

Understanding Sustainable Waste Management: A Phenomenological Study on Biodegradable Waste Practices in Schools in Negros Oriental

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DOI: <https://doi.org/10.51244/IJRSI.2025.120600170>

Received: 01 June 2025; Accepted: 09 June 2025; Published: 23 July 2025

ABSTRACT

This study examines the biodegradable waste management practices of selected schools in Negros Oriental, focusing on awareness, infrastructure, and community involvement. Findings reveal that effective waste segregation, composting initiatives, and structured monitoring systems play a crucial role in sustainability efforts. Schools face challenges such as inconsistent compliance and resource limitations, but strategic interventions—such as enhanced training programs, improved facilities, and policy reinforcement—significantly improve waste management efficiency. The study highlights the need for continuous education, parental involvement, and technological integration to ensure long-term environmental responsibility. These insights provide actionable recommendations for strengthening biodegradable waste management in educational institutions.

INTRODUCTION

Waste management is an essential aspect of maintaining a sustainable and environmentally responsible educational institution. Among the different types of waste schools produce, biodegradable waste—such as food scraps, paper materials, plant matter, and other organic waste—poses a unique challenge and opportunity. When managed effectively, biodegradable waste can be repurposed into valuable resources such as compost, reducing environmental impact and promoting sustainability within the school community.

Negros Oriental schools have actively implemented solid waste management (SWM) practices to address environmental concerns and promote sustainability. A study conducted in District 2, Bayawan City Division, Negros Oriental, examined the level of awareness and extent of implementation of SWM practices among teachers and students. The research utilized a descriptive-correlational method, gathering quantitative data from 81 teachers and 189 students through survey questionnaires. [Sheena Mae T. Comighud, EdD (2020) "Awareness and Implementation of Solid Waste Management (SWM) Practices in Schools in Negros Oriental"]. [1]

This research delves into the various strategies that schools employ to manage biodegradable waste, emphasizing the significance of waste segregation, composting, and recycling initiatives. The study also highlights the role of administrative policies, student engagement, and collaboration with local government or environmental organizations in fostering effective waste management practices. Furthermore, it explores the impact of proper waste management on environmental awareness and behavior change among students and staff.

Several schools have adopted innovative approaches to biodegradable waste management, incorporating environmental education into their curriculum to encourage sustainable habits among students. These efforts not only improve waste disposal efficiency but also instill ecological responsibility, preparing students to become environmentally conscious citizens. In addition, the study examines how schools optimize their resources to support waste reduction efforts, such as implementing zero-waste programs and collaborating with community initiatives focused on sustainability.

Additionally, the research highlighted the role of schools in fostering environmental consciousness by integrating waste management education into the curriculum. Schools in Negros Oriental have adopted structured waste segregation programs, composting initiatives, and partnerships with local government units to enhance waste management efficiency. However, challenges such as limited resources, inconsistent policy enforcement, and lack of student engagement were identified as barriers to effective implementation. [Sheena Mae T. Comighud, EdD (2020) "*Awareness and Implementation of Solid Waste Management (SWM) Practices in Schools in Negros Oriental*"] [1]

By analyzing these methodologies, this research aims to provide insights into how schools can enhance their biodegradable waste management systems. It underscores the benefits of integrating waste management education with practical applications, reinforcing the importance of sustainable practices within educational institutions.

Ultimately, effective biodegradable waste management in schools contributes to broader environmental conservation efforts, setting a precedent for responsible waste disposal within and beyond school settings. [Charmayne D. Romero (2020)] [1]

Waste management is a crucial component of environmental sustainability, especially in educational institutions that serve as centers for learning and social responsibility. Schools generate significant amounts of biodegradable waste, including food scraps, paper products, garden waste, and other organic materials. Without proper disposal methods, these wastes contribute to environmental degradation, increased landfill accumulation, and potential health hazards. However, when effectively managed, biodegradable waste can be transformed into valuable resources, reducing the ecological footprint of educational institutions.

The implementation of sustainable biodegradable waste management in schools is not solely a matter of disposal but also an opportunity to educate students about environmental conservation. Schools serve as ideal platforms for fostering eco-friendly behaviors and practices, enabling students to actively participate in waste segregation, composting, and recycling initiatives. Through curriculum integration, hands-on projects, and institutional policies, schools can equip students with the knowledge and skills to contribute to waste reduction beyond the classroom.

This study examines the strategies and systems that schools utilize to manage biodegradable waste effectively. It explores the role of structured waste segregation programs, composting facilities, and waste-to-energy innovations within the school environment. Additionally, the research investigates how school administrators, educators, and students collaborate in implementing sustainable waste management practices, as well as the influence of external organizations such as local government units and environmental advocacy groups.

By understanding these aspects, schools can refine their waste management frameworks, improving environmental awareness and operational efficiency while minimizing waste-related concerns. The study aims to provide recommendations that can guide schools in enhancing their biodegradable waste management strategies, ensuring that educational institutions contribute to broader ecological preservation efforts. [Charmayne D. Romero, et al 2025 Social Science Lens: A World Journal of Human Dynamics and Social Relations 2025, Vol. 4, No.1, 127 – 137] [2].

Rationale of the Study

Biodegradable waste management in schools of Negros Oriental is a crucial aspect of environmental sustainability, influencing both ecological conservation and student awareness. Schools generate significant amounts of biodegradable waste, including food scraps, paper products, and garden waste. Without proper management, these materials contribute to pollution, greenhouse gas emissions, and inefficient resource utilization. However, when handled effectively, biodegradable waste can be repurposed into valuable resources such as compost, reducing environmental impact and fostering a culture of sustainability among students and staff.

This research aims to explore the strategies schools implement to manage biodegradable waste, focusing on sustainable practices such as composting, waste segregation, and recycling. Additionally, it examines the role of school policies, student participation, and local government initiatives in ensuring proper waste disposal. By understanding these approaches, educational institutions can refine their waste management systems, promoting eco-friendly habits that benefit both the school community and the broader environment.

Statement of the Problem

This study aims to explore the common practices of schools in Negros Oriental in managing biodegradable waste. Specifically, it seeks to answer the following research question:

What concrete activities are observed in the classroom to strictly integrate or implement proper segregation of waste in school?

How does the school reinforce the proper segregation of waste to be observed in the whole institution?

What are the difficulties observed in the implementation of biodegradable waste management practices?

Philosophical Underpinnings

The management of biodegradable waste in schools in Negros Oriental is deeply rooted in environmental ethics, sustainability principles, and social responsibility. These philosophical foundations shape the policies and practices adopted by educational institutions to ensure proper waste disposal and ecological conservation.

Environmental Ethics and Stewardship

Schools in Negros Oriental integrate the principle of environmental stewardship, which emphasizes the moral responsibility of individuals and institutions to protect and preserve nature. This aligns with Aldo Leopold's Land Ethic, which advocates for a respectful relationship between humans and the environment. Waste management programs in schools encourage students and staff to engage in responsible waste disposal, segregation, and composting, fostering a sense of duty toward ecological sustainability.

Sustainability and Circular Economy

The concept of sustainability, as defined by the Brundtland Report (1987), plays a crucial role in shaping waste management practices. Schools implement zero-waste programs, composting initiatives, and recycling efforts to minimize environmental impact and promote resource efficiency. The circular economy model, which focuses on reducing waste through reuse and regeneration, is evident in school-based composting projects that convert biodegradable waste into organic fertilizer for gardens and agricultural activities.

