# LABAN SA BASURA PROJECT: AN INNOVATION TO IMPROVE WASTE MANAGEMENT IN SCHOOL

Uddin, Arni Jee M.

Completed 2023

# Laban sa Basura Project: An Innovation to Improve Waste Management in School

**Uddin, Arni Jee M.**
Master teacher I
Antonio V. Apostol Sr. Memorial Central Elementary School and SPED Center
Department of Education, Division of Zamboanga del Sur
arnijee.uddin@deped.gov.ph
09300474300

## Abstract

This study aims to determine the status of the waste management system in AVASMCES. The main objective of waste management is to present and discuss data on solid waste generation, characterization, minimization, collection, separation, treatment, and disposal. It also looks at policy, education, and economic and environmental assessment related to waste management. The participants of this study are the Grade VI–B pupils of Antonio V. Apostol Sr. Memorial Central Elementary School and SPED Center. Employing the quantitative descriptive research method to determine the status of the waste management system of pupils, the researcher conducted a survey through a questionnaire. Following data analysis, pupils have often applied to implement waste management in school. It is also shown that after the 10-day 3Rs Program, almost all of the pupils showed progress and improvement in waste management. In conclusion, this serves as a guide for learners and teachers to adopt proper waste management. It is recommended that the school heads and teachers adopt and implement the intervention; they may also place garbage bins or sacks in any school area, and parents may likewise inculcate proper waste management and disposal.

**Keywords:** *intervention; Laban sa Basura Project; waste management*

**Acknowledgement**

The researcher would like to sincerely thank everyone who helped with the development and accomplishment of this work. As a result, the author wishes to express his profound gratitude to the following people for their thoughtful gifts of valuable time, energy, and knowledge:

A special thank you to my family for their unwavering support, understanding, and prayers throughout this endeavor. I will always be grateful of you all.

The Schools Division Research Committee of Zamboanga del Sur Division headed by the Schools Division Superintendent, Jeanelyn A. Aleman, CESO VI, for the unwavering support, ASDS Jerry C. Bokingkito, CESE, SDRC Chair, for his approval and support as well as and for the funding assistance through the Basic Education Research Fund (BERF), and Daria Gay M. Mariquit Senior Education Program Specialist for Research and Planning for giving guidance, expert suggestions, and assisting in the study.

Dr. Ledella J. Dag, former Principal I of Antonio V. Apostol Sr. Memorial Central Elementary School and SPED Center for her essential guidance and supervision, which substantially assisted me in completing this research work.

A special appreciation to Dr. Vernon Sotero M. Fernandez, for the opportunity given and pushing me to the limits, I am forever grateful for that.

Dr. Veronica D. Gallardo, Public Schools Districts Supervisor, for the guidance and counsel in my research work and;

I am grateful to Dr. Filamer Banghulot, LLB, Principal of Antonio V. Apostol Sr. Memorial Central Elementary School and SPED Center for believing in my ability, support, and words of encouragement.

To Ruth C. Indus, District Research Coordinator and Michel L. Manta, for guidance, assistance, and support during the entire study process.

Pupils of Antonio V. Apostol Sr. Memorial Central Elementary School and SPED Center, for their cooperation and participation during the data gathering.

Thank you to the AVASMCES and SPED Center family for supporting me and having faith in my ability to work on this extraordinary endeavor.

And above all to Almighty God, the origin of all things, for His merciful love, protection, guidance, and divine kindness, which gave me the perseverance and courage to hang on.

## Context and Rationale

Waste management reduces waste's effects on the environment, people's health, and aesthetics. Reducing the negative effects that such waste has on the environment and public health is the aim of waste management. Garbage, trash, refuse, or wasted stuff are all considered solid waste. Garbage can be classified based on its source, which includes municipal solid garbage, health care waste, and electronic waste. Every year, more than 2 billion tons of solid trash from cities are generated. Its goal is to prevent pollution of the air, land, or water supply by offering sanitary, economical, and efficient solid waste storage, collection, transportation, treatment, and disposal services (World Health Organization 2022).

It is among many developing nations' most important and urgent environmental problems. The destruction of the ecosystem is exacerbated by the growing amount of solid waste that has been carelessly discarded everywhere. Due to inadequate solid waste management techniques for garbage segregation, collection and transportation, waste disposal, and waste recycling, solid wastes have been an issue, particularly in areas that are quickly urbanizing. Solid garbage disposal has made rain, typhoons, and storms worse. It impeded water flow and resulted in sudden flooding. Hence, Solid Waste Management (SWM) continues to be a critical environmental issue (Gequinto 2017, 1-8).

