjacent to the Kolkata Corporation area. [1, 4, 9, 13] studied household solid waste (HSW) generation and physical waste composition to determine the level of waste generation and the potential usage of recyclable waste. [2, 7, and 19] investigated the correlation between the quantity and characteristics of household solid waste, as well as relevant socioeconomic factors. Additionally, waste generation for habits, changes, and disposal trends was also evaluated by [3].

Waste in metropolitan regions is relatively difficult to manage; however, waste in rural areas is still manageable because of the prevalence of wrapping materials produced by nature. In contrast, food packaging in metropolitan areas made of numerous materials that are difficult to recycle.

Inorganic waste includes plastic, paper, metal, glass, etc. Inorganic waste can be reused or must go through a recycling process. Currently, in industrialized countries, the use of easily recyclable packaging is an element contributing to the increased market competitiveness of products [14].

Environmental issues are global issues requiring attention from multiple sectors, including education. Environmental education plays an essential role in resolving contemporary environmental problems. According to [6], environmental education is crucial at this time. Today's development of nature-based schools is driven by the desire to "substantially restore essential human values to nature and the surrounding environment." Nature-based learning is a learning system that encourages students to become more acquainted with nature while keeping them engaged in teaching and learning activities [10].

However, early childhood education can only play a limited role in addressing environmental challenges if it focuses solely on children as the key to change [22]. It is important to remember that even though children are considered an important key to change, especially in the context of ECEIS (Early Childhood Education for Sustainability), it does not mean that they are the only ones who have a role or responsibility to save the earth.

The purpose of making bioport is to aid in water runoff into the soil. This work also tries increasing groundwater so that it can penetrate into the soil and not be squandered immediately. This condition can reduce the amount of water lost from the well.

Solid waste is composed of organic and inorganic materials. Organic matter can be managed into liquid and solid compost. Meanwhile, inorganic materials must be processed first to minimize their environmental impact and safeguard development investments (SNI 19-3964-1994).

To ensure the success of the waste management system, many important criteria, such as financial and operational sustainability, must be considered when offering quality services [5, 11, and 16]. Community participation systems are the most frequently recommended method for waste management [5]. This method can encourage households to reduce the source of their waste by involving community participation [18]. According to [21], the community-based waste management approach is based on a cooperative concept to change communal waste management in terms of source segregation, recovery of recycled materials, and storage before collection. This approach demands extensive consultation with community

organizations and participation from all community members [18].

The recycling process must begin with pollutant sources, such as household/domestic waste, markets, hospitals, commercial and industrial areas, and public or recreational spaces.

Recycling begins with domestic waste, such as children's toys, buckets, flower pots, household appliances, newspapers, and magazines.

Recycled inorganic waste can be converted into extremely valuable materials. The factory can make rubbish bins, plastic household appliances, brooms, and other items from recycled waste. If waste producers process waste, individuals are required to provide guidance or create a team that will guide the community on how to be creative with waste. Therefore, waste that was once useless becomes more valuable, as illustrated by the production of folders and bags from plastic cooking oil, bags from packaged coffee and plastic dish soap, and mats from candy wrappers.

Early environmental education is crucial because children are in the pre-contemplation stage (the development of the ability to consider a behavior) [12]. Children do not understand the significance of the waste problem at this age. Smoke from burning waste, for instance, causes air pollution and shortness of breath. Children can only ask their parents for help in removing the smoke. Therefore, it is anticipated that the knowledge and behavior gap between teachers and parents about waste management will help for schools to organize collaborative discussions between teachers, parents, and children (students). When children receive environmental education in a classroom, parental participation is expected. Children serve as of liaison between classroom instruction and family dialog at home. Parents are more likely than other adults to accept explanations from children since youngsters do not behave in a condescending manner [17]. Then, with the emergence of intense dialogues from parents, teachers, and children, children's concern for pro-environmental behavior, such as environmentally friendly waste management, will arise [15].

Early childhood education studies on waste handling and management were conducted by providing several educational processes such as integration in learning, coloring contests with the theme of environmental cleanliness, distribution of waste leaflets, and even sorting waste types. In addition to these educational efforts, motor training was conducted to transform waste into more valuable products.

Education about waste at an early age is the first step in shaping children's character of caring for the environment, discipline, and a sense of responsibility for waste and its disposal. The study results indicate that children are enthusiastic about early childhood education, incorporating activities they enjoy. These educational activities may be conducted through competitions, the distribution of illustrated leaflets, daily practices, and even programs for waste recycling. These activities might inspire children to be more creative and broaden their perspective on a fresh perception of waste.

2. Research Methodology

2.1. Research Design

The research method is based on literature studies from within and outside the country. The results of this study are intended to change the way of thinking about waste in early childhood and still in school and better habits regarding the treatment of waste.

