

## WASTE MANAGEMENT DEVELOPMENT PLAN IMPLEMENTATION OF NSTP PROGRAM IN A PUBLIC HIGHER EDUCATION INSTITUTION

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### Abstract

This study aims to assess the extent of NSTP implementation at the University of Caloocan City, focusing on its three components: Civic Welfare Training Service (CWTS), Literacy Training Service (LTS), and Reserve Officer Training Corps (ROTC). The study also evaluates how NSTP fosters Filipino core values, including Pagka-MakaDiyos, Pagka-Makatao, Pagka-MakaKalikasan, and Pagka-Makabansa, while identifying the challenges encountered in its implementation. A descriptive research design was employed, utilizing survey questionnaires to gather data from NSTP students. The results indicate that NSTP is generally implemented effectively, with CWTS and LTS being widely embraced due to their strong emphasis on community service and literacy development. However, ROTC faces moderate participation rates, primarily due to physical demands, safety concerns, and negative public perception. CWTS was found to be highly effective in promoting environmental projects, disaster preparedness, and leadership development, but logistical and funding constraints limited its full potential. LTS contributed significantly to student facilitators' teaching abilities, yet its sustainability was challenged by a lack of instructional materials and weak community support. ROTC successfully instilled discipline and patriotism, but concerns regarding training facilities and student interest were noted. Findings revealed that Filipino core values were observed among students to varying degrees. Pagka-MakaDiyos was highly evident, particularly in prayer, faith, and generosity. Pagka-Makatao was strongly reflected in students' respect for others and fairness, though emotional regulation and conflict management needed improvement. Pagka-MakaKalikasan was evident in waste segregation and conservation efforts, but direct involvement in environmental initiatives was lower. Pagka-Makabansa was moderately observed, with students showing pride in national identity but limited participation in civic and national programs.

**Keywords:** NSTP Implementation and Waste Management

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## INTRODUCTION

Waste management is a critical issue in modern society, particularly in academic institutions where daily activities generate significant amounts of waste. Proper waste management ensures environmental sustainability, promotes health and sanitation, and fosters responsible waste disposal behavior among students. However, many colleges and universities struggle with waste management issues such as improper disposal, lack of awareness, and insufficient recycling programs. This study aims to assess the current waste management practices among college students and develop a sustainable waste management plan to enhance environmental consciousness and responsibility within the institution. The general objective of this study is to develop a waste management development plan for college students and promote environmental awareness and sustainability. Specifically, it aims to assess the current waste management practices and behaviors of students, identify the key challenges in waste disposal, segregation, and recycling, evaluate the level of awareness and participation of students in waste management initiatives, and propose effective strategies to enhance waste management systems within the institution (Mallillin, 2023).

Inadequate solid waste disposal becomes a concerning aspect for environmental preservation as the solid waste policies are poorly established and implemented. With the increasing student population, academic institutions produce a considerable volume of waste, including plastics, paper, food waste, and electronic waste. Inefficient waste management practices contribute to pollution, health risks, and environmental degradation. Gelarpa and Heyasa (2017) stated that the mitigation process for poorly managing solid waste is public awareness of information and implementation. By providing in-depth knowledge, the public can oversee the rising problem and execute inclusive and sustainable strategies that can eradicate poor management hence providing an opportunity to enhance the community welfare (Mayo, & Mallillin, 2023).

Thus, building a program in educational institutions that recognizes the importance of proper waste management to improve waste segregation, recycling, and reduction efforts is crucial for nation-building as it serves as the blueprint of society on how environmental issues anchor the lives of an individual. It also accommodates individuals to become informed and self-conscious about the community that they belong to. Hence, strengthening the National Service Training Program is beneficial for the community as it assures a program that caters to the ongoing problems that the community faces. Through NSTP, college students will be able to utilize the platforms of information that can improve the civic duties and preparedness of the individual. This study seeks to examine existing waste management programs, identify gaps, and propose a comprehensive waste management development plan tailored for college students (Martinez, et al. 2022).