Social Learning Theory and Behavioral Change

The Social Learning Theory (Bandura, 1977) suggests that individuals learn behaviors through observation and interaction. Schools in Negros Oriental apply this principle by incorporating waste management education into their curriculum, encouraging students to adopt sustainable habits through hands-on activities, peer influence, and community engagement. Waste segregation campaigns and environmental clubs reinforce positive behaviors, ensuring long-term commitment to sustainability.

Policy and Governance Frameworks

The philosophical foundation of utilitarianism, which focuses on maximizing benefits for the greatest number, is reflected in school policies that prioritize efficient waste management systems. Schools collaborate with local government units and environmental organizations to implement Republic Act 9003 (Ecological Solid Waste Management Act of 2000), ensuring compliance with national waste management standards.

Scope and Limitations of the Study

The study focuses on the waste management practices employed by schools in Negros Oriental, particularly in handling biodegradable waste such as food scraps, paper waste, and organic materials from school gardens. It examines several key areas, including waste segregation and disposal methods, which involve how schools classify and manage biodegradable waste separately from other types. Additionally, it explores composting and recycling initiatives, assessing strategies used to repurpose biodegradable waste for sustainability efforts. Another important aspect is educational programs and student participation, which analyze how waste management is integrated into the curriculum and how students engage in eco-friendly practices. Institutional policies and government collaboration also play a crucial role, highlighting the influence of school guidelines, partnerships with local government entities, and compliance with environmental laws such as Republic Act 9003 (Ecological Solid Waste Management Act of 2000). Lastly, the study considers community involvement, examining how schools collaborate with local organizations and communities to promote sustainable waste management initiatives.

While the research aims to provide comprehensive insights into biodegradable waste management in schools, several limitations must be acknowledged. Geographical scope restrictions limit the study to selected schools within Negros Oriental, preventing broader conclusions about nationwide waste management practices. Additionally, resource availability may pose challenges, as limited access to school records, environmental reports, or funding allocations could affect data collection. Variability in implementation is another factor, as waste management practices differ between schools, making it difficult to establish universal conclusions. The effectiveness of waste management efforts may also vary depending on student and staff engagement, influencing overall success rates. Finally, policy enforcement challenges could hinder progress, as some schools may struggle with enforcing waste management regulations due to administrative constraints. Despite these limitations, the study seeks to provide valuable recommendations for improving waste management practices in schools across the region.

Significance of the Study

Studying how schools in Negros Oriental manage biodegradable waste is significant as it highlights the intersection of environmental sustainability, educational development, and community impact. Schools play a crucial role in waste generation, producing biodegradable materials such as food scraps, paper, and garden waste, which, if not properly managed, can contribute to pollution and inefficiency in waste disposal systems. By examining their waste management practices, researchers can assess the effectiveness of composting, segregation, and recycling initiatives, helping schools refine their strategies to reduce environmental harm.

Additionally, integrating waste management education into the curriculum promotes ecological responsibility among students, fostering long-term sustainability habits. Understanding how schools comply with policies such as Republic Act 9003 (Ecological Solid Waste Management Act of 2000) allows for better policy implementation and regulatory improvements.

Furthermore, effective waste management provides economic benefits by repurposing biodegradable waste into compost or energy sources, reducing operational costs for schools while contributing to broader environmental conservation efforts.

Lastly, the study helps identify challenges such as limited infrastructure, inconsistent enforcement, or community participation gaps, paving the way for innovative solutions that can enhance sustainable practices not only in schools but also in the surrounding communities. Through this research, schools can serve as catalysts for responsible waste management, setting an example for future generations and contributing to a healthier environment.

REVIEW OF RELATED LITERATURE

The management of biodegradable waste in schools is a crucial aspect of environmental sustainability, particularly in regions like Negros Oriental, where educational institutions play a significant role in shaping

eco-friendly practices. Several studies have explored waste management strategies in schools, highlighting the importance of structured programs, policy implementation, and student engagement. According to Dizon and Despojo (2024), their study on solid waste management among students at home emphasized the 7Rs of sustainability—Refuse, Reduce, Reuse, Repair, Repurpose, Recycle, and Rot—which are also applicable in school settings [3]. Their findings suggest that awareness and proper waste segregation significantly influence waste reduction efforts. Similarly, the Emergent Framework for Waste Management in Schools (Diongco et al., 2025) discusses how schools in Negros Oriental integrate waste management into their curriculum through color-coded trash bins, composting initiatives, and eco-brick projects, ensuring that biodegradable waste is properly processed [4].

Government policies also play a vital role in shaping waste management practices. The Sangguniang Panlalawigan of Negros Oriental (2021) passed Resolution No. 548, which emphasizes the responsibility of local government units in maintaining ecological balance and enforcing proper waste disposal methods. This resolution aligns with Republic Act 9003 (Ecological Solid Waste Management Act of 2000), which mandates schools to implement structured waste segregation and composting programs. Furthermore, studies from Negros Oriental State University highlight the challenges faced by schools in implementing waste management policies, including limited infrastructure, inconsistent enforcement, and varying levels of student participation [3].

Overall, existing literature underscores the importance of integrating waste management education into school programs, fostering student engagement, and ensuring compliance with environmental policies. By examining these studies, researchers can identify best practices and challenges, ultimately contributing to the development of more effective biodegradable waste management strategies in schools across Negros Oriental.

Operational Definition of Terms

Biodegradable Waste – Organic waste materials that can decompose naturally over time, such as food scraps, paper, and garden waste. Proper management of biodegradable waste helps reduce environmental pollution.

Waste Management – The process of collecting, segregating, recycling, disposing, or repurposing waste in a way that minimizes environmental impact and promotes sustainability.

Composting – A method of converting biodegradable waste into nutrient-rich fertilizer by allowing organic matter to break down through natural decomposition. Schools often use composting to recycle food scraps and garden waste.

Segregation – The process of separating waste based on its type (biodegradable, non-biodegradable, recyclable) to facilitate proper disposal and recycling efforts.

Recycling – The process of reusing and repurposing waste materials into new products to reduce landfill waste and conserve natural resources.

Environmental Sustainability – The practice of using resources responsibly to prevent depletion and ensure long-term ecological balance.

Republic Act 9003 (Ecological Solid Waste Management Act of 2000) – A Philippine law that outlines proper waste management practices, including segregation, recycling, and responsible waste disposal.

Circular Economy – An economic system aimed at eliminating waste by continuously reusing, repairing, and recycling materials. Schools apply this concept in waste reduction strategies.

Environmental Ethics – A branch of philosophy that studies the moral responsibilities of humans toward nature, emphasizing stewardship and sustainable practices.

Social Learning Theory – A psychological theory by Albert Bandura that suggests individuals learn behaviors through observation and interaction, relevant in teaching students sustainable waste management habits.

Policy Implementation – The process of enforcing rules, regulations, and strategies to ensure compliance with environmental laws and waste management initiatives.

Community Engagement – The active participation of schools with local organizations, households, and government units to promote sustainable waste management practices.

Waste-to-Energy

Innovations – Technologies that convert waste into usable energy, such as biofuels or electricity generated from organic waste decomposition.

Resource Optimization – The efficient use of materials and energy to minimize waste and maximize sustainability efforts, often achieved through composting and recycling in schools.

