

# Fostering Sustainability: The Role of Environmental Education in School Waste Management

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Environmental education serves as a means of reassessing our relationship with nature, addressing both ecological challenges and the necessity for social transformation towards sustainable development. It aims to inform and educate communities about environmentally friendly behaviors, fostering harmony between humans and nature, while also promoting rational management of natural resources. Furthermore, environmental education encompasses knowledge, awareness, skills, and active participation in addressing environmental challenges. The uncontrolled production of waste has significant environmental consequences, reflecting a lack of education and awareness among citizens regarding waste management and environmental issues. Knowledge, attitudes, and behaviors towards the environment are evident in the way societies address environmental problems, including waste management. Improper waste disposal leads to pollution, biodiversity loss, and long-term environmental degradation, emphasizing the need for immediate intervention through education and policy reforms. According to literature, the issue of municipal solid waste arises due to the absence of effective waste management measures, insufficient education and public awareness, the lack of sustainable strategies, and unstable political circumstances at the local level. Moreover, inadequate infrastructure and financial constraints further complicate efforts to implement efficient waste management systems in schools and local communities.

The purpose of this research is to investigate the types and quantity of solid waste produced in school units, understand the underlying reasons for the volume of waste generated, and explore students' attitudes and behaviors toward the environment. Additionally, it examines the effectiveness of current waste management practices within schools and explores potential strategies for waste reduction and sustainability. By assessing the perceptions, knowledge, and behaviors of students, teachers, and administrative staff, the study highlights the role of environmental education in fostering responsible waste management and promoting sustainable practices within school communities. In an era where environmental protection should be an integral part of daily life, schools must serve as key institutions for instilling environmentally responsible attitudes and behaviors from an early age. Integrating waste management education into school curricula can help cultivate responsible environmental citizenship and enhance sustainability efforts.

For the waste composition analysis, the study employs both qualitative and quantitative methods for analyzing the composition of municipal solid waste. The analysis follows the procedure outlined in ASTM D 5231-92/2003 "Standard Test Method for Determination of the Composition of Unprocessed Solid Waste." This standard recommends the use of the Random Uniform Sampling method, ensuring that each waste stream has an equal probability of being selected for the sample. This approach enhances the accuracy of waste characterization, providing a comprehensive understanding of waste generation patterns within school units.

This study contributes to the ongoing discourse on environmental education and sustainable waste management, providing insights into the role of schools in shaping environmentally responsible citizens. The findings are expected to support the development of policies and interventions aimed at improving waste management practices and enhancing environmental education within educational institutions.

**Key words:** environmental education, solid waste management, waste composition analysis

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