## Philosophical View on Developing Waste Management Plan

Zero waste management implementation is the focus process of University of Caloocan. It is a principle and system to redesign the prevention and lifecycle resources of the waste, materials, and pollution. It is an idealistic concept in tackling waste problems and aspirational goals. It stimulates sustainable production and self-reliance for resource recovery, optimum recycling, and consumption. It is implemented in the different sectors in the city such as urban development, manufacturing, and waste management treatment. The development waste management plan is focused on the following:

1. **Social justice and Civic Responsibility.** The NSTP promotes an idea on waste management on global issues.

It promotes pro-environment behavior in understanding and exploring the perceived justice and role of trust in

the practices of waste recycling management. It provides knowledge recycling motivation concerning household waste in various contexts. It demonstrates the social responsibility and social justice concerning the capacity to recycle, trust information on recycling, trust waste management policy, waste management company to recycle, and efficiency of recycling (Veliverronena, & Davidsone, 2025).

2. **Education and Awareness.** NSTP provides platforms for waste management plans. It implements effectiveness on the hierarchy of reuse, recycle, reduction, and avoidance. It provides specific policies on waste management plan and development that engages in supportive behavior and positive attitude. It emphasizes on the educational campaign and awareness to bridge the gap on effective waste management and general awareness. It reflects on opportunities for partnership in both public and private sectors. It transforms waste management action and awareness services into account and comprehensive education (Etim, 2024).
3. **Transformative Learning and Behavioral Change.** NSTP facilitates significant behavior and transformative learning experiences on key competencies and sustainable development on the approach of experiential learning to facilitate understanding on transformative and learning behavioral change. It is designed for NSTP promotion waste management development plan, implementation, student planning, and quality management for pro-environmental behavior change. It increases physical activity, resource utilization and conservation on educational transformative learning for sustainable development goals (Algurén, 2025).
4. **Sustainable Development and Future Generation.** NSTP emphasizes sustainable development and future generation protection. It diversifies innovative waste management in the effect of economic sustainability and social climate change. The sustainable development goals implement the strength and focus of revitalizing the global partnership for waste management programs and plans. It focuses on the sustainable development goals on waste management. It discusses the aspects of sustainable development and future generation regarding waste management context and indicators (Ram, & Bracci, 2024).
5. **Community Organization and Empowerment.** NSTP emphasizes to empower community organization in increasing the concerns on the environment. It develops effective management in the community organization and empowerment through development planning and implementation. There is nothing hard to achieve the goals when there is a determination to accomplish the process and system to the fullest. It examines the impact and approach of community organization and dynamic governance in addressing empowerment on waste management plans (WallsSalsabila, et al. 2024, pp. 187-200).

### Statement of the Problem

- 1) What is the extent of implementation of NSTP programs in terms of the following:
  - 1.1 Civic Welfare Training Services (CWTS),
  - 1.2 Literacy Training Service (LTS),
  - 1.3 Reserve Officer Training Corps. (ROTC)
- 2) How do the respondents assess the UCC - NSTP programs in terms of the following Filipino Core Values:
  - 1.4 Pagka-MakaDiyos
  - 1.5 Pagka-Makatao
  - 1.6 Pagka-Makalikasan

### 1.7 Pagka-Magkabansa

- 3) What are the challenges encountered by the respondents in the implementation of NSTP programs?
- 4) Based on the findings of the study, what institutional waste management development plan may be proposed?

### Hypothesis

This study tested the following hypotheses:

- Null Hypothesis ( $H_0$ ): There is no significant difference in the assessment of respondents on the extent of implementation of the NSTP program across its three components: Civic Welfare Training Service (CWTS), Literacy Training Service (LTS), and Reserve Officers' Training Corps (ROTC).
- Alternative Hypothesis ( $H_1$ ): There is a significant difference in the assessment of respondents on the extent implementation of the NSTP program across CWTS, LTS, and ROTC.