In addition to preserving the hygienic environment, solid waste management is essential for lowering potential health risks. The current study addresses the general population's issues due to inappropriate waste management and disposal practices. Our interview revealed that most students in Grade VI–B are unaware of the widespread issue of inappropriate trash disposal in this day and age. Poor waste management can spread viruses that cause various illnesses, particularly respiratory conditions, including pneumonia, bronchitis, and asthma. Additionally, it pollutes the soil and air (Geetha and Rajalakshmi 2020, 70-77).

Most Antonio V. Apostol Sr. Memorial Central Elementary School pupils struggled with proper waste disposal. As an AVASMCES teacher, the researcher has observed issues with the students' waste management and disposal knowledge.

Republic Act (RA) 9003, known as the Ecological Solid Waste Management Act of 2000, equips the Local Government Units (LGUs) possessing the necessary governmental framework, mandate, and institutional structure to create integrated solid waste management strategies based on the 3Rs (reduce, reuse, recycle) in order to attain a 25% decrease in trash (Premakumara et al. 2014, 971-979).

In light of the abovementioned issue, it is important to conduct action research to address it. In order to establish an intervention program based on identified needs, this study will be carried out to ascertain the interest level of Grade VI-B students of AVASMCES, School year 2022–2023. Thus, the researcher created this Laban sa Basura Project through the 3Rs Program.

## Innovation, Intervention, and Strategy

Laban sa Basura Project is a project that responds to school waste because of inadequate disposal facilities, ineffective garbage collection, and inappropriate waste disposal. It aims to reduce the amount of waste in school. It is best to implement solid waste management that prioritizes waste reduction through reducing, reusing, and recycling.

To gather data from respondents about their attitudes, opinions, or experiences, there is a survey that identifies the pupils who struggle with managing their garbage properly. Fifteen (15) questions are required for the survey, and respondents can

respond using a Likert scale frequency (refer to Appendix A). The survey questionnaire has two sections: the pre-intervention, which occurs before the ten-day 3Rs Program, and the post-intervention, which occurs after the ten-day 3Rs Program. The study's findings improved our comprehension of how to interact with students who struggle with properly managing their garbage, and teachers were involved in disseminating findings and suggested preventative and intervention measures. They were also more knowledgeable about the subject, which made them more attentive while reacting to pupils' needs. The stakeholders would have references on the subject. It will offer suggestions and invaluable information for reacting to and treating such observable conduct.

## Action Research Questions

This study aims to determine the status of the waste management system in AVASMCES.

Specifically, it sought to answer the following questions:

1. What is the pupils' waste management status?
2. What are the interventions used to address waste management in AVASMCES?
3. What is the impact of Laban sa Basura Project in AVASMCES?

## Action Research Methods

### Research Design

This study employed quantitative research, specifically a descriptive survey method using a survey questionnaire, as this is considered most appropriate. The said method employed the one-group pretest and post-test design. This is to determine the pupils' status about the waste management system in AVASMCES. According to Babbie's (2020) explanation, quantitative methods give top priority to precise measurements and the statistical, mathematical, or numerical analysis of information gathered through polls, surveys, and other research techniques. Additionally, they encompass the manipulation of pre-existing statistical data through computing techniques. Its main goal is to collect numerical data and utilize it to understand a specific event or extrapolate it to bigger populations.

### Participants and/or Other Sources of Data Information

The population of this study was 35 pupils of Grade VI-B of Antonio V. Apostol Sr. Memorial Central Elementary School and SPED Center. These learners are the target respondents because they must fully comprehend the significance of effective garbage disposal and take appropriate action. Hence, permission to conduct this study was obtained from the office of the Schools Division Superintendent and the Public Schools District Supervisor of Lapuyan to the School Principal. A letter of consent was given to the respondents to signify their willingness to undergo a ten-day 3Rs Program, and all the data gathered would remain confidential.

### Research Instrument

For data gathering, the researcher used a questionnaire checklist as the primary source of extracting the data, where the individual respondents responded to a series of statements by indicating the extent of agreement. The research instrument of this study is adapted by the survey questionnaire of Vitharana (2014, 121).

It is a 5-point Likert-type type questionnaire checklist consisting of one part only. It has fifteen (15) statements with five options, each described as: 5 – always; 4 – often; 3 – sometimes; 2 – rarely; and 1 – never.

**Data Gathering Procedure**

This study focuses on improper waste disposal. The descriptive method was used to address improper waste disposal (refer to Appendix A). The intervention was conducted to address waste disposal.