METHODOLOGY

The methodology outlines the approach and processes used to conduct the phenomenological research on how schools in Negros Oriental manage biodegradable waste. It explains how the study investigates the lived experiences, practices, and perceptions of school administrators, teachers, students, and local environmental advocates regarding sustainable waste management.

This research relies on qualitative methods, including in-depth interviews, focus group discussions, field observations, and document analysis, to gather firsthand insights into waste management strategies. Through purposive sampling, participants directly involved in waste disposal, composting, and recycling initiatives are selected to provide rich, experience-based perspectives. Data will be analyzed using thematic analysis, extracting patterns and themes related to philosophical underpinnings such as environmental ethics, sustainability, and behavioral change theories.

Additionally, the methodology ensures ethical research practices, including informed consent, confidentiality, and objective analysis. Ultimately, the approach helps uncover best practices, challenges, and opportunities for schools in Negros Oriental to enhance biodegradable waste management while promoting ecological responsibility.

Research Paradigm

The study is grounded in environmental ethics, sustainability principles, and social learning theory, which influence waste management practices within educational institutions. These philosophies guide the development of structured waste management policies, student engagement initiatives, and school-community collaboration.

The study follows a qualitative phenomenological approach to explore the lived experiences of school stakeholders in biodegradable waste management.

Paradigm Model

Below is a structured diagram representing the Input-Process-Output (IPO) Model, which guides this study:

INPUT:

School Policies – Institutional guidelines, environmental initiatives, and compliance with Republic Act 9003

Educational Frameworks – Integration of waste management in the curriculum and student behavioral influences

Community and Government Collaboration – Partnership with local organizations and waste management programs

Waste Management Methods – Composting, segregation, recycling, and repurposing biodegradable waste

PROCESS:

Data Collection – Interviews, focus group discussions (FGDs), observations, document analysis

Analysis of Philosophical Underpinnings – Application of **Environmental Ethics, Circular Economy, and Social Learning Theory**

Evaluation of Waste Management Practices – Identification of best practices, challenges, and sustainability efforts

Thematic Analysis – Interpretation of qualitative responses through NVivo or manual coding

OUTPUT:

Improved Waste Management Policies – Enhancing guidelines for biodegradable waste handling

Educational Interventions – Strengthening sustainability education among students and educators

Community-Based Waste Management Programs – Expanding eco-friendly initiatives within the larger community

Best Practices and Recommendations – Providing strategies for long-term waste management improvement in schools

Graphical Representation (IPO Framework)

Input	→	Process	→	Output
School Policies	→	Data Collection	→	Improved Policies
Educational Frameworks	→	Philosophical Analysis	→	Enhanced Education
Waste Management Methods	→	Thematic Interpretation	→	Community Programs
Government Collaboration	→	Evaluation of Practices	→	Best Practices

Significance of the Paradigm

The paradigm aligns biodegradable waste management practices in schools with philosophical concepts such as environmental ethics, sustainability, and behavioral change theories. It ensures waste reduction efforts are educational, policy-driven, and participatory, benefiting students, institutions, and the local community.

Research Approach

This study follows a qualitative phenomenological approach, which aims to explore the lived experiences and perspectives of school stakeholders—including administrators, teachers, students, and environmental advocates—on biodegradable waste management.

The research begins with participant selection, using purposive sampling to identify individuals directly involved in waste management within educational institutions. Schools implementing waste disposal programs, composting systems, and eco-friendly initiatives are prioritized.

Following participant selection, data collection is carried out through semi-structured interviews, focus group discussions (FGDs), observations, and document analysis. Interviews and FGDs allow for deep exploration of perspectives, while observations provide firsthand accounts of waste management practices in school settings. Document analysis involves reviewing institutional policies, environmental programs, and compliance with laws such as Republic Act 9003 (Ecological Solid Waste Management Act of 2000) to understand regulatory influences.

How the Approach Unfolds

Once data is collected, the study proceeds with thematic analysis to identify recurring patterns and insights. Qualitative data is transcribed, coded, and categorized into emerging themes such as policy effectiveness, student engagement, waste disposal methods, and sustainability education. These themes are then analyzed through the lens of philosophical underpinnings, particularly environmental ethics, sustainability principles, and social learning theory, to establish connections between practical waste management efforts and their theoretical foundations.

To ensure research integrity, ethical considerations such as informed consent, confidentiality, and unbiased questioning are upheld throughout the process. Findings are then synthesized into recommendations for policy improvements, educational interventions, and community collaboration, contributing to enhanced waste management efforts in schools.

Research Design

This study will adopt a qualitative phenomenological approach to explore the experiences, perceptions, and practices of school administrators, teachers, students, and local environmental advocates in managing biodegradable waste. Phenomenology seeks to uncover lived experiences, making it suitable for understanding the implementation of waste management strategies and their alignment with philosophical underpinnings such as environmental ethics, sustainability, and social responsibility.

Research Locale

This study explores how biodegradable waste is managed in schools across Negros Oriental, involving direct engagement with school personnel—including administrators, teachers, and students—to understand institutional waste management practices. The data collection process is designed to capture firsthand insights, lived experiences, and institutional frameworks that guide biodegradable waste disposal and sustainability initiatives within educational institutions.

To ensure comprehensive data gathering, this study employs a qualitative phenomenological approach, focusing on purposive sampling to select key informants who actively participate in waste management systems. The research locale consists of various schools across Negros Oriental, particularly those implementing structured waste segregation, composting, and recycling programs. School personnel, including environmental officers, faculty members, sustainability coordinators, and student eco-clubs, serve as primary respondents.

Data collection methods include semi-structured interviews, allowing respondents to express their perspectives on waste reduction efforts, institutional challenges, and compliance with environmental policies such as Republic Act 9003 (Ecological Solid Waste Management Act of 2000). Focus group discussions (FGDs) will also be conducted to foster collaborative dialogue among stakeholders regarding best practices and barriers to biodegradable waste management. Additionally, participant observations within school premises will provide real-time assessments of waste handling protocols, facility utilization, and behavioral engagement in sustainability initiatives.

By integrating document analysis, institutional reports, environmental policies, and sustainability action plans will be reviewed to assess the alignment of school waste management practices with national and local

regulations. Ethical considerations, including informed consent, confidentiality, and objective reporting, will be strictly observed throughout the research.

This study aims to provide an in-depth evaluation of biodegradable waste management strategies in Negros Oriental schools, linking them to environmental ethics, sustainability principles, and social learning theory to propose meaningful recommendations for improving waste disposal systems in educational institutions.

Participants of the Study

Primary Participants (Directly Involved in Waste Management)

School Administrators – Principals, department heads, and sustainability officers responsible for waste management policies and institutional compliance with environmental laws.

Teachers and Educators – Faculty members integrating waste management education into the curriculum, promoting student engagement in eco-friendly initiatives.

Students – Members of eco-clubs, environmental advocacy groups, and student organizations actively participating in school waste management programs.

School Maintenance and Utility Personnel – Janitors, facility managers, and sanitation workers responsible for the collection, segregation, and disposal of biodegradable waste within school premises.

Secondary Participants (Supporting and Regulating Waste Management)

Local Government Representatives – Officials from the Municipal Environment and Natural Resources Office (MENRO), Barangay Environment Committees, and Sangguniang Panlalawigan, ensuring compliance with Republic Act 9003 and local waste management regulations.