### Research Design

This study employed a descriptive research design using a mixed-methods approach (quantitative and qualitative). The descriptive method is appropriate as it aims to analyze the current waste management practices among college students, identify challenges, and propose an improved waste management development plan. The mixed-methods approach allows for both statistical analysis of waste management behaviors and in-depth insights into attitudes and perceptions (Younas, et al. 2024).

### Sampling Techniques

A stratified random sampling technique will be used to ensure fair representation across different colleges, departments, and university personnel. The estimated sample size was determined using Slovin's formula to ensure statistical validity.

### Participants of the Study

The study was conducted at the University of Caloocan City specifically targeting students, faculty, and administrative staff who are directly involved in waste management practices within the campus. The study involved One Hundred Twenty-five (125) students, faculty, and staff as respondents.

## RESULTS and DISCUSSION

### 3.1 Extent of implementation of NSTP.

**Table 1**

**Implementation of Civic Welfare Training Services (CWTS) Activities**

| Indicator  | Mean | Verbal Interpretation |
|--|------|-----------------------|
| 1. Inclusivity in terms of gender, socioeconomic status, and accessibility.                    | 3.23 | IMPLEMENTED           |
| 2. Health and Sanitation Initiatives – Medical missions, feeding programs, hygiene education.  | 3.05 | IMPLEMENTED           |
| 3. Environmental Projects – Tree planting, waste management, coastal cleanups.                 | 3.28 | HIGHLY IMPLEMENTED    |
| 4. Disaster Preparedness and Response – First aid training, disaster risk reduction workshops. | 3.25 | HIGHLY IMPLEMENTED    |
| 5. Youth and Community Development – Leadership training, outreach programs, values formation. | 3.22 | IMPLEMENTED           |
| 6. Funding and logistical support from the government and the school.                          | 3.01 | IMPLEMENTED           |
| 7. Availability of trained instructors and facilitators.                                       | 3.19 | IMPLEMENTED           |
| 8. The level of student involvement and enthusiasm in CWTS activities                          | 3.28 | HIGHLY IMPLEMENTED    |
| 9. The skills and values acquired, such as leadership, teamwork, and civic responsibility.     | 3.24 | IMPLEMENTED           |
| 10. Long-term sustainability and continuity of community projects.                             | 3.08 | IMPLEMENTED           |

Table 1 indicates that the Civic Welfare Training Service (CWTS) program is generally well-implemented within the University of Caloocan City. The highest-rated aspects, Environmental Projects (3.28) and Student Involvement (3.28), suggest that students are actively engaged in environmental initiatives and community-based activities. This reflects their commitment to volunteerism and social responsibility.

However, Funding and Logistical Support (3.01) received the lowest score, indicating that financial constraints and resource limitations may hinder the full implementation of CWTS projects. Addressing these challenges by seeking external funding, strengthening school support, and fostering student-led fundraising initiatives may enhance the overall program. Additionally, further efforts should be made to increase participation and awareness campaigns to ensure that more students recognize the value of CWTS in nation-building and civic responsibility.

**Table 2****Implementation of Literacy Training Service (LTS) Activities**

| Indicator   | Mean | Verbal Interpretation |
|---|------|-----------------------|
| 1. Tutoring sessions, alternative learning programs, livelihood training.                                     | 3.13 | IMPLEMENTED           |
| 2. Inclusivity in terms of accessibility to students from different backgrounds.                              | 3.12 | IMPLEMENTED           |
| 3. Basic Literacy and Numeracy – Teaching reading, writing, and arithmetic to out-of-school youth and adults. | 3.15 | IMPLEMENTED           |
| 4. English and Filipino Proficiency – Improving language skills to help learners communicate effectively.     | 3.20 | IMPLEMENTED           |
| 5. Digital Literacy – Teaching basic computer skills and responsible internet use.                            | 3.20 | IMPLEMENTED           |
| 6. Values Formation and Character Education – Promoting discipline, ethics, and social responsibility.        | 3.28 | HIGHLY IMPLEMENTED    |
| 7. Availability of trained instructors and facilitators.  | 3.17 | IMPLEMENTED           |
| 8. Improvement in literacy rates among beneficiaries.   | 3.04 | IMPLEMENTED           |
| 9. The sustainability of literacy programs beyond the NSTP requirement.                                       | 3.12 | IMPLEMENTED           |
| 10. Positive feedback from learners and their families.   | 3.10 | IMPLEMENTED           |

