# GARBAGE PRACTICES IN HIGHER EDUCATION FOR THE HEALTH ACADEMIC ENVIRONMENT

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## ABSTRACT

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Unplanned waste management, a lack of commitment, excessive freedom, and a lack of self-discipline made the garbage problem a gigantic battle. This study examined the practices, thought contributions, and concrete suggestions of participants regarding the management of household and school waste. Thirty-three participants were involved. Using a qualitative, Heideggerian phenomenological method and researchers' validated interview questions, the researchers found that generally, the participants were aware of the existing laws and policies on garbage management, understood the importance of waste facilities for proper waste disposal, and believed that becoming a model and responsible citizen could make a difference. They suggested imposing discipline and conducting an information drive to ensure that people in authority maintain appropriate waste disposal. Educational institutions have a significant role in garbage management; thus, garbage management for a healthy campus needs to be included in the institution's Corporate Social Responsibility and curriculum.

Additionally, educational institutions should provide adequate facilities for waste management to facilitate practical cooperation among all stakeholders and strictly enforce existing laws.

## INTRODUCTION

The environmental protection topic has gained global importance in this era, but the practice of basic concepts of waste disposal is often neglected (Shrivastava, 1993; Marshall & Farahbakhsh, 2013). People around the globe are aware of the impact of unsuitable waste disposal practices, but the negative implementation attitude creates chaotic situations (Licy et al., 2013; Twumasi, 2017). Ironically, as people's living standards improved, the garbage problem has become acute and complex to solve (Ning & Cao, 2019; Zhao et al., 2019). Hygiene and cleanliness are taught at home (Licy et al., 2013); yet, at present, the amount of garbage produced in each household is increasing relentlessly (Kovalenko & Kovalenko, 2018). Household wastes are responsible for a considerable volume of solid waste. Many are reusable, others are un-reusable. Both these constitute an increasing volume of urban waste. Hence, improper disposal threatens the health of the community (Ghadban et al., 2017; Yadav & Mishra, 2004).

In the Philippines, waste production has increased year by year due to population growth, improvements in the standard of living, economic stability, and industrialization. It was calculated that, on average, 37,427.46 and 40,087.45 tons of garbage were produced in 2012 and 2016, respectively (Philippine solid waste, 2017). The daily average garbage production of each Filipino is estimated at approximately 0.5 kg in urban areas and 0.3 kg in rural areas (Castillo & Otoma, 2013). Romero (2020) reported that the 20-year-old Solid Waste Management Act of 2000 was futile due to poor implementation and a lack of participation from households and constituents. For instance, in Lanao del Norte, Paragoso et al. (2018) found that some households do not comprehend the term natural environment, particularly 'household garbage', and practice open-burning.

In the face of this looming challenge in solid waste management, what is the significant role of academic institutions? In a study by Iojă et al. (2012) in Bucharest, it was reported that many educational institutions were unable to sustain realistic waste management. In Calamba, Laguna, Parocha et al. (2015) noted that despite multiple attempts to introduce a solid waste policy, students were found to have insufficient knowledge of segregation. However, students were inspired to engage in proper segregation through the motivation and willingness of teachers to participate in solid waste management activities based on competition. In Jordan, Moqbel (2018) opined that most of the waste generated on campus is recyclable; thus, a reliable recycling program must be operated. In China, Wang et al. (2018) noted that the existence of an organized garbage disposal site strongly promotes proper disposal activity.

There was an explicit assumption that structural factors were the most critical in ensuring the appropriate disposal of solid waste. This was supported by Khan and Nasser (2020), who stated that only if garbage baskets are installed around the campus and collected regularly will an educational institution's waste be handled more effectively.

Following the qualitative Heideggerian phenomenological approach, the researchers investigated the constructs of reality through the practices and beliefs of participants regarding garbage management at home and in college. Many quantitative research studies have been conducted that focus on household waste management, but few have explored individuals' perspectives. The findings may provide a reasonable basis for academic institutions to solidify their waste management plans. The study's findings may be disseminated through public forums and publications.