Environmental Advocacy Groups and NGOs – Organizations working with schools to implement sustainability projects such as composting, recycling, and waste-to-energy solutions.

Parents and Guardians – Community members contributing to waste reduction efforts by reinforcing eco-conscious behaviors at home and supporting school initiatives.

Private Sector Representatives – Local businesses, recyclers, and sustainability entrepreneurs collaborating with schools on responsible waste disposal and repurposing biodegradable materials.

Additional Informants (Providing Broader Context and Expert Knowledge)

Academic Researchers and Sustainability Experts – Professors and scholars studying waste management systems, circular economy models, and environmental policies in educational institutions.

Policy Makers and Environmental Lawyers – Experts on ecological waste management laws who can provide legal perspectives on policy enforcement and institutional responsibilities.

Including a diverse group of participants ensures a comprehensive understanding of biodegradable waste management in schools, highlighting both practical implementation and philosophical underpinnings such as environmental ethics, sustainability, and behavioral change theories.

Sampling Technique

This study will employ purposive sampling, a non-probability sampling method used to select participants who are directly involved in biodegradable waste management within schools in Negros Oriental. Purposive sampling ensures that only individuals and institutions with active waste management programs are included,

providing relevant and meaningful insights into institutional policies, sustainability efforts, and community engagement in waste disposal.

The selection process will identify schools with structured waste management systems, including those implementing composting, recycling, and eco-friendly waste segregation initiatives. Factors such as school size, government compliance, and level of student participation will be considered when choosing research sites. By focusing on schools actively involved in sustainability, the study ensures that collected data reflects best practices, challenges, and innovations in biodegradable waste management.

Participant Categories

The research will involve various key stakeholders from educational institutions to provide a multi-perspective analysis of waste management practices:

School Administrators – Including principals, department heads, and sustainability officers responsible for overseeing institutional waste management policies, compliance with Republic Act 9003 (Ecological Solid Waste Management Act of 2000), and collaborations with local agencies.

Teachers and Educators – Faculty members responsible for integrating biodegradable waste management into educational curricula by incorporating environmental awareness and sustainability concepts into lesson plans and activities.

Students and Student Organizations – Members of eco-clubs, environmental teams, and sustainability committees actively participating in composting, waste segregation, and awareness campaigns within the school community.

Maintenance and Utility Personnel – Janitors, sanitation workers, and facility managers handling daily waste disposal operations, providing firsthand observations on school waste management efficiency and challenges.

Local Government Representatives – Officials from the Municipal Environment and Natural Resources Office (MENRO), Barangay Environmental Committees, and City Waste Management Divisions, who collaborate with schools to implement proper waste disposal policies and sustainability projects.

Environmental Advocacy Groups and NGOs – Organizations working with schools to promote responsible waste disposal, assist in recycling programs, and conduct training sessions on environmental stewardship.

Parents and Community Members – Individuals involved in reinforcing waste reduction habits at home, ensuring continuity between school-based waste management education and household practices.

Academic Researchers and Experts – Scholars specializing in environmental science, waste management strategies, and sustainability education, contributing theoretical knowledge and technical expertise to enhance school-based biodegradable waste initiatives.

By including diverse participants, the study ensures a comprehensive understanding of waste management from institutional, community, and policy perspectives. The insights gathered from these stakeholders will provide recommendations for improving waste management policies, strengthening environmental education, and fostering sustainability initiatives in schools across Negros Oriental.

Research Methods

To ensure a comprehensive understanding of biodegradable waste management practices in schools across Negros Oriental, this study employs multiple qualitative data collection methods. These approaches will facilitate a deep exploration of the experiences, challenges, and institutional frameworks guiding waste disposal and sustainability initiatives within educational institutions.

In-depth Interviews

Interviews will be conducted with key stakeholders in waste management, including school administrators, faculty members, maintenance personnel, and student leaders involved in disposal efforts. These semi-structured interviews will allow for open-ended responses, providing rich qualitative insights into the successes and challenges of implementing sustainable waste management practices. Questions will explore policy compliance, institutional strategies, student engagement, and perceptions of biodegradable waste handling in the school environment.

Focus Group Discussions (FGDs)

FGDs will be organized to facilitate collaborative discussions between students, educators, sustainability coordinators, and local environmental advocates. These sessions will capture shared experiences and identify collective insights on waste reduction efforts, composting practices, and recycling initiatives. FGDs will also help analyze how philosophical underpinnings—such as environmental ethics, sustainability principles, and social learning theory—influence participants' perspectives on waste management.

Participant Observation

To document real-time practices, participant observation will be conducted within school environments, focusing on daily waste segregation, composting facilities, recycling stations, and student-led initiatives. Observing waste management activities firsthand will allow researchers to assess compliance with policies such as Republic Act 9003 (Ecological Solid Waste Management Act of 2000) and the extent of student participation in eco-friendly programs. This method will also help identify barriers to proper waste disposal and potential areas for improvement in institutional waste management frameworks.

Document Analysis

Institutional reports, environmental policies, and sustainability action plans will be analyzed to determine how schools' structure their waste management programs. This includes reviewing:

School waste management guidelines and standard operating procedures

Reports on biodegradable waste segregation, composting, and recycling efforts

Local government ordinances and DepEd policies influencing waste management in schools

Studies and sustainability impact assessments from Negros Oriental State University and other educational institutions

By integrating these four qualitative methods, this study ensures a well-rounded evaluation of waste management strategies in schools, providing meaningful recommendations for improved policies, sustainability education, and institutional waste reduction efforts.

Research Instruments

This study employs thematic analysis, a qualitative method used to identify patterns, themes, and relationships within the collected data. Thematic analysis is well-suited for phenomenological research, as it allows researchers to explore participants' subjective experiences, perceptions, and institutional waste management practices in an open-ended and flexible manner. Through this process, data from interviews, focus group discussions (FGDs), observations, and document analysis will be systematically transcribed, coded, and categorized, ensuring a comprehensive exploration of how schools in Negros Oriental manage biodegradable waste.

Phases of Thematic Analysis

Data Familiarization – Raw qualitative data from interviews, FGDs, and observations will be transcribed and reviewed to gain an in-depth understanding of participants' perspectives. This step ensures researchers recognize common waste management issues and sustainability efforts across schools.

Initial Coding – Using manual coding or qualitative data analysis software (e.g., NVivo), the transcripts will be segmented into meaningful data units, identifying recurring keywords, phrases, and behaviors related to waste segregation, composting, policy enforcement, and student engagement.

Theme Identification – Codes will be grouped into broader themes, such as institutional support, community participation, environmental education, and regulatory compliance.

Theme Review and Refinement – Identified themes will be cross-checked with raw data to ensure consistency, eliminating redundant patterns and strengthening the analytical framework.

Philosophical Interpretation – Findings will be interpreted through environmental ethics, circular economy principles, and social learning theory, examining how biodegradable waste management practices align with sustainability concepts.

Final Reporting – Themes will be structured into meaningful insights, contributing to recommendations for policy enhancements, school waste reduction strategies, and educational interventions.