**Data Analysis Plan**

The field-gathered data will be analyzed after being collected. The research topics are addressed using a statistically weighted mean. The instrument's response is weighted in the manner depicted below:

| Always | Often | Sometimes | Rarely | Never |
|---|---|---|---|---|
| *5* | *4* | *3* | *2* | *1* |

The ten-day 3Rs Program on the Laban sa Basura Project was implemented following the pre-intervention survey. This strategy was employed as the treatment. Instruction delivery and evaluation both took place on the same platform. After that, a post-intervention survey on the pupils' state was given. The post-implementation questionnaire survey explored how the ten-day 3Rs Program affected their learning and awareness of waste management.

## Results and Discussion

The results and discussion section of the "Laban sa Basura Project: An Innovation to Improve Waste Management in School" presents a comprehensive analysis and interpretation of the project's outcomes. This section delves into the data collected and offers intuitions into the effectiveness of the innovation in addressing waste management challenges within the school environment.

### *Pupils' Waste Management Status*

Table 1 shows the weighted mean of pupils' status regarding the waste management system in AVASMCES during the pre-implementation, which is 3.68, described as often, and 4.45, described as always during the post-intervention. This result can be detailed from the progress shown, the pupil's desire to learn extensively about proper waste management.

Further, the standard deviation in the pre-intervention 1.34, indicates that students' responses toward waste management were spread around the mean of 3.68. Positively, the standard deviation of the post-intervention data, which was 0.69, shows that student answers generally clustered around the mean score of 4.45.

**Table 1: Pupils' pre- and post-intervention status on waste management.**

| Statement | Pre-Implementation | | | Post- Implementation | | |
|---|---|---|---|---|---|---|
| | Mean | SD | Description | Mean | SD | Description |
| 1. Do you know what is waste management? | 3.63 | 1.66 | Often | 4.69 | 0.68 | Always |
| 2. Do you usually store gathered trash in a garbage bin/can? | 3.69 | 1.11 | Often | 4.4 | 0.50 | Always |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3. Have you ever heard of recycling's importance? | 4.37 | 1.11 | Always | 4.77 | 0.43 | Always |
| 4. Do you agree to proper waste management? | 3.97 | 1.20 | Often | 4.94 | 0.24 | Always |
| 5. Do you know how solid waste affects the environment? | 3 | 1.63 | Sometimes | 4.51 | 0.70 | Always |
| 6. Is there a trash can close where do you usually store gathered trash to your home/classroom? | 3.66 | 1.06 | Often | 4.59 | 0.78 | Always |
| 7. Have you ever heard of improper waste disposal causing health issues? | 3.46 | 1.07 | Often | 4.71 | 0.75 | Always |
| 8. Do you support waste recycling? | 4.49 | 1.07 | Always | 4.83 | 0.51 | Always |
| Where do you usually store gathered waste product?<br>9. Bin | 4.28 | 1.17 | Often | 4.85 | 0.36 | Always |
| 10. I do not store gathered waste product at the river. | 3.8 | 1.37 | Often | 4.11 | 1.25 | Often |
| 11. I do not store gathered waste product at the road/street side. | 3.0 | 1.35 | Sometimes | 4.11 | 1.50 | Often |
| 12. I do not store gathered waste product at the open space. | 3.54 | 1.27 | Often | 4.2 | 0.93 | Always |
| 13. Have you ever got training in effective waste disposal? | 3.70 | 1.27 | Often | 4.83 | 0.51 | Always |

| | | | | | | |
|---|---|---|---|---|---|---|
| 14. Do you not consider your school's garbage disposal system to be a problem? | 2.85 | 1.66 | Sometimes | 3.60 | 1.19 | Often |
| 15. Do you consider everyone has responsibility in proper waste management in school? | 3.76 | 1.23 | Often | 4.91 | 0.37 | Always |
| **Weighted Mean** | **3.68** | **1.34** | **Often** | **4.45** | **0.69** | **Always** |

| Mean Range | Interpretation |
|---|---|
| 4.21 – 5.00 | Always |
| 3. 41 – 4.20 | Often |
| 2.61 – 3.40 | Sometimes |
| 1.81 – 2.60 | Rarely |
| 1.00 – 1.80 | Never |

In Table 1, Grade VI- B pupils indicate that they agree with proper waste management in school, with a weighted mean of 4.94. This means there is a presence of students' awareness in properly handling garbage. According to Molina and Catan (2021), managing solid waste is among the difficulties several nations face. Poor solid waste management can result in several problems with the environment, society, and health. Given that institutions of higher learning are agents of change and that RA No. 9003, solid waste management ideas are incorporated into the teaching of science.