**Research Questions**

The primary purpose of this study was to investigate students' experiences with waste management practices. Specifically, this study sought to answer the following questions:

1. What are the practices of the students and staff in managing their garbage at home and at school?
2. What contributions can the students and staff make to improve garbage management at home and school?
3. What concrete suggestions can the students and staff offer to improve garbage management at home and school?

**Significance of the Study**

Management of garbage is a concern for everyone, regardless of age, gender, occupation, or educational background. The findings of this study may benefit the following individuals or groups:

The SPAMAST Administration: The findings of this study will be essential to the college leaders as a needs analysis for implementing relevant plans for a college-wide Solid Waste Management program.

The SPAMAST Employees: The findings will provide these individuals with a relevant understanding of the practices of their colleagues who served as participants. They will be aware that appropriate garbage disposal in their area of work is essential.

The SPAMAST Students: The findings will enable these individuals to understand their roles in promoting proper waste disposal. They can serve as good models for other students and their families.

**Theoretical Lens**

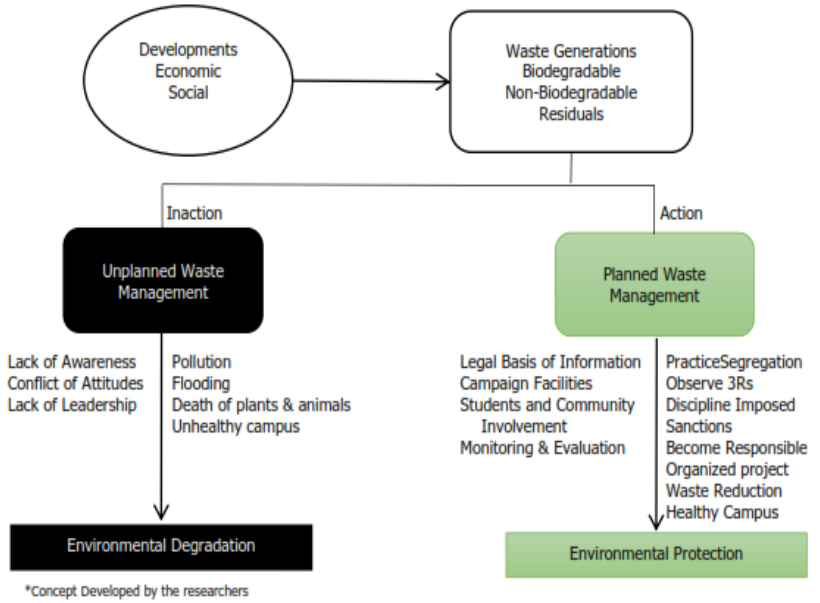
Based on the available literature, the researchers propose an academic institution's Waste Management Process (WMP) to achieve harmony among

the three key players of development: economic, social, and environmental. It is common knowledge that economic improvement is brought about by increased economic activities and population growth caused by natural population increase or migration of people. Due to these developments, waste generation is inevitable.

In dealing with waste, there can be two paradigms – Action and Inaction. In Action, there is Planned Waste Management (PWM), where the legal basis, information campaigns, provision of necessary structural facilities, and close cooperation between students and the community are developed, and monitoring and evaluation are stipulated. These are expected to encourage people to practice segregation and the 3Rs (Reduce, Reuse, and Recycle), become disciplined and responsible, reduce waste production, understand the sanctions, and live in healthy and disease-free surroundings.

On the contrary, inaction on waste management is often due to a lack of awareness, conflicting attitudes, and a lack of leadership. As a result, pollution, flooding, the death of plants and animals, and an unhealthy environment occur.

Waste management is one of the world's most significant development issues faced by humans in contemporary times. It is not only because waste produced by humans affects the climate and health, but also because unmanaged waste hinders a nation's growth towards sustainable development. Any educational institution should adopt the Waste Management Process as a contribution to national development and as part of its Corporate Social Responsibility (CSR).




