AWARENESS AND PRACTICES ON SOLID WASTE MANAGEMENT OF JUNIOR HIGH SCHOOL STUDENTS

Janice U. Idul*1

*1Holy Cross Of Davao College, Inc.-Davao City, 8000, Philippines.

DOI: https://www.doi.org/10.56726/IRJMETS45933

ABSTRACT

The purpose of this study was to describe and determine the significant relationship between awareness and practices on solid waste management of students in Tanglaw National High School. This study utilized a descriptive–correlational design. The research employs random sampling in identifying the respondents. There were twenty-four respondents in this study. The researcher–made questionnaire was the main instrument used in the gathering of data. The statistical tools used in the analysis of the data were the average weighted mean and Pearson correlation. The results revealed that the level of awareness on solid waste management was 3.36 interpreted as “fully aware” while the level of practices was 3.08 interpreted as “often”. The students often manifested the practices in Solid Waste Management in Tanglaw National High School. In addition to this, there is a significant relationship between the level of awareness and practices of students on solid waste management in Tanglaw National High School with the computed p-value of 0.01 and r-value of 0.50. It can be concluded that the level of awareness of the students influenced their practices on proper segregation, reduction, reuse, disposal, and recycling.

Keywords: MAED- Teaching Social Studies; Solid Waste Management, Awareness, Practices, Segregation, Reduce, Reuse, Disposal, Recycling.

I. INTRODUCTION

One of the difficulties that many nations face is managing solid waste. Poor solid waste management resulted in several issues with socioeconomic, environmental, and health implications. The collection, treatment, and disposal of trash were all parts of solid waste management. It had to do with the products of human activity and the steps usually taken to withstand their effects on beauty, the environment, and health. Instead of promoting economic development and degrading human health and the environment, it lessened or eliminated their negative effects (Molina & Catan, 2020).

Initiatives for waste management present a wealth of possibilities for communities to lessen environmental damage brought on by solid waste. In the United Kingdom, several intervention programs were implemented including household waste prevention alluded to by Godfrey et al. (2019). The problem of managing solid waste is getting worse as the world’s population grows every year. Inadequate solid waste collection is one of the factors that causes environmental damage, especially in small communities. To highlight the primary solid waste difficulties in small towns, they selected to analyze the town of Taxila since it had the worst problems with solid waste management.

In Pakistan, there were many irresponsible residents when it comes to proper garbage disposal and their poor treatment of solid waste. An Indonesian effort to change waste management procedures for over 70 participating communities and an estimated 50 million people would be supported by a $100 million loan. The loan assisted in the improvement of neighborhood policies and institutions, the closure and rehabilitation of old and unofficial dumping grounds, and the construction of environmentally friendly disposal facilities, such as contemporary sanitary landfills with mechanisms for collecting landfill gas. Investments in solid waste management in Vietnam were assisting the city of Can Tho in preventing drain clogs, which could cause flooding (Ejaz & Hashim, 2010).

Similar investments in the Philippines were lowering the amount of solid trash that enters rivers, which helps Metro Manila lower its flood risk. The waste management expenditures were assisting in lowering marine trash, notably in Manila Bay, by concentrating on enhanced collection methods, community-based approaches, and offering incentives. The Philippines was an archipelagic country located in Southeast Asia. It had a dynamic...
and rapid economy due to increasing urbanization and, a growing middle class and it has a large and young population (World Bank, 2020).

Solid waste management pertains to the control of generation, storage, collection, transfer and transport, processing, and disposal of solid wastes in a manner that is in accord with the best principles of public health, economics, engineering, conservation, aesthetics, and other environmental considerations, and that is also responsive to public attitudes. However, solid waste management tends to be ignored (Masood et al., 2019). In addition, poor management of solid waste may cause health hazards to inhabitants, environmental problems such as water and soil contamination, air pollution and flooding, and other socio-economic problems (Qdais, 2017).

The school had organized the waste management program committee and was commissioned to institutionally implement it. However, as observed, still voluminous wastes were continuously accumulated every week on campus from various activities. The institutional solid waste management committee formulated some policies yet, its full implementation and monitoring were so lax for some reasons. The objective of this study was to find the level of awareness and practices on solid waste management among students in Tanglaw National High School.

1.1. Conceptual Framework

Presented in Figure 1 is the conceptual framework of the study. As the framework shows, the independent variable of this study is the awareness on solid waste management with two indicators namely laws and programs, and roles and responsibilities.