The indicator with the lowest weighted mean is that they do not view the garbage disposal system at the school as a concern, with a weighted mean of 3.60 and interpreted as often. The data reveals that the school needs more efficient garbage disposal.

Furthermore, the status of waste management in school for Grade VI-B is always applied with an overall weighted average of 4.45. This means that pupils are fully aware of waste management and properly handling waste in school.

Generally, this study is anchored on RA 9003 Solid Waste Management Act Implementing Rules and Regulations, Part 6, Rule 21, Section 2, enjoins DepEd to actively implement ecological waste management in educational systems at all levels, with a focus on the participation of students, faculty, staff, and administrators in school-wide and local community waste management initiatives. at order to encourage student environmental awareness and action, waste management concepts including reduction, recycling, reuse, and composting, as well as resource conservation and recovery, segregation at the source, and minimization, must be implemented at every school (DepEd Order No. 5, s. 2014).

## Conclusion and Recommendations

The study seeks to establish a claim about improving the students' status regarding waste management in AVASMCES through the Laban sa Basura, a ten-day 3Rs program. The data revealed a significant increase in their awareness of waste

management. It is essential to teach pupils on how to handle waste appropriately. They can create a more sustainable generation by teaching them how to recycle, keep spaces clean, and limit waste production by establishing an effective waste management strategy. Based on the findings and conclusion of the investigation, the following are recommended for improved implementation of the Laban sa Basura Project: It also recommended that teachers' cooperation is strongly encouraged because pupils in other grade levels can use this intervention for the school, the important aspects of waste management in schools may be closely observed, evaluated, and assessed by the head of school, parents may also be included to take part in educating their child about waste management and must have a proper waste disposal in their homes, it is highly recommended that this 3Rs Program to be used inside the classroom, and proper waste disposal such as garbage bins/sacks may be placed where pupils may go and stay.

**Action Plan**

| Goals / objectives | Activities Strategies | Person Involved | Resources Needed | Time Frame | Success Indicator |
|---|---|---|---|---|---|
| To inform Grade VI- B pupils about conduct of the study | Facilitate meeting with parents' learners | Researcher, school head, learner | Record book approved conduct of study | November 2022 | Completed |
| To conduct the release of survey questionnaire (pre-implementation) | Conduct actual release of survey questionnaire | Researcher | Survey Questionnaire | March 2023 | Completed |
| To conduct the 10-day 3R's Program | Conducted the 10-day 3R's Program | Researcher | Bond papers, flyers, bins, leaflets | May 2023 | Completed |
| To conduct the release of survey questionnaire (post-implementation) | Conduct actual release of survey questionnaire | Researcher | Survey Questionnaire | June 2023 | Completed |
| To analyze the result of the 10 day 3R's Program | Analyze result | Researcher | Result of the 3R's Program | June 2023 | Completed |

**References**

Babbie, Earl R. 2020. *The practice of social research*. Cengage AU. http://old-eclass.uop.gr/modules/document/file.php/Babbie_The_Practice_of_Social_Research.pdf

Department of Education (DepEd) Order No. 05, s. 2014. *"Implementing Guidelines on the Integration of Gulayan sa Paaralan, Solid Waste Management and Tree Planning Under the National Greening Program (NGP)"*. https://www.deped.gov.ph/wp-content/uploads/2014/02/DO_s2014_05.pdf.

Geetha, R., and S. Rajalakshmi. 2020. "Problem faced by the public due to the improper waste disposal and behaviour of waste disposal." *International Journal of Social Sciences and Management* 7, no. 2 (2020): 70-77. https://nepjol.info/index.php/IJSSM/ article/view/28593.

Gequinto, Amado C. 2017. "Solid waste management practices of select state universities in CALABARZON, Philippines." *Asia Pacific Journal of Multidisciplinary Research* 5, no. 1: 1-8. https://www.apjmr.com/wp-content/uploads/2016/11/APJMR-2017.5.1.01.pdf

Molina, Romenick Alejandro, and Ivee Catan. 2021. "Solid waste management awareness and practices among senior high school students in a state college in Zamboanga City, Philippines." *Aquademia* 5, no. 1: ep21001.

Premakumara, Dickella, Gamaralalage Jagath, Aloysius Mariae L. Canete, Masaya Nagaishi, and Tonni Agustiono Kurniawan. 2014. "Policy implementation of the Republic Act (RA) No. 9003 in the Philippines: A case study of Cebu city." *Waste management* 34, no. 6: 971-979. https://www.sciencedirect.com/science/article/abs/pii/S0956053X13005266.