*Concept Developed by the researchers

# METHOD

## Research Design

This study used the qualitative method and Heideggerian phenomenology. Qualitative method is usually used when the participants' perspectives and point-of-views about a phenomenon is determined (Rust et al., 2017); when investigators sought to explore and understand the individual insights (San Jose et al., 2017); and when the study wanted to reconnoitre into the participants' personal experience (San Jose et al., 2019). On the other hand, Heideggerian phenomenology posits that individuals construct their reality through their encounters and beliefs. This means that individuals reflect on their situations and form their own beliefs (McConnell-Henry et al., 2009). Likewise, it elucidated the significant meaning and importance of experiencing a particular situation (Starr, 2014).

Qualitative Heideggerian phenomenology was appropriate for this study because it investigated the participants' practices in managing their garbage at home and at school. It also explored the participants' contributions and suggestions on how waste management could be improved. The researchers assumed that their responses to the questions were based on their realities.

## Scope and Limitations

This study was limited only to the students and staff of SPAMAST Malita. Due to ethical considerations, the participants' courses and office stations would not be mentioned. This study used purposive sampling. Hence, the findings of this study cannot be generalized to the personal views of the entire SPAMAST population. The findings of this investigation are only valid for the participants involved in this research. However, a quantitative study may be conducted to confirm or intensify the findings of this study.

## Research Instrument

The research instrument used in this study was a questionnaire formulated by the researchers based on the stated research questions of the survey. This instrument was given to three independent expert-validators for external validation. The questions focused on the practices and management of garbage at home and school. Also included were questions that addressed practical contributions and concrete suggestions for improving waste management. Probe questions were also added to allow participants to elaborate on their answers.

## Research Participants

The participants of this study were 33 students from the Institute of Human Service (IHS) and the office staff of SPAMAST. The participants were selected based on: a) they were willing to participate in the study; and b) they stayed in the college for two semesters. Considering the ethical considerations,

particularly justice, the participants were not selected based on their sexual orientation, age, ethnic group, political orientation, economic status, or other factors. Similarly, when choosing the staff, the researchers had no stringent criteria, except that they were college employees, whether regular or not.

**Gathering of Information**

Mapping and Observations. At this stage, the researchers inquired about the head of the physical plant and utility personnel regarding their observations on garbage management in the college. The researchers discovered that planned actions had been taken; however, for an unknown reason, the plan was not executed. The researchers' observations revealed a scarcity of trash bins in the classrooms, particularly on campus. Although a few bins had labels, the garbage was often mixed, and the garbage collectors were not aware of proper garbage segregation.

Formulation of proposal. After the mapping and observation were conducted, the research proposal was formulated. The researchers decided to conduct the study using a qualitative method, as the aim was to explore the participants' firsthand experiences with garbage management. Additionally, three research questions, each accompanied by probe questions, were constructed based on the study's objectives. After the proposal was formulated, the researchers submitted it to the Research and Extension Review and Monitoring Committee (RERMC) for evaluation.

Data gathering. Using the research-made and expert-validated questionnaire, the research team gathered information from the selected participants. Due to COVID-19 restrictions and Inter-Agency Task Force (IATF) protocols, the researcher opted to gather information through a technology-aided approach, utilizing email and Messenger. The structured interview questionnaires were sent to the participants through their personal email accounts and Messenger accounts. The participants were given a week to return the questionnaire with their answers. Nevertheless, the letters of consent were also given to each participant. Of the 42 expected participants, only 33 responded positively.

Analysis of information. After obtaining the paper and pen interview questionnaires, they were given to the data analyst for thematic analysis. In thematic analysis, the data analyst conducted memoing, vertical and horizontal analysis, and formulation of themes based on the recurrence of patterns.

**Trustworthiness**

In the conduct of research using a qualitative method, maintaining credibility remains a significant issue (San Jose et al., 2019). Hence, researchers needed to follow and observe essential measures. Shenton (2004) and Creswell (2007) offered four significant procedures namely: credibility which Christensen and Miguel (2018) described as the transparency; transferability which Polit and Beck (2010) and Sleven and Sines (1999) explained as

applicability and replicability of similar concepts to other fields; dependability which Haven and van Grootel (2019) and Simon and Goes (2016) mentioned to be obtained through audit trail and soundness in the collection of information; and confirmability which Bazyar et al., (2020) and Salarvand et al., (2020) averred to be attained by subjecting the paper for review by expert qualitative researcher. A. According to Simon and Goes (2016), it is essential to confirm whether the findings are coherent with the interpretations.