On the other hand, the dependent variable of this study is the practices on solid waste management with five indicators namely segregation, reduction, reuse, recycling, and disposal. Segregation involves separating various components of solid waste at the point of origin to reduce the amount of garbage that needs to be collected and disposed of through encouraging recycling and resource reuse (Article 2, Section 3, RA 9003). Reuse is cutting down on, according to Ambayic (2014) garbage generated through purchases of products that produce a lot of rubbish. Reuse is a process of obtaining materials meant for the same or new purposes but retaining their original physical and chemical properties (Article 2, Section 3, RA 9003). Recycling of solid waste can result in beneficial items. Recycling as defined in Article 2, Sec. 3 of R.A. No. 9003 pertains to the treating of waste material by converting them into a new product. Disposal refers to the movement of any solid waste into or onto land through discharge, deposit, dumping, spillage, or other means.

The conceptual paradigm of the study is shown in Figure 1.

Figure 1. Conceptual Framework of the Study
1.2. Statement of the Problem
This study aimed to determine
1. What is the level of awareness on solid waste management of junior high school students in terms of:
   1.1 laws and programs, and
   1.2 roles and responsibilities
2. What is the level of practices of junior high school students in terms of:
   2.1 segregation;
   2.2 reduce;
   2.3 reuse;
   2.4 recycle; and
   2.5 disposal;
3. Is there a significant relationship between Solid Waste Management Awareness and Practices of students?

II. METHODOLOGY

2.1 Research Design
This study used the descriptive-correlation research design which was used to relate two or more variables. This was used to find a significant relationship between the level of awareness and practices of the students on solid waste management (Baustista, 2019). In addition, the researchers specifically look into the significant relationship between the awareness and practices of solid waste management among the students of Tanglaw National High School through the researcher-adapted questionnaire.

For this study, the researchers adapted a questionnaire as the main instrument used in the gathering of data from (Molina, R. A., & Catan. I. (2020), (Gantang, M. A. 2014). The questionnaire was in survey form. Part one was the awareness of the respondents in the laws and programs and roles and responsibilities. Part two was the solid waste practices of students (Molina, R. A., & Catan. I. (2020), (Gantang, M. A. 2014). Part three describes the level of awareness of students in solid waste management.

2.2 Participants of the Study
The researchers conducted this study in Tanglaw National High School. The respondents of this study were the students of Tanglaw National High School which was situated in the Municipality of Braulio E. Dujali province of Davao del Norte. A sample of 100 junior high school students are the respondents.

This study employed the random sampling method which was randomly picked the student of Tanglaw National High School which involved random selection based on convenience or other criteria, allowing the researchers to easily collect data.

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Population</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 7</td>
<td>114</td>
<td>25</td>
</tr>
<tr>
<td>Grade 8</td>
<td>108</td>
<td>25</td>
</tr>
<tr>
<td>Grade 9</td>
<td>106</td>
<td>25</td>
</tr>
<tr>
<td>Grade 10</td>
<td>105</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL</td>
<td>433</td>
<td>100</td>
</tr>
</tbody>
</table>

2.3 Data Gathering Procedure
For an easy understanding of the background upon gathering the data of the study, the different steps undertaken were described in the following:

Ask for approval. The researchers asked for approval from their research adviser. It was to know if the research was already accepted and approved to conduct.
Craft or modify the questionnaire. When the study was approved, the researchers started working on their questionnaire based on the research questions and on the theories they had found.

Revise the questionnaire. After the questionnaire was validated by the three (3) validators, researchers revised the questionnaire to check the correction that was given by the validators.

Distribute the questionnaire. After the revision of the questionnaire, the researchers distributed the questionnaire to the respective respondents. The number of students chosen to be a respondent was obtained using simple random sampling.

Analyze data. The researchers collected the questionnaire that was distributed to the respective respondents. The data gathered was given to the statistician to analyze the data obtained by the answers of the respondents.

Statistical Tools

The answers gathered from the questionnaire were counted and tabularized in a master data sheet. The researcher sought assistance from the statistician to evaluate and read the results utilizing appropriate tools.

Mean. To determine the level of awareness and practices of students in Solid Waste Management Average Weighted Mean (AWM) method was used. In this study, the solid waste management awareness was determined through AWM because determined how the students were aware of the laws and programs as well as their roles and responsibilities. Moreover, AWM is also used in determining the practices of students and teachers in solid waste management.

Pearson-r. To describe the significant relationship between solid waste management awareness and practices of students Pearson R was used.

2.4 Data Analysis

In this study, the survey questionnaires were downloaded from the internet, adopted, and modified to gather the necessary information and data. The format of the questionnaire was in Likert point scale, where the respondents were given the questions about the awareness and practices on solid waste management of junior high school students in Tanglaw National High School. Likert established the principles of assessing attitudes through asking individuals to respond to a series of statements regarding the topic that was used to definite choice response formats and were designed to assess the opinions or attitudes (McLeod, 2019).

