

A Multilevel Perspective on the Level of Implementation of the Solid Waste Management Program Among Local Higher Education Institutions (HeIs) in Laguna Province

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ABSTRACT

As far as Republic Act 9003 or the Ecological Management Act of 2000 is concern the Local Higher Education Institution (HeIs) has always been a partner of our national government particularly the Department of Environment and National Resources (DENR) in the establishment of a systematic comprehensive and ecological solid waste management program to addressed the issues regarding solid waste problem in the country. The scope of implementation of RA 9003 was narrowed down from the Local Government Units (LGU's) going to the Schools, (primary, secondary and tertiary level). Selected college and universities in the province of Laguna were measured on the level on their implementation. The study employs descriptive quantitative of research. A multilevel Perspective of HeIs in the province of Laguna was analyzed considering their conclusive statement regarding solid waste management program implementation in their own school that describe the common errors committed in the implementation of solid waste management program in the schools as perceived by the administrators, faculty and staff of the selected college and universities in the province of Laguna. They were selected through random population sampling. Based on the Multi-level perspective in terms of the profile of the respondents, most of them had already been experience and high educational attainment that can make them considered to be already well equipped and well versed in connection to the teaching profession. Different approaches both a combination of modern and traditional strategies had been implemented and observed as part of the implementation of the Solid Waste Management Program or SWMP in schools. It can also be concluded that inconsistent adherence and practices of

solid waste management approaches and contributory factor that affect its essentially and effectiveness being applied in the school setting. The mindset and attitude of the respondents as part of their demographic profile and characteristics was considered an important factor that influence the level of implementation of SWMP in schools and other educational institutions.

Key Words: Solid Waste Management, LHEI's - Local Higher Education Institutions

INTRODUCTION

Educational institution is an agent of change as far as solid waste management is concerned through Republic Act 9003 otherwise known as Ecological Solid Waste Management Act of 2000. In schools most of their activities created waste and the way these wastes are handled, stored and collected some students forgot to segregate that leads to environmental problem.

Some students when asked by their teacher to disposed their garbage some still practice burning or burying. This practices still exist nowadays to some of the schools, college and universities in the province of Laguna.

Observation gathered by the researcher still exist like improper disposal, can cause clogging of the drainage canal that usually occur during rainy days. While some of the schools continues to follow RA 9003 it is still the responsibility of the schools to insists to their students their responsibility to help their schools to reduce their wastes.

An effective way to improve student's attitude towards waste is to include in their curricula the value of good solid waste practices which is next to Godliness. Waste Management among schools and its environs remain to be a high priority due to health hazard. Maybe some of the foods that

students eat everyday without their knowing may contain some pathogens that cause infections. Improperly discarded waste in schools can contaminate their drinking water. So in general solid waste management remains a major challenge especially now that industrialization still dominating most of the urban areas in the Philippines.

This environmental burden continues to be a major pressing issue threatening the environment and health of the people; students in particular. Unless environmental measures are introduced and effectively enforced in colleges and universities continuing burdens of solid waste management will be inevitable. School activities create waste and the way these waste was handled stored and collected may pose risk to the environment. Maybe the schools, college and universities could make or improved curricula or teaching strategies that engage learners to continuously practice environmental protection and preservation.

Punzalan (2020) in his evaluation of the environmental awareness and practices of senior high school students found out that there was a high level of environmental awareness among his respondents, poor in terms of environmental practices. Based on their study they recommended program and activities that increase level of practice towards addressing environmental problems and sustainable development.

In the study of Garcia and Garcia (2016), they mentioned the need for environmental literacy that is science based and taught in a school setting. The school should mirror a culture of environment protection and preservation. Provide teachers with proper scientific literacy in teaching environment literacy. Strengthen programs and activities concerning environment

protection whether conducted in school or outside of school.

Not only the schools have a lot of problems regarding solid waste but also the localities surrounding the schools. Some of the LGU's use open dump sites which create and spread health problems contaminating the underground water resources and the decreasing capacity of the sanitary landfills involves burying of waste and this remains a common practice in the country and other parts of the world.

Theoretical Framework

The present study was anchored on the Waste Management Theory which was first developed and introduced by Pongracz et al.

(2004) and which was based on the belief that waste management should work to stop waste from harming the environment and human health. The right definition of trash is essential to developing a sustainable waste management strategy, and current legislation mostly addresses existing waste. As such, in the work of Whiteman et al. (2021) it was noted that the Theory of Waste Management offers a more thorough analysis of the field and includes conceptual analysis of trash, activity on waste, and a comprehensive view of waste management's objectives. The premise of waste management theory is that waste management should stop waste from endangering the environment and human health.