In this study, credibility was established by clearly communicating the objectives of the study to the participants. Before administering the interview questionnaire to the participants, the researchers presented the aim of the investigation to them. Moreover, the researchers and the participants knew each other. Hence, animosity was not an issue. The atmosphere of trust, friendliness, and honesty was already established. Thus, the participants answered the interview questions with alacrity and willingness.

To address transferability, the researchers provided a thorough description of the investigation (Elo & Kyngäs, 2008) so that it could not be misinterpreted. The researchers also cited various literature in the discussion to establish connections with previous and recent findings. Additionally, comparing the findings of this study with the cited literature demonstrated that the study's findings could be applied to other related fields.

To ensure the dependability of the study, the researchers adhered to strict procedures in collecting the information. Moreover, the gathered information and the results of the data analysis were subject to an audit trail. The auditor, who was an uninterested individual, scrutinized whether the thematic analysis of the information was correctly done.

**Truthfulness shows confirmability.** To verify the study's validity, the researchers allowed the paper to be evaluated by the REMRC. This body examined the soundness of the entire research and the interrelatedness of the objectives and findings.

**Ethical Considerations.** The researchers addressed the five essential aspects of research ethics in the conduct of this study: informed consent, confidentiality, justice, transparency, and qualifications of the researchers.

**Informed Consent**. The researchers used online data collection due to the current COVID-19 pandemic. Before the interview guide questionnaires, permission was obtained from the participants through written informed consent. The consent form stated specific provisions, including voluntary participation in the study, a withdrawal clause, provisions for asking questions and seeking clarifications, and confidentiality of the gathered information.

**Confidentiality**. To maintain the anonymity of the participants, the researchers requested that they use pseudonyms instead of their real names.

Moreover, the consent form did not request information about the participants' course, age, sexual orientation, ethnic affiliation, religion, or economic status.

**Justice**. All participants were informed through the protocols that the study would not directly benefit them, but rather the college where they were studying. The study was conducted for the benefit of all parties involved. As mentioned in the confidentiality section, the researchers chose participants based on their willingness.

**Transparency**. As mentioned in the trustworthiness, the objectives of the study were explained to the participants. Moreover, the participants and the researchers were familiar with each other; thus, animosity was not an issue. Both parties had already developed thrust.

**Qualification of the researchers.** All the researchers involved in this study were competent. The topic of this study was of general interest; therefore, the researchers could all relate to and contribute to it.

## RESULTS AND DISCUSSION

The table below presents the thematic analysis of the information gathered from the participants' responses. It presents the themes, core ideas, and frequency of responses. The researcher categorized the answers into variant, typical, and general. The formulated theme is considered General if the pattern in the reactions of the participants reached 50 percent or above. Moreover, it is classified as Typical if responses obtained are 21-49 percent; and if the reactions gained are less than 20 percent, then those are considered Variant. Moreover, the study's findings were described, and critical literature related to the results was also included.

**Table 1.** *Themes and Core Ideas on My Garbage and I*

| Themes | Core Ideas | Frequency of Response |
|---|---|---|
| Garbage management and practices at home and school | Segregating the garbage<br>Throwing garbage directly in the bins, keeping the trash & throwing later, reducing, reusing & recycling, cleaning the room daily<br>Collection of garbage & wait for the scheduled collection<br>Bring your container for the garbage | General Typical Variant |

| | | |
|---|---|---|
| The needed materials for garbage Management at home & school | Providing garbage bins with labels<br>Using sacks, Garbage bags, Plastic, and Trash bags | General<br>Variant |
| Contributions to managing the garbage | Becoming a model & teaching family members & students<br>Maintaining cleanliness<br>Segregating the garbage properly<br>Becoming responsible | Typical<br><br>Variant |
| Relevance of the contributions | Making a clean environment, lessening the garbage, promoting discipline, and promoting recycling<br>Educating people<br>Making people responsible, preventing the spread of disease, and setting a good example.<br>Helping with garbage management | Variant |
| Practical Suggestions | Imposing rules and fines<br>Segregating, providing facilities, educating people, maintaining cleanliness, disciplining oneself, and Composting<br>Becoming a model<br>Organizing project<br>Making bins attractive for recycling | Typical<br><br>Variant |
| Responsibilities of the authorities | Conducting an information drive<br>Disciplining the people by imposing sanctions<br>Providing garbage facilities, maintaining regular garbage disposal, and implementing a rewards system | Typical<br>Variant |