How Data Analysis Functions as a Research Instrument

Thematic analysis acts as a research instrument by systematically organizing qualitative data and extracting actionable insights related to biodegradable waste management. Through coding and categorization, the study identifies patterns in participant experiences, allowing for meaningful interpretations that guide policy recommendations and sustainability efforts. Additionally, the incorporation of philosophical frameworks ensures that the findings are not only practical but also ethically and theoretically grounded, offering a holistic view of waste management within educational institutions.

Ethical Considerations

To ensure ethical integrity throughout the research process, the study will adhere to rigorous ethical standards in conducting qualitative research on biodegradable waste management in schools in Negros Oriental. Ethical considerations are essential in maintaining the credibility, fairness, and reliability of the study while ensuring the rights and well-being of all participants. The following measures will be implemented:

Informed Consent – Participants will be fully informed about the purpose, scope, and objectives of the study before agreeing to participate. Informed consent forms will detail the voluntary nature of participation, the procedures involved, and participants' right to withdraw at any stage. Consent will be obtained from school administrators, teachers, students, and local environmental advocates involved in the research.

Confidentiality and Anonymity – All personal identities and sensitive information provided by respondents will be kept strictly confidential. Data collected from interviews, focus group discussions, and observations will be anonymized to prevent any direct attribution to individual participants. Schools and institutions involved in the study will be referred to generically unless explicit permission for identification is granted.

Avoidance of Bias – To maintain objectivity and fairness, interview questions and discussions will be designed to minimize researcher bias and ensure a balanced representation of perspectives. Participants' responses will be analyzed impartially, avoiding any leading questions or personal assumptions that could influence findings. The study will ensure a diverse range of participants, including students, educators, administrators, and policy makers, to capture varied experiences in waste management.

Adherence to Ethical Guidelines – The research will comply with ethical standards set for educational and environmental research, including guidelines from institutional review boards (IRB), environmental policies, and the Philippine National Ethical Guidelines for Research. The study will respect cultural sensitivities, ensuring that discussions on waste management reflect the realities and challenges specific to Negros Oriental.

Data Security and Responsible Use – All collected qualitative data, transcripts, and reports will be stored securely and used exclusively for academic research purposes. Digital and physical records will be protected against unauthorized access, ensuring compliance with privacy laws and institutional data protection policies.

Transparency and Accountability – Findings will be accurately represented in research reports and publications, ensuring transparency in reporting school-based waste management practices. Results will be shared responsibly with educational institutions, policymakers, and environmental advocates to help inform future sustainability initiatives while maintaining ethical integrity in dissemination.

By implementing these ethical measures, the study ensures that participants' rights, confidentiality, and contributions are respected, fostering a trustworthy and responsible research environment that upholds integrity in qualitative inquiry.

Narrative Reflection

Conducting this study on how schools in Negros Oriental manage biodegradable waste has provided profound insights into the realities of sustainability in educational institutions, uncovering both successes and challenges in the implementation of waste management strategies. The research journey was not merely about observing waste disposal methods, but rather understanding the lived experiences of school administrators, teachers, students, and community stakeholders as they navigate the intersection of policy enforcement, environmental ethics, and behavioral change.

One of the most compelling observations from the study was the active participation of schools in fostering a culture of environmental responsibility. Many institutions have integrated waste segregation and composting into daily school routines, ensuring that biodegradable waste is properly disposed of or repurposed into useful materials such as fertilizer for school gardens. This reflects core sustainability principles, highlighting how educational spaces can serve as living laboratories for ecological stewardship. Students, in particular, emerge as key drivers of change, enthusiastically engaging in waste reduction initiatives such as eco-clubs, recycling projects, and awareness campaigns, reinforcing the idea that environmental consciousness is best cultivated through hands-on learning experiences.

At the institutional level, the study also revealed policy strengths and gaps. While many schools actively implement waste management programs in compliance with Republic Act 9003 (Ecological Solid Waste Management Act of 2000), enforcement consistency and infrastructure limitations often hinder the full realization of sustainability goals. For instance, some schools struggle with insufficient composting facilities, while others face challenges in proper segregation due to a lack of student and faculty engagement or logistical constraints. Yet, despite these obstacles, there is a clear commitment among educators and administrators to refine waste management policies and foster a more environmentally conscious school environment.

The community aspect of waste management became another critical theme throughout the research. Schools do not function in isolation; their waste management practices influence and are influenced by local government units (LGUs), barangay environmental programs, and broader municipal waste policies. Collaborative efforts between schools and environmental organizations in Negros Oriental prove vital in ensuring effective waste reduction efforts, with some institutions successfully partnering with NGOs, sustainability advocates, and recycling industries to support eco-friendly programs.

Reflecting on the philosophical underpinnings of waste management, this study reinforced the idea that environmental ethics and sustainability theories are deeply embedded in the decision-making processes of educational institutions. The principle of environmental stewardship, inspired by Aldo Leopold's land ethic, surfaced repeatedly in school initiatives that prioritize responsibility and care for nature. Likewise, the

application of social learning theory was evident in how students learned sustainable behaviors through peer influence, teacher guidance, and practical engagement.

Ultimately, this study has illuminated the multifaceted nature of biodegradable waste management in schools. It is not simply a matter of disposing of organic waste—it is about cultivating a mindset of sustainability, ensuring that both institutional policies and individual behaviors align with long-term environmental goals. While challenges remain, the dedication of schools in Negros Oriental to responsible waste management reflects an encouraging shift toward sustainability, proving that education and ecological responsibility must go hand in hand.

RESULTS AND DISCUSSIONS

Question #1.

What are the concrete activities you have observed in the classroom to strictly integrate or implement proper segregation of waste in school?

Emergent Themes:

- Color-Coded Bins
- Segregation Monitors
- Recycling Projects
- Composting Programs

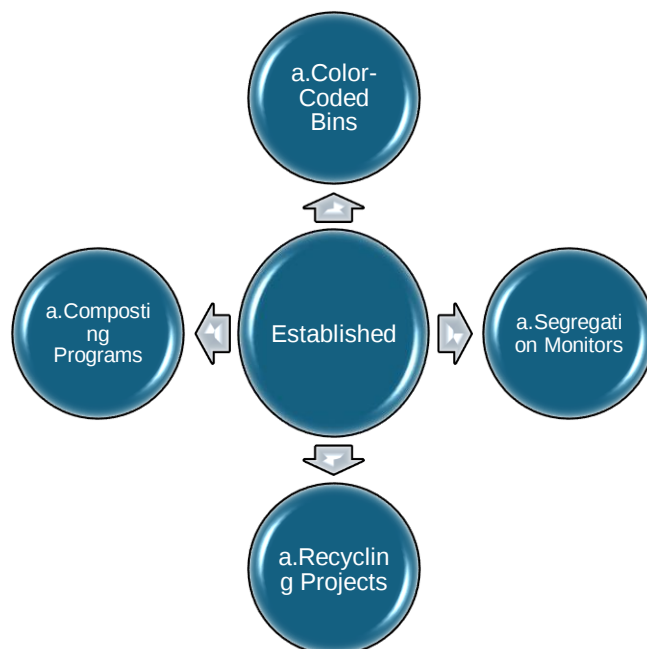


Figure 1. Emergent Framework 1

First, schools should initiate awareness and education programs by designing workshops and conducting seminars for students, teachers, and staff. These sessions should focus on the significance of waste management and its environmental impact, leveraging the expertise of local environmental groups. Moreover, according to Shikha Jyoti Borah & Vinod Kumar (2024) in the *Fundamental Principles of Waste Management for a Sustainable Circular Economy*, integrating waste management topics into the school curriculum, emphasizing the 7Rs of Sustainability—Refuse, Reduce, Reuse, Repair, Repurpose, Recycle, and Rot—will ensure that students grasp the fundamental concepts and practices of sustainable waste management. Our group interviewed different individuals in random schools to gather information related to this framework.