Literature study, data collection, concepts studied, conceptualization, data analysis, results and discussion, conclusions and suggestions

Systematically, the steps in writing a literature review are as shown in Fig. 1.

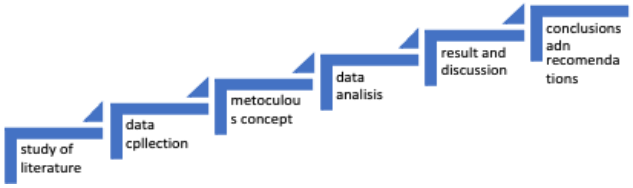

Fig. 1 Flow of literature study

2.2. Subject

The subjects of this study were students of early childhood, kindergarten, elementary school, junior high school, and senior high school.

3. Result and Discussion

3.1. Types of Waste and Waste Segregation

School wastes differ by type, namely, wet waste and dry waste. Wet waste includes leftover food, plants, leaves, and tree branches. For management, this waste is converted into solid and liquid compost.

Due to the high price, paper waste can be sold directly to vendors or scavengers. It is necessary to segregate plastic waste into items that can be sold immediately and those that must be transformed into handicrafts before being sold. For instance, when collected, candy waste can be transformed into a mat or a bag. Those that can be sold directly, such as used beverages, are sold straight to scavengers or plastic-accepting stands.

The existing school reference employs an environmental basis because, as institutions that care about the environment, schools may play a significant role in developing new ideas.

Schools must serve as a model and standard for developing a clean and healthy living environment. All school members serve as models and benchmarks for establishing a clean and healthy living environment. All school members are responsible for creating and

maintaining a clean and healthy school environment.

Schools with an environmental perspective must educate students that improper waste management harms human health and the continued existence of life on Earth. In other words, we must shift our mindset from viewing waste as something stinky and useless to something that, if managed properly, may be made more valuable and profitable.

For preschool and elementary school children, images of the Earth crying due to flooding or accumulating waste can be used to remind them of the importance of maintaining cleanliness and separating trash according to the type of rubbish bin to facilitate subsequent processes such as recycling or sale at a stall.

3.2. School Programs for Waste Management in Realizing a Clean Environment

Environmentally-based school programs are modified to each school's innovations to create zero-waste school programs. All school inhabitants are encouraged to maintain the cleanliness of the school and its surroundings by not littering and by preparing five different types of trash cans according to the type of waste. Additionally, other activities include community service in the school environment, collaborating with the school canteen not to use plastic packaging, requiring children to bring their own cutlery to minimize the use of plastic packaging, and fostering an awareness of the significance of maintaining cleanliness and health for school residents.

Students are involved in all aspects of the school's hydroponic plant cultivation program, from explaining the theory of hydroponics to selecting better plant varieties and seeds and performing care and development.

Hydroponics is a technique for growing plants (fruits, vegetables, and flowers) without using soil. Hydroponic cultivation will result in pest-free plant varieties.

Other programs, such as trash pickup along the protocol road leading to the school, can be beneficial. Residents of the school sweep up trash. Most waste produced is plastic waste.

The purpose of biopore is to allow runoff water to enter the soil so that groundwater can increase; runoff water is not lost immediately but can enter the soil to limit the loss of well water.

3.3. Waste Banks as a Means of Solving the School Waste Problem

In addition to waste processing, there is a waste alms program, one of a waste reduction and faith-building initiative. The concept of waste alms is similar to that of a waste bank. The waste is sorted by type and then transferred to a reputable organization that is responsible for managing the waste. The earnings from trash donations are distributed to those in need. By providing a location where scavengers can dispose of the waste that we have collected, we can also donate directly to the community.

A waste bank is an organization established by a school or community for community groups or school residents to deposit money in the form of waste, which is then recorded on behalf of an individual. Once the waste savings are deemed sufficient, they can be exchanged directly for money, food, or goods provided by the organization.

Paying for schools through waste savings and waste collection activities by students, teachers, and parents can be used for school fees, field trips, savings, and other purposes.

4. Conclusion

Early childhood education studies on waste handling and management are conducted by providing several educational processes such as integration in learning, coloring contests with the theme of environmental cleanliness, distribution of leaflets on types of waste and even the practice of sorting types of waste. In addition to this education, motor training was carried out to recycle waste into more valuable goods.

The findings of this study are that if children are involved in waste management, they will help protect the environment. If in other writings it is said that it only provides knowledge about environmental hygiene, in this study it involved early childhood directly in waste management. What is the strength of this paper in early childhood knowledge must be accompanied by practice so that children can understand and be able to apply it. This paper only covers how early childhood is limited to knowing and managing waste. The limitation of this study is that the analysis was carried out using the Scopus database, so the authors omit certain peer-reviewed studies that are not listed in Scopus.

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