The independent variable of this study which is Level of Awareness on Solid Waste Management of Junior High School Students was measured through an adopted questionnaire from (Molina, R. A., & Catan. I. (2020), (Gantang, M. A. 2014). In describing the level of awareness of students in solid waste management this scale was used:

<table>
<thead>
<tr>
<th>Weighted Mean</th>
<th>Descriptive Equivalent</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.26-4.00</td>
<td>Fully Aware</td>
<td>The students were fully aware to the laws and programs and rules and responsibilities of Solid Waste Management.</td>
</tr>
<tr>
<td>2.51-3.25</td>
<td>Aware</td>
<td>The students were aware to the laws and programs and rules and responsibilities of Solid Waste Management.</td>
</tr>
<tr>
<td>1.76-2.50</td>
<td>Not so Aware</td>
<td>The students were not so aware to the laws and programs and rules and responsibilities of Solid Waste Management.</td>
</tr>
<tr>
<td>1.00-1.75</td>
<td>Not Aware</td>
<td>The students were not aware to the laws and programs and rules and responsibilities of Solid Waste Management.</td>
</tr>
</tbody>
</table>

The dependent variable of this study which is Practices of Students on Solid Waste Management of Junior High School Students was measured through an adopted questionnaire from (Molina, R. A., & Catan. I. (2020), (Gantang, M. A. 2014). In describing the practices of students and teachers in solid waste management this scale was used:
III. RESULTS AND DISCUSSION

3.1 Level of Awareness on Solid Waste Management of Junior High School Students in TNHS

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Mean</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laws and Programs</td>
<td>2.84</td>
<td>Aware</td>
</tr>
<tr>
<td>Roles and Responsibilities</td>
<td>3.32</td>
<td>Fully Aware</td>
</tr>
<tr>
<td><strong>OVERALL MEAN</strong></td>
<td>3.36</td>
<td>Fully Aware</td>
</tr>
</tbody>
</table>

As shown in Table 2, roles and responsibilities had the highest mean of 3.32 and the standard deviation of 0.50, both of which were interpreted as "fully aware," indicating that the respondents were conscious of and fully aware of their roles and responsibilities with regard to the school's solid waste management. According to the result, laws and programs for solid waste management that were interpreted as "aware" had the least general mean of 2.84 and the standard deviation of 0.48. This demonstrates that not all students were fully knowledgeable about the laws and programs for solid waste management. In order to prepare students for the future of the environment, schools must introduce them to various laws and programs on solid waste management.

It could be gleaned that the overall mean is 3.36, with a standard deviation of 0.46 categorized as fully aware. It implies that the students were fully aware of the laws and programs as well as the roles and responsibilities of solid waste management. This finding was congruent with Paghasian (2017) finding that Filipino college students have favorable knowledge of solid waste management. Likewise, the earlier study by Abne et al. (2017) found that the level of awareness, perception, and practices of students varied.

3.2 Level of Practices on Solid Waste Management Junior High School Students in TNHS

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Mean</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Segregation</td>
<td>3.38</td>
<td>Always</td>
</tr>
<tr>
<td>Reduce</td>
<td>3.43</td>
<td>Always</td>
</tr>
<tr>
<td>Reuse</td>
<td>3.43</td>
<td>Always</td>
</tr>
<tr>
<td>Recycle</td>
<td>3.24</td>
<td>Often</td>
</tr>
<tr>
<td>Disposal</td>
<td>3.31</td>
<td>Always</td>
</tr>
<tr>
<td><strong>OVERALL MEAN</strong></td>
<td>3.08</td>
<td>Often</td>
</tr>
</tbody>
</table>