Participant 1(2025):

” In our School, there are several concrete activities we observed to strictly integrate and implement proper segregation of waste. We have Color-Coded Trash Bins – our School Head provides us 3 bins, separate bins for biodegradable, non-biodegradable, and recyclable waste, we labeled and color-coded it, Color Green for Malata, color yellow for dili malata, color red for recyclable, for easy identification of the learners. We also have Educational Campaigns and Posters – Teachers integrate lessons on waste segregation into subjects and display posters as visual reminders in the classroom. We have also Project-Based Learning Activities. We requires projects made of recyclable materials.”

Participant 2(2025):

“As a teacher at Bayawan National High School, I have observed several activities that promote proper waste segregation within the campus. These initiatives not only help maintain a clean and safe environment but also educate students about the importance of responsible waste management, like composting of biodegradable waste. I’ve observed students collecting food scraps and dried leaves, which are then processed into compost for the school garden. This activity helps students understand the natural recycling process and its positive impact on the environment.”

Participant 3(2025):

“During a school event, I noticed how students and teachers work together to maintain cleanliness through their regular clean-up drives. I saw them separate the collected trash into different categories, and I was impressed by how disciplined the students were when it came to proper waste segregation.”

Participant 4(2025):

“In our classrooms, teachers and students work together to practice proper waste segregation. We have labeled trash bins to ensure that biodegradable waste is disposed of properly. Teachers also incorporate environmental topics in lessons, encouraging students to be more mindful of their waste. Some classrooms have eco-bricks projects, where students fill plastic bottles with non-biodegradable waste to be used in school projects”

Next, schools should set up waste segregation systems by installing color-coded bins in strategic locations such as classrooms, cafeterias, and hallways. Proper training for students on waste segregation should be organized, using engaging methods like interactive activities or role-playing to enhance learning and participation. Establishing composting facilities within the school premises is another crucial step. Schools can create compost bins or pits in designated areas and maintain them properly. Conducting hands-on composting workshops will help students and staff understand the composting process and its benefits, encouraging them to bring organic waste from home to contribute.

Participant 5(2025):

“In Junior and Senior High level, all our co-teachers practicing the integration and segregation of waste disposal. Some of them apply the recycling method specifically in plastic bottles. They turn plastic bottles into unique decorations, like flowers, pots and even in the garden they use these bottles as margins or guides. In the implementation of proper waste segregation, in my survey to my co-teachers they also apply the segregation of waste to minimize and help our environment free from any form of “something hugaw” and possible accident specifically in hazardous waste.”

Participant 6(2025):

“In my advisory, implementing proper waste disposal is very important, especially in industrial arts. Practicing the proper waste disposal can help them to take individual responsibility and can motivate them to perform not in school but also at home.”

Participant 7(2025):

“In our school, each classroom has three color-coded trash bins labeled for biodegradable, non-biodegradable, and recyclable waste, making it easier for students to sort their trash. Around our campus, we have also placed additional trash bins to prevent students from throwing their garbage anywhere. We put up slogans or inspirational messages to remind them not to forget about their trash.”

Question #2

How do the school reinforce the proper segregation of waste to be observed in the whole institution?

Emergent Themes:

- Institution-Wide Waste Management Policy
- Regular Training and Workshops
- Segregation Monitoring Committees
- Creative Incentives and Campaigns



Figure 2. Emergent Framework 2

Fostering partnerships and collaborations is essential for the framework's success. Schools should engage with local government units (LGUs) to align their waste management practices with community initiatives. We have a few who could attest that it's crucial that the community is involved in ensuring that waste management is implemented.

Study concluded that awareness is inadequate to ensure participation of pupils in waste segregation. Learning by doing is indeed a good start toward a greater solution for these problems. Allowing waste generators to participate in the planning and implementation of SWM may create a great impact on the success of the plan. The study recommends to design school-based SWM Program that builds positive attitudes, knowledge and skills in segregation, continuously educates pupils to build their attitude, develops a culture that gives importance to cleanliness of the surroundings and a culture that sees segregation as a normal routine, implements projects that utilize teaching and learning strategies that integrate meaningful community service with instruction and reflection to enrich the learning experiences, creates and imposes policies that will lead to decreased residual wastes, and to integrate waste management with composting in the grade school curriculum (Mita A. Parocha, et al. Letran-Calamba Journal of Institutional Research and Development) vol. 1 no. 2 (2015).

Participant 1(2025):

“Bayawan National High School has partnered with local environmental organizations to conduct seminars and workshops about proper waste management. We also collaborate with the city’s waste management office for proper disposal and recycling of collected waste. The school recognizes classes that consistently follow waste segregation rules, which motivates students to participate actively.”

Participant 2(2025):

“Through making policies regarding to proper segregation of waste and involving everyone in school including the faculty and staff and all the stakeholders that has a role in our school. Train teachers and staff on proper waste segregation and encourage them to set an example. We had also designated an environmental officer or committee to oversee waste management in the school such as the YES-Organization. We also collaborated with local government and organizations. We have worked with municipal waste management offices or NGOs for training and support. We have also implemented school policies in alignment with local environmental laws and programs. By combining education, infrastructure, enforcement, and active participation, schools can create a culture of responsible waste management and contribute to a cleaner environment.”

Participant 3(2025):

“Our school has an environmental committee that regularly monitors waste management practices. We conduct information campaigns, such as posters and discussions during flag ceremonies, to remind students about the importance of proper segregation. Additionally, we collaborate with local government units and environmental organizations for training sessions and workshops on effective waste management.

Participant 4(2025):

“The school takes a comprehensive approach to reinforce proper waste segregation across the entire institution. One of the most significant ways is through a whole-school policy that mandates proper waste segregation in all areas—classrooms, hallways, canteens, and even outdoor spaces. This policy is communicated to everyone, from students to staff, and is reinforced through regular reminders and announcements.

Participant 5(2025):

“The school has established a waste management committee that regularly checks the campus to make sure the waste segregation guidelines are being followed. This committee is made up of both students and staff, with the students often taking the lead in promoting proper waste disposal through peer-to-peer education and reminders.

We also integrate waste segregation into the curriculum. Teachers incorporate discussions about environmental conservation and waste management into their lessons, especially in subjects like Science and Social Studies, to help students understand the importance of these practices.”

Participant 6(2025):

“In our school, we organized annual waste management awareness campaigns, where students participate in activities like waste audits, sorting competitions, and workshops on recycling and composting. These campaigns are fun, educational, and encourage active participation.

The school also provides incentives for the classes or teams that consistently practice proper waste segregation, such as extra break time or recognition during school events. These rewards motivate students to maintain their commitment to sustainability.

Participant 7(2025):

“Formulation of School-Specific Waste Management Policies: Schools create and implement policies specific to their needs, which are aligned with national regulations and encourage environmental responsibility.

Incorporation into the Curriculum: Environmental education, including waste segregation and management, is integrated into different subjects to inculcate awareness and responsibility among students. Availability of Segregated Waste Bins: Strategically located, appropriately labeled bins of various types (biodegradable, recyclable, non-recyclable) are made available across the campus to promote healthy disposal habits.