## Garbage Management Practices at Home and School

Generally, the participants mentioned that they practice garbage segregation at home and school. This suggests that most participants were aware of the garbage segregation policies. Conversely, some participants

reported that they directly disposed of their garbage into the bins without segregating it.

The findings of this study support the Department of Environment and Natural Resources (2000), the ACT (2003), and RA 9003, which mandate that all citizens properly segregate their solid waste. The findings further indicate that the majority of the participants were very aware of these existing laws. Interestingly, the study coincides with that of Surnit et al. (2018), who found that although students in selected higher educational institutions in Metro Manila were aware of garbage segregation laws, they still practiced incorrect segregation by throwing their garbage in the wrong bins.

Does age play a factor in garbage segregation among higher education students? Tabataa et al. (2018) in Japan found that younger individuals exhibit a higher level of waste segregation behavior, despite having a high level of awareness about garbage segregation. They also found that age is significantly linked with a person's segregation ability; however, at age 85, garbage segregation skills decrease due to physical mobility.

Alternatively, a few participants mentioned that they kept their rubbish if the trash bins were out of sight, putting their trash in handbags or pockets to dispose of later in the bins. This behavior is unique and has not been widely discussed in the existing literature. Other participants reported observing the 3Rs, cleaning their rooms daily, collecting garbage, waiting for collection day, and bringing bags for their waste. In terms of practicing reduce, reuse, and recycle, several studies in the Philippines proved that this concept is seldom practiced.

Acanto (2016) found that none of the food service establishments in Talisay City, Negros Oriental observed solid waste segregation and the 3Rs. Enteria and Orig (2019) reported that none of their respondents in selected rural areas in Northern Mindanao practiced the 3Rs. Ancheta et al. (2020) observed that, although local governments are mandated to implement ecological solid waste management to reduce waste disposal through the 3Rs, local government units (LGUs) are not complying. Dui et al. (2017) mentioned that the problem with the 3Rs is significantly related to a throwaway culture, which McDemott (2016) argues has resulted in injustice to the most vulnerable—the ocean. Eighty percent of the annual 8 million tons of plastic thrown into the sea are single-use plastics.

**Materials for Garbage Management at Home and School**

Most participants agreed that properly labeled garbage bins are essential for managing waste at home and in schools. Klunbut et al. (2017) mentioned that labeling garbage bins is necessary not only to identify the type of solid waste but also to educate people about solid waste management. Asi (2019) added that properly labeled bins indicate that the establishment is practicing proper disposal techniques.

A few participants mentioned using recycled rice sacks, preferring them because they are readily available, cheap, easy to use, and commonly used by garbage collectors. In developed countries, 'black bin bags' or 'garbage sacks' are widely used (School and Moffatt, 2017). Some participants also used garbage bags and trash bags, indicating an extra budget for purchasing these materials.

**Contributions to Managing the Garbage**

When asked about their contributions to improved garbage management, participants typically suggested serving as a model for others or sharing knowledge with family members. Many believed that everyone should be mindful of the cleanliness of their surroundings, whether at school or home, and that individual attitudes play a significant role in facilitating effective waste management.

These findings show that participants focused more on human behavior than technological innovation. Berther (2003) opined that solutions to garbage problems require raising awareness so citizens can actively contribute. Szaky (2014) suggested taking inspiration from nature to solve problems. Al-Naggar et al. (2019) and Febriandi et al. (2020) found a significant link between people's attitude and domestic waste management, while Ediana et al. (2018) noted that individual attitude and the 3Rs are related.