Republic Act (RA) No. 9003. 2000. *Ecological Solid Waste Management Act of 2000.* Republic of the Philippines. *https://www.officialgazette.gov.ph/2001/01/26/republic-act-no-9003-s-2001/.*

Vitharana, Asiri D. 2014. "Sustainable Development: A Study of Solid Waste Management for Sound Environmental Development in Hambantota Municipal Council, Sri Lanka." *Volume III*: 121. https://sljer.sljol.info/articles/10.4038/sljer.v3i1.85.

World Health Organization. 2022. *Compendium of WHO and other UN guidance on health and environment.* No. WHO/HEP/ECH/EHD/22.01. World Health Organization. https://iris.who.int/bitstream/handle/10665/352844/WHO-HEP-ECH-EHD-22.01-eng.pdf.

**Financial Report**

| Activities | Quantity | Unit | Estimated Cost | Total Estimated Cost |
|---|---|---|---|---|
| **Supplies and Materials** | | | | |
| Bond paper | 1 | ream | 275 | 270 |
| Printer Ink Black | 1 | set | 260 | 260 |
| Plastic Materials | 3 | Kilos | 50 | 150 |
| | | | **SUBTOTAL:** | **₱680** |
| **Food Expenses during 10-day 3R's Program** | | | | |
| Bread and juice | 36 | Pax | 12 | 4,320 |
| | | | **SUBTOTAL:** | **₱4,200** |
| | | | **GRAND TOTAL**: | **₱5,000** |

**Appendix A**
**Research Instrument**

**Survey Questionnaire**
Adapted from Vitharana, Asiri D. *The Importance of Solid Waste Management for Sustainable Development.*

Name (Optional): _____
School: _____
Date: _____

Please check (✓) the appropriate box next to your response to each question. Please respond to all of the questions so that we can determine your depth of knowledge in waste disposal management.

| | *Always* ***5*** | *Often* ***4*** | *Sometimes* ***3*** | *Rarely* ***2*** | *Never* ***1*** |
|---|---|---|---|---|---|
| 1. Do you know what is waste management? | ○ | ○ | ○ | ○ | ○ |
| 2. Do you usually store gathered trash in a garbage bin/can? | ○ | ○ | ○ | ○ | ○ |
| 3. Have you ever heard of recycling's importance? | ○ | ○ | ○ | ○ | ○ |
| 4. Do you agree to proper waste management? | ○ | ○ | ○ | ○ | ○ |
| 5. Do you know how solid waste affects the environment? | ○ | ○ | ○ | ○ | ○ |
| 6. Is there a trash can close where do you usually store gathered trash to your home/classroom? | ○ | ○ | ○ | ○ | ○ |
| 7. Have you ever heard of improper waste disposal causing health issues? | ○ | ○ | ○ | ○ | ○ |
| 8. Do you support waste recycling? | ○ | ○ | ○ | ○ | ○ |
| Where do you usually store gathered waste product?<br>9. Bin<br><br>10. River | ○<br><br>○ | ○<br><br>○ | ○<br><br>○ | ○<br><br>○ | ○<br><br>○ |

| | | | | | |
|---|---|---|---|---|---|
| 11. Road/Street side | ○ | ○ | ○ | ○ | ○ |
| 12. Open Space | ○ | ○ | ○ | ○ | ○ |
| 13. Have you ever got training in effective waste disposal? | ○ | ○ | ○ | ○ | ○ |
| 14. Do you not consider your school's garbage disposal system to be a problem? | ○ | ○ | ○ | ○ | ○ |
| 15. Do you consider everyone has responsibility in proper waste management in school? | ○ | ○ | ○ | ○ | ○ |

**Appendix B**

**Participant Consent Form**

Title of Project: Laban Sa Basura Project: An Innovation to Improve Waste Management in School

Name of Researcher: Arni Jee M. Uddin, MT-1

Please affix initial in the box

1. I confirm that I have read and understand the information sheet dated: _____ for the above project and has the opportunity to ask questions. ☐
2. I understand that my participation is voluntary And that I am free to withdraw at any time without giving my reason. ☐
3. I understand that my responses will be anonymized before analysis. I give my permission of the research team to have access to my anonymized responses. ☐
4. I agree to take part in the above project. ☐

| _____ | _____ | _____ |
|---|---|---|
| Name of Participant | Date | Signature |

| _____ | _____ | _____ |
|---|---|---|
| Researcher | Date | Signature |