Table 3 displays the practices of the respondents in solid waste management. The highest mean of 3.43 with a standard deviation of 0.61, interpreted as "always," fell on the practice of properly reducing and reusing garbage, indicating that the respondents always practice proper reducing and reuse of garbage anywhere. The convenient access to solid waste bins may encourage the practice of reducing and reusing (Ivy et al., 2013). Aside from that, segregation got an average mean of 3.38 with a standard deviation of 0.62, interpreted as "always." This means that they consider the importance of segregating solid waste. The practice they commonly follow is to segregate biodegradable and non-biodegradable waste for collection. The practice of disposal got an average mean of 3.31 with a standard deviation of 0.39, interpreted as "always." It means that the respondents
always practice proper disposal by not throwing and leaving garbage anywhere, by not burning waste materials, and by disposing of hazardous, toxic, and special wastes properly. It also shows that with a mean of 3.24 and a standard deviation of 0.38, the respondents "often" practice proper recycling. This means that the students are aware of the importance of recycling solid waste materials. While the overall mean of 3.36 was interpreted as "always" along the practices of solid waste management. With the overall mean of 3.08 interpreted "often" along the practices of solid waste management, it generally disclosed that the respondents observe good practices in terms of proper segregation, proper reducing, proper reusing, recycling and disposing of. According to Tartiu (2011), findings of community-based environmental KAP surveys, such as this study, are essential to attain significant improvement in waste management systems through recycling schemes or composting, as well on the development and proactive implementation of processes or programs that could address the declining community awareness on environmental deterioration and the much-needed conservation strategies.

Table 3. Significance on the Relationship between the Awareness of the Junior High School Students and Their Practices on Solid Waste Management

<table>
<thead>
<tr>
<th>Variables</th>
<th>r-value</th>
<th>p-value</th>
<th>Decision</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>0.50</td>
<td>0.01</td>
<td>Reject H₀</td>
<td>There is a significant relationship.</td>
</tr>
<tr>
<td>Practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level

The relationship between the level of awareness and practices on Solid Waste Management is presented in Table 4. As manifested in the table, the computed p-value of 0.01 and r-value of 0.50 show that there is a significant relationship between the level of awareness and practices of students on solid waste management. Hence, the null hypothesis is rejected. It signifies that if the students are oriented well about solid waste management, practically they can practice proper segregation of waste according to compostable, recyclable, non-recyclable, and special waste.

The significant relationship between awareness and practices in Solid Waste Management can be confirmed by previous studies, Hasaan, Rahman, & Abdullah (2015) that there was a significant relationship between knowledge, awareness, attitudes, and practices to the environment. Hence, the integration of knowledge, awareness, and attitudes were considered important elements in reshaping the behavior of students towards environmental practices. In like manner, Magulod (2017) findings that environmental awareness is associated with environmental attitude. This demonstrates the students willingness to take action to lessen the negative effects of solid waste. Additionally, there is a relationship between respondents’ attitudes on solid waste awareness and practices. Suggesting that students’ environmental attitudes increase with their level of awareness. Therefore, by educating students about solid waste, we can see a greater improvement in their attitude toward environmental protection the higher awareness the students on solid waste management, the higher environmental attitude they exhibit. Hence, by providing knowledge to students about solid waste management, the higher they demonstrate a positive attitude toward environmental care is expected.

SOLID WASTE MANAGEMENT AWARENESS AND PRACTICES OF STUDENTS IN TANGLAW NATIONAL HIGH SCHOOL

"Recycle for Life: An Intervention Program for a Greener Tomorrow"

S.Y. 2023-2024
IV. CONCLUSION

Based on the results of the study, the following conclusions are drawn:

1. Students were fully aware of solid waste management. Most of them were aware of the roles and responsibilities of solid waste management as well as the laws and programs related to it.
2. The students always practice solid waste management in terms of properly reducing, reusing, segregation, and disposing of, but often practice recycling.
3. The level of awareness of the students influenced their practices on proper segregation, reduction, reuse, disposal, and recycling.
4. The respondents’ overall mean in the level of awareness of solid waste management was 3.08 interpreted as “aware”. The students were aware of the laws and programs and their roles and responsibilities in solid waste management at Tanglaw National High School.
5. The overall mean in the level of practices on solid waste management was 3.36 interpreted as “always”. The students often manifested the practice in solid waste management at Tanglaw National High School.
6. There was a significant relationship between the level of awareness and practices of students on solid waste management in Tanglaw National High School with the computed p-value of 0.01 and r-value of 0.50.

V. RECOMMENDATIONS

1. The school administration should have an information drive campaign on solid waste management in every general orientation program, and in homeroom classes to ensure full awareness of the wise disposal of garbage.
2. The coordinator of the solid waste management program should lead campaigns and give more information about proper practices in the recycling of waste materials in order for the students to have a very good habit of this practice.
3. Student government should design student activities that will give direct learning experiences and more information, particularly the roles of the students in solid waste management.
4. Teachers must integrate environmental awareness in the lesson to influence sustainable development practices in the students.
5. Students should maintain appreciable practices on solid waste management and should internalize the program and impart their knowledge to others by making themselves responsible for doing it regularly.
6. Utilize the used of proposed intervention program entitled “Recycle for Life: An intervention Program for a greener tomorrow”
VI. REFERENCES