For the purpose of creating a sustainable waste management strategy, the appropriate definition of waste is essential. The majority of present regulation addresses garbage that has already been generated. Definitions that result from this circumstance might, however, be at odds with waste

reduction objectives because something that already existing cannot be prevented from developing and it is important to remember that when anything is given the label "trash," it will be handled accordingly; as a result, despite its clear desire for waste prevention, legislation essentially accumulates waste. Such definitions have the underlying philosophical implication that they cannot support a sustainable waste management system. Therefore, it is necessary to look for fresh, modern definitions of waste and waste management that may both illuminate the causes of waste production and provide a fundamental remedy for the issue.

In addition, waste management was defined by the European Council Directive on Waste as the collection, transport, recovery, and disposal of waste, as well as the oversight of such operations and maintenance of disposal sites. Waste management should therefore be understood to imply the "collection, transport, recovery, and disposal of objects that their holders abandon" since it is a descriptive term, much like the definition of waste. This definition makes it quite clear that waste management is just the manipulation of trash; it is therefore action involving material. It is suggested that waste management encompasses more than simply the simple treatment of garbage because the word "management" truly denotes the manipulation of activity. As was seen in the part before, converting wastes into non-wastes required a variety of appropriate waste management procedures. Waste management, as previously said, also comprises strategic planning, prescribing solutions, preventing environmental pollution, practicing resource conservation, and reducing the quantity and toxicity of waste produced and also particularly deciding on the best course of action or remedy while taking in consideration the

governing law, weighing its impacts and implications before reaching a certain decision. Thus, this particular theory was considered to be much of use for the present study as this had provided initial understanding of how waste generated and collected is being treated and also emphasized on the importance of integrating and applying new approaches that can help to better treat and handle waste and how through the integration of solid waste management approaches and practices can be considered helpful in addressing such concern and the wastes' harmful effects to the natural environment and human's physical health as well.

Conceptual Framework

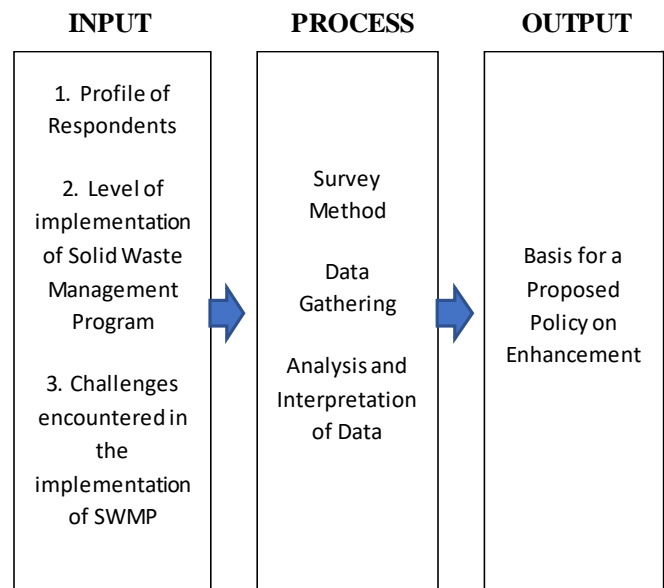


Figure 1-Research Paradigm of the Study

The study utilized the Input-Process-Output (I-P-O) model. The input needed for this research is composed of data about the demographic profile of the respondents, level of implementation of Solid Waste Management Program and Challenges encountered in the implementation of SWMP.

The process involved the administering of survey questionnaires to the respondents followed by its retrieval and analysis. In addition, the researcher also used numerous supporting data obtained from various related literature and studies.

At the end of this research, it is expected that this may lead in developing a Proposed Policy on Compliance.

Statement of the Problem

This study aimed to assess the implementation of solid waste management program/ordinance among the selected state college and local universities in the province of Laguna. Specifically, it sought to answer the following questions:

1. What is the profile of the three groups of respondents in terms of the following:

1.1 Age

1.2 Sex

1.3 Civil Status

1.4 Educational Attainment

1.5 Monthly Income

1.6 Number of Siblings?

2. How do the respondents assessed the level of implementation of Solid Waste Management Program in their school based on:

2.1 Collection

2.2 Transporting of waste

2.3 Processing

2.4 Recycling

2.5 Disposal

2.6 Monitoring of Waste?

3. What are the issues and concern/challenges encountered in the implementation of Solid Waste Management Program in selected college and universities in the province of Laguna.?

4. Is there any significant differences between the perceptions of the respondents and the level of implementation of SWMP on different aspects?

5. Is there any significant correlation between the implementation of SWMP and its challenges?

6. Based on the findings of the study what compliance policy are being offered to improve the implementation of Solid Waste Management Program.