Setup of Composting Grounds: Composting grounds where biodegradable waste is recycled into organic compost, which may be utilized within school gardens or donated to the community.”

Additionally, schools emphasize the use of eco-friendly materials and discourage the use of single-use plastics. By promoting environmentally responsible practices in all programs and activities, they significantly reduce the amount of non-biodegradable waste generated.

Through these detailed and multifaceted strategies, schools in Negros Oriental are effectively managing biodegradable waste, promoting environmental sustainability, and instilling a sense of ecological responsibility in their students. These efforts ensure that the next generation is well-equipped to contribute to a healthier and more sustainable environment.

Question #3

What are the difficulties you have observed in the implementation?

Emergent Themes:

- Lack of Awareness and Education
- Resource Limitations
- Improper Use of Trash Bins
- Inconsistency in Practices Across Schools

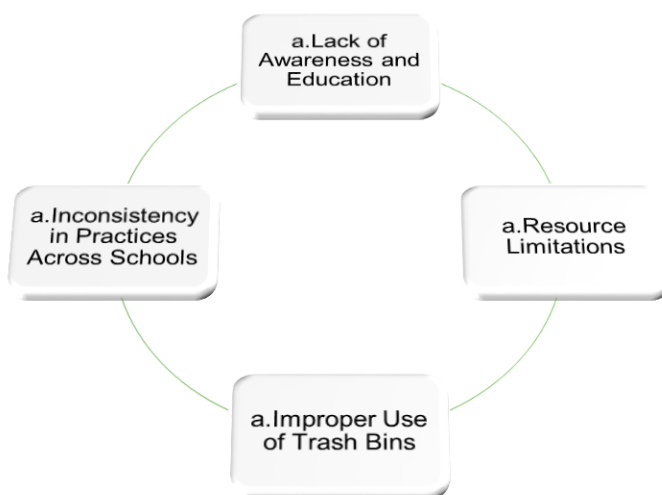


Figure 3. Emergent Framework 3

Implementing biodegradable waste management in schools in Negros Oriental faces several significant challenges that require detailed and coordinated efforts to overcome. One major challenge is the lack of awareness and education among students and staff regarding the importance of proper waste segregation and composting. Without a clear understanding of these practices, individuals may engage in improper disposal, undermining waste management initiatives. Additionally, schools often struggle with insufficient resources, such as composting bins, tools, and educational materials, which are essential for effective waste management. This scarcity of resources can hinder the implementation and sustainability of waste management programs.

According to Chadar and Keerti (2017), the classifications of solid wastes are municipal, industrial, and hazardous. Household activities of human beings produce municipal waste. Meanwhile, industrial activities produce industrial waste. Lastly, the substances that cause hazards to plants, animals, and human beings produce hazardous waste. Correspondingly, Chand (2019) noted that the categories of solid waste are hazardous and non-hazardous, which are, in turn, split into biodegradable and nonbiodegradable. Municipal solid wastes include paper, plastic, cloth, metal, glass, and other organic materials, along with waste from homes and businesses. Although they must be collected and processed separately, hospital and nursing home wastes are included in the municipal solid waste in most cities and municipalities.

One of the many social and environmental issues that student households deal with is solid garbage. This is a pressing problem at global, national, and local levels because poor solid waste management can result in flooding, water shortages, water contamination, adverse health effects, and rehabilitation expenses that could be too much for the municipality to handle (Koop & van Leeuwen, 2017). In like manner, Chadar and Keerti (2017) confirmed some of the environmental impacts and health hazards caused by solid waste problems. These environmental impacts include contaminated liquids from dumps that permeate the ground and pollute groundwater; roadside trash left by scavengers and stray animals which causes aesthetic damage; burned plastic and rubber produce foul smells; and organic solid waste produces foul odor during decomposition and pollutes the environment. Meanwhile, various illnesses, including endemic typhus, bacillary dysentery, diarrhea, amoebic dysentery, plague, salmonellosis, trichinosis, jaundice, hepatitis, and gastro enteric disorders, are caused by health hazards (Mel Joan B. Dizon, Dr. Antonia Gueyndoline B. Despojo (2024).

Therefore, controlling solid waste is crucial to lowering solid waste pollution and establishing a clean and pollution-free environment.

Participant 1(2025):

” Improper Use of Trash Bins – Despite having color-coded and labeled bins, students sometimes dispose of waste in the wrong bin due to negligence.

Time Constraints in Classrooms – sometimes Teachers are too focused on academic activities, leaving little time for proper waste management education and reinforcement.”

Participant 2(2025):

“Students are off to be reminded always of proper disposal of garbage.”

Participant 3(2025):

" One of the difficulties I observed is the confusion among some students about which bin to use, especially when dealing with mixed waste like food wrappers with plastic and paper components. Despite the labels on the bins, some students still get confused, which leads to improper segregation.”

Another issue is the inconsistency in waste management practices across different schools. While some schools may have well-established programs and procedures, others may lack the necessary systems, leading to varied levels of effectiveness in managing biodegradable waste. Community involvement also poses a challenge, as engaging residents and securing their support for waste management initiatives can be difficult. Without strong community backing, schools may find it challenging to sustain their efforts over the long term.

Monitoring and enforcement of waste management policies require regular oversight, but many schools lack the necessary personnel or systems to ensure compliance. This gap can result in lax adherence to waste management practices, and further complicating efforts to manage biodegradable waste effectively. Infrastructure limitations add another layer of difficulty, as some schools may not have designated composting areas or adequate facilities for waste segregation, impeding the proper handling of biodegradable waste.

Participant 4(2025):

“A common challenge we face is the inconsistency in practice. While some students diligently follow the segregation rules, others tend to ignore them, especially when no one is monitoring. Sustaining their commitment to proper waste segregation requires continuous reminders and reinforcement.”

Participant 5(2025):

“At Bayawan National High School, I’ve noticed that sometimes the bins become full, especially hallways, canteens, and near classrooms. When this happens, some students end up throwing their trash in the wrong bin or leaving it on top. To address this, the collection and disposal process needs to be more frequent in these areas to avoid overflow and maintain proper waste segregation.”

Behavioral change is perhaps one of the most significant challenges, as it involves altering long-standing habits and attitudes towards waste disposal. Encouraging students and staff to adopt new waste management habits requires continuous education and reinforcement. This ongoing effort is crucial to foster a culture of sustainability and environmental responsibility within the school community.

Participant 6(2025):

“I believe that the main reason why policies about proper waste segregation was disobeyed maybe it’s because of lack of awareness and education. Some students and stakeholders don’t instill in their minds the importance of proper waste segregation. There were also misconceptions about what materials belong in each bin. Some also experiences inconsistent training or lack of proper orientation on waste management.”

Participant 7(2025):

“As I had observed in some of the classrooms, there were insufficient trash bins. We also lack some facilities that manage proper the segregation of waste. Our school principal had a plan on building a material recovery facility or MRF but until now it has not built yet. We also had a problem about having poorly placed waste bins which makes segregation inconvenient.

I think it is because of some factors that can hinder the implementation of proper segregation of waste. These factors include the negative behavior of the students toward the policies being implemented. It also includes some cultural factors. Habits of convenience, such as throwing all waste in one bin. Cultural attitudes that do not prioritize environmental responsibility. Resistance from older generations unfamiliar with proper waste segregation practices. We have also experienced inefficient collection and disposal systems. That is all, thank you.”