A few participants noted that observance of segregation could make garbage management easier, as households or collectors can easily identify garbage for recycling, decomposition, or disposal. Others suggested that responsibility among family members and students is necessary for effective garbage management.

**Relevance of the Contributions**

Participants had varying answers regarding the importance of their contributions to waste management, reflecting diverse realizations and ideas on how to manage waste. They believed that their contributions could improve surroundings, reduce waste, promote discipline, encourage recycling, educate others, prevent disease, serve as role models, and ultimately help manage garbage.

**Practical Suggestions**

Participants believed that applicable solutions could enhance waste management. Some suggested stricter rules and fines, segregating garbage, providing facilities, and educating students and constituents. A few deduced that cleanliness is everyone's responsibility, and self-discipline and being model citizens are essential. Others suggested composting and organizing college projects to promote the broader dissemination of garbage management programs. Making bins attractive and colorful was also recommended to encourage recycling.

Imposing fines as a practical solution is implemented in several cities. In

Korea, violators receive a stern notice and, if repeated, a fine of $200 (Ghaffor, 2017). In Davao City and Malang, Indonesia, violators are given citation tickets with fines (Basa & Soedarwo, 2017). In Singapore, whistleblowers are rewarded and violators face severe penalties (Seng, 2016).

Providing garbage facilities is a practical solution, but many studies have found that this aspect needs attention. Enteria and Orig (2019) and Sangkham (2019) reported that many communities lacked sufficient solid waste containers. Junkang (N.D.) noted that in China, the lack of sanitation facilities leads to mixed garbage, posing a serious classification problem (Fan & Meng, 2020). Shou and Feng-wu (2019) noted that optimizing garbage facilities requires major decision-making.

**Instilling self-discipline among people has a good impact.** In Germany, a comprehensive legal system and high self-discipline make citizens very aware of waste management (Wen & Lu, 2020). Similarly, in China, regulated garbage management strengthens self-discipline (Hao et al., 2020). In Andhra Pradesh, self-discipline led to community commitment to sustainable waste management (Sivaramakrishna, 2020). Nizaar et al. (2020) opined that the 3Rs are greatly influenced by individual self-discipline.

**Responsibilities of the Authorities**

Participants believed that authorities in both the school and the community have a vital role in garbage management. Some considered information drives and disciplining people by imposing fines as necessary. Others suggested strict implementation of garbage management, provision of facilities, regular disposal, and a reward system for proper waste disposal.

Lack of proper waste management among students and households may contribute to ongoing garbage problems. Some believed that awareness would bring desired behavior, making information campaigns the responsibility of academic institutions and local governments. However, research shows contradictory findings. Madrigal and Oracion (2017) found that awareness influenced attitudes and practices, while Paghasian (2017) and Barloa et al. (2016) found that awareness did not always translate to proper practices.

Strict implementation of policies may be the best option. Still, Premakumara et al. (2014) argue that a strong political commitment, collaborative strategies, capacity building, financial and incentive aspects, and close monitoring are also necessary. Ancheta et al. (2020) observed that in San Fernando, Pampanga, the strict implementation of waste management policies, combined with partnerships with NGOs, led to improvements.

**Summary**

The findings revealed that participants are aware of existing laws and policies on garbage management and understand the importance of waste facilities. They believe that being a model citizen and responsible can make

a difference. Stricter laws, rigorous enforcement, and education are essential. Imposing discipline and conducting information drives should be maintained by the authorities.

**Conclusion**

Garbage management is everybody's concern; however, unplanned waste management, a lack of commitment, excessive freedom, and a lack of self-discipline make the garbage problem a gigantic battle. The 20-year-old Republic Act 9003, also known as the Solid Waste Management (SWM) Act, remains unsuccessful. Academic institutions, as melting pots of knowledge, are not exempt from dealing with garbage. They need to incorporate appropriate solid waste management and supervision into their Corporate Social Responsibility (CSR) and curriculum, molding students into disciplined and responsible citizens. Providing structural facilities and strictly implementing existing laws, while continuously promoting proper disposal, are essential steps to address the throwaway culture brought by consumerism.

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