Scope and Delimitation of the Study

This study was conducted to determine the level of implementation of the solid waste management program of the selected college and universities in the province of Laguna. The respondents of the study were the administrators, faculty and staff during the school year 2021-2022. The survey questionnaire was the primary data collection tool used by the researcher. The results were analyzed and interpreted based on the responses of the respondents to the questionnaire prepared by the researcher.

METHODOLOGY

The main purpose of the study is an attempt the level of implementation of Solid Waste Management Program in Selected College/ Universities in the province of Laguna.

Research Design

This study employs descriptive quantitative method of research. Moreover, in the data gathering, the use of survey questionnaire will be applied. Descriptive research is one of three basic types of research design. It is a quantitative research method that is considered conclusive and is used to test specific hypothesis and describe characteristics or functions. Descriptive research involves gathering data that describe events and then organizes, tabulates, depicts, and describes the data collection. When in-depth, narrative descriptions of small numbers of cases are involved, the research uses description as a tool to organize data into patterns that emerge during analysis. Those patterns aid the mind in comprehending a qualitative study and its implications. (Fluet, 2021).

Respondents of the Study

The respondents of the study were the administrators, faculty and staff of the selected college and Universities in the province of Laguna namely Calamba City College (CCC), Laguna University (LU) and Laguna State Polytechnic University (LSPU). Sixty (60) administrators, sixty (60) faculty and sixty (60) staff with the total of one hundred eighty (180) from the three schools were among the respondents of the study. They were selected through random population sampling.

Statistical Treatment of Data

This study followed statistical tools in presenting the data gathered:

Frequency, Percentage and Rank Distribution. This was used to determine the profile of the respondents

Weighted Mean. This tool was used to the gather data about the level of implementation of Solid Waste Management Program in their school and the third part is on the the issues and concern/challenges encountered in the implementation of Solid Waste Management Program in selected college and universities in the province of Laguna.

Annova. This tool was used to determine the significant differences between the perceptions of the respondents and the level of implementation of SWMP on different aspects. **Pearson R-**This tool was used to determine the significant relationship between the implementation of SWMP and its challenges.

RESULTS AND DISCUSSIONS

Assessment of the Level of Implementation of Solid Waste Management Program in School

1. In terms of collection of waste, the indicator “Disposes collected waste in sanitary landfill” had obtained the highest mean of 4.44 which was verbally interpreted as Fully Implemented.
2. In terms of transporting of waste, the indicator “Use of Hauled Container Systems or HCS” had obtained the highest mean of 4.44 and was verbally interpreted as Fully Implemented.
3. As for the processing of waste, the indicator “Processing the collected waste in composting” had gained the highest mean of 4.33 and was interpreted as Fully Implemented.
4. In terms of recycling of waste, the indicator “Using reusable bags and containers” had obtained the highest mean of 4.42 and was interpreted as Fully Implemented.

5. With regards to the disposing of waste, the indicator “Disposing of waste collected through use of incineration and heat-applied methods” had gained the highest mean of 4.41 and was verbally interpreted as Fully Implemented.

6. Finally, with regards to the monitoring of waste, the indicator “Categorizing waste based on its chemical component” had gained the highest mean of 4.47 and was verbally interpreted as Fully Implemented.

CONCLUSIONS

Based on the findings of the study, the following conclusions were drawn:

1. It can be concluded that in terms of the profile of the respondents, most of them had already been experience and high educational attainment that can make them be considered to be already well-equipped and well-versed in connection to the teaching profession.
2. Different approaches - both a combination of modern and traditional strategies had been implemented and observed as part of the implementation of the Solid Waste Management Program or SWMP in schools.
3. It can also be concluded that inconsistent adherence and practices of solid waste management approaches can be a primary contributing factor that can affect its essentially and effectiveness as being applied in the school setting.
4. The mindset and attitude of the respondents as part of their demographic profile and characteristics is nevertheless can still be considered as an important factor that can influence the level of implementation of SWMP in schools and other educational institutions.

5. It can also be concluded that different approaches are still needed to be reviewed and modified even though already part of the Solid Waste Management Program (SWMP) in order to ensure its effectiveness and success.

RECOMMENDATIONS

This study requires the commitment and involvement of the concerned personnel to sustain its effectiveness and reliability, thus, the following recommendations were made.

1. It is recommended for school heads, principals and school administrators to continuously develop various programs and initiatives that will not only promote the importance of SWMP in their school but can also help strengthen the cooperation of its staff, faculty and students to its implementation.
2. As such, it is also recommended for both the teaching and non-teaching staff to also increase their level of participation to the effective implementation of SWMP and become role models of its adherence among the students and the surrounding community.
3. Further studies are also encouraged to be conducted in the future with a particular aim to explore further the different areas or aspects of solid waste management program or SWMP as applied in schools and the areas in which further improvement or retention is deemed necessary.

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