Addressing these challenges necessitates a multifaceted approach that includes enhancing awareness and education, securing resources, standardizing practices, fostering community involvement, ensuring robust monitoring and enforcement, improving infrastructure, and promoting behavioral change. By tackling these areas comprehensively, schools in Negros Oriental can create a more effective and sustainable biodegradable waste management system.

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Based on the findings gathered from online sources and participants from selected schools in Negros Oriental, the study led to several key conclusions and recommendations for improving biodegradable waste management. First, enhancing awareness and training programs is essential to ensure that students, staff, and

parents understand proper waste management practices and their environmental impact. Education fosters informed and responsible waste disposal habits, encouraging behavioral change. Additionally, improving infrastructure and resource accessibility is crucial. Adequate tools, such as waste bins and composting facilities, facilitate proper segregation and disposal, making sustainable practices more efficient and convenient. Establishing monitoring and accountability systems also plays a significant role in ensuring compliance with waste disposal practices. Structured oversight prevents lapses in implementation and motivates consistent efforts.

Community involvement is another vital factor in strengthening waste management initiatives. Engaging stakeholders in collective action fosters shared responsibility and long-term success. Similarly, regular maintenance of waste bins prevents overflow and enhances cleanliness, eliminating inconveniences that could lead to improper disposal. Schools can further encourage participation through interactive learning activities, making waste management concepts more engaging and memorable for students. Parental involvement also reinforces waste segregation practices, ensuring that students apply their learning both at school and home. School-level contests and initiatives serve as additional motivators, inspiring students and staff to engage in sustainable practices through friendly competition.

Infrastructure improvement projects, such as the establishment of recycling stations and composting areas, enhance the efficiency and scope of waste management programs, reducing overall environmental impact. Policy reinforcement and a feedback system help maintain consistency and adaptability, ensuring that challenges are addressed effectively. Furthermore, creating waste management advocates within the school community can significantly influence behavioral change. Peer-led initiatives foster a culture of environmental responsibility. Lastly, integrating technology into waste management practices allows for improved monitoring, reporting, and awareness campaigns, making efforts more effective and transparent. These collective strategies establish a comprehensive approach to sustainable waste management in schools. Let me know if you'd like me to refine or expand certain sections!

Recommendations

Based on the above findings that we have gathered from the online sources and participants from the selected schools in Negros Oriental, we come up with the following conclusions:

Enhance Awareness and Training Programs

These programs ensure students, staff, and parents understand proper waste management practices and their environmental impact. Awareness is the first step in encouraging behavioral change. By educating the community, it fosters informed and responsible waste disposal habits.

Improve Infrastructure and Resource Accessibility

Access to the necessary tools (e.g., bins and composting facilities) ensures proper waste segregation and disposal. Infrastructure directly supports sustainable practices. Adequate resources prevent improper disposal and make waste segregation convenient and efficient.

Establish Monitoring and Accountability Systems

Monitoring ensures compliance with waste disposal practices, while accountability motivates consistent efforts. It creates a structured approach to waste management, preventing lapses in implementation.

Promote Community Involvement and Behavioral Change

Community engagement strengthens waste management initiatives by encouraging collective action and shared responsibility. When everyone participates, efforts are amplified, ensuring long-term success and sustainability.

Regular Maintenance of Waste Bins

Preventing bin overflow and maintaining cleanliness enhances proper disposal and eliminates inconvenience. It reduces littering and encourages adherence to waste segregation rules.

Interactive Learning Activities

Engaging students through fun and hands-on activities fosters a deeper understanding of waste management practices. It makes learning memorable and cultivates lifelong habits.

Parental Involvement in Waste Management

Educating parents encourages consistent waste disposal practices at home, complementing school initiatives. It builds a holistic environment where students practice waste segregation both at school and home.

School-Level Contests and Initiatives

Competitions motivate students and staff to actively engage in waste management practices through friendly challenges. Recognition and rewards foster a positive attitude toward sustainability.

Infrastructure Improvement Projects

Advanced facilities, such as recycling stations and composting areas, enhance the efficiency and scope of waste management programs. Well-equipped schools can handle waste disposal effectively and reduce environmental impact.

Policy Reinforcement and Feedback System

Clear policies establish guidelines for proper disposal, while feedback systems allow continuous improvement. Policies maintain consistency, and feedback encourages adaptability to emerging challenges.

Create Waste Management Advocates

Advocates serve as role models, educating peers and reinforcing waste management practices throughout the school. Peer-led initiatives often have a stronger influence on behavioral change.

Integrate Technology

Digital tools improve monitoring, reporting, and awareness campaigns, making waste management more effective and transparent. Technology streamlines the process and engages the community through innovative approaches.

Comprehensive Action Plan for Effective School Waste Management

Actionable Recommendations	Activities	Responsible Personnel	Resources Needed	Projected Cost	Timeline
1. Enhance Awareness and Training Programs	Conduct workshops Develop handouts	Teachers; Environmental Advocates	Training materials, projectors, handouts	₱5,000- ₱10,000	Month 1
	Organize seminars on waste				

	segregation				
2. Improve Infrastructure and Resource Accessibility	Install color-coded bins Build compost areas Add signage for waste segregation	Maintenance Team; LGU Partners	Bins, compost bins, signage materials	₱10,000- ₱25,000	Month 2
3. Establish Monitoring and Accountability Systems	Create monitoring teams Implement peer reviews Introduce incentive programs	Waste Management Committee	Monitoring sheets, reward materials	₱5,000- ₱10,000	Months 3–4
4. Promote Community Involvement and Behavioral Change	Organize cleanup drives Host community workshops Conduct joint campaigns	School Admin; Parents; Local Partners	Community coordination kits, promotional materials	₱5,000- ₱10,000	Month 2
5. Regular Maintenance of Waste Bins	Schedule frequent bin inspections Replace damaged bins Ensure timely collection	Maintenance Staff; Custodians	Maintenance schedule templates	₱5,000	Continuous
6. Interactive Learning Activities	Simulate waste segregation Role-play activities Introduce environmental games	Teachers; Student Council	Activity kits, game materials	₱5,000	Month 3

7. Parental Involvement in Waste Management	Host parent workshops Develop home-school initiatives Share educational kits	Teachers; Parents	Workshop materials, communication kits	₱5,000	Month 2
8. School-Level Contests and Initiatives	Hold waste management contests Organize recycling fairs Reward eco-friendly classrooms	Student Council; Environmental Clubs	Contest banners, certificates, prizes	₱10,000	Months 4–5
9. Policy Reinforcement and Feedback System	Establish strict waste policies Conduct feedback sessions Use suggestion boxes	School Admin; Teachers	Policy documentation, feedback forms	₱10,000	Continuous
10. Create Waste Management Advocates	Train Eco-Ambassadors; Form advocacy clubs Host peer-led campaigns	Teachers; Student Leaders	Advocacy training materials, promotional tools	₱12,000	Months 4–5
11. Integrate Technology	Launch waste monitoring apps Use dashboards to track compliance Host virtual campaigns	IT Personnel; Waste Management Committee	Mobile app platforms, dashboard tools	₱10,000- ₱25,000	Month 6

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