The findings show that the LTS program is effectively implemented as part of the National Service Training Program (NSTP), particularly in Values Formation and Character Education (3.28), which received the highest rating. This suggests that students are highly engaged in instilling moral values and ethics in literacy learners.

However, Improvement in Literacy Rates (3.04) and Sustainability of Literacy Programs (3.12) scored relatively lower, which may indicate that the program is facing challenges in achieving long-term impact. The effectiveness of literacy training relies heavily on continuity and follow-up programs, which may be lacking in the current system. To address this, the University of Caloocan City should implement monitoring and evaluation mechanisms to assess learners' progress beyond the training period. Providing additional training to student facilitators and securing more instructional materials may further enhance the program's effectiveness.

**Table 3****Implementation of Reserve Officers' Training Corps (ROTC) Activities**

| Indicator  | Mean | Verbal Interpretation |
|--|------|-----------------------|
| 1. Gender inclusivity and participation of both male and female cadets.  | 3.14 | IMPLEMENTED           |
| 2. Basic Military Training – Drills, formations, and discipline training.  | 3.04 | IMPLEMENTED           |
| 3. Disaster Response and Rescue Operations – First aid, survival training, and emergency response.                 | 3.16 | IMPLEMENTED           |
| 4. Leadership and Command Training – Developing leadership skills for future officers.                             | 3.18 | IMPLEMENTED           |
| 5. National Security and Patriotism Awareness – Understanding national defense and civic duties.                   | 3.20 | IMPLEMENTED           |
| 6. Weapons Training (for Advanced ROTC) – Basic knowledge on handling firearms (depending on the program's level). | 2.98 | IMPLEMENTED           |
| 7. Availability of trained instructors (usually from the military or ROTC officers).                               | 3.04 | IMPLEMENTED           |
| 8. Improvement in discipline, leadership, and teamwork among cadets.   | 3.19 | IMPLEMENTED           |
| 9. Contribution to national defense preparedness through the AFP Reserve Force.                                    | 3.26 | HIGHLY IMPLEMENTED    |
| 10. Assistance in community services, rescue missions, and national security efforts.                              | 3.07 | IMPLEMENTED           |

The results indicate that ROTC is well-implemented, particularly in Contribution to National Defense Preparedness (3.26), which was rated highly implemented. This reflects the program's success in instilling patriotism, leadership, and national security awareness among students at University of Caloocan City.

However, Weapons Training (2.98) received the lowest rating, suggesting limitations in resources, training facilities, or institutional restrictions. This finding highlights the need to improve the program's infrastructure, access to equipment, and hands-on training opportunities to ensure that students gain adequate defense and survival skills. Moreover, increasing awareness of the importance of ROTC in national security may help address existing misconceptions and encourage more active participation from students

### 3.1 UCC- NSTP Implementation in terms of Filipino Core Values

Below are the variables that measure the NSTP Implementation in terms of Filipino Core Values in the University of Caloocan City.

**Table 4**

#### **Implementation of Filipino Core Value - "Pagka-MakaDiyos"**

| <b>Indicator</b>  | <b>Mean</b> | <b>Verbal Interpretation</b> |
|---|-------------|------------------------------|
| 1. I do not only believe in God but also show it through actions and words. | 3.04        | OBSERVED                     |
| 2. I always pray and trust in God in all situations.                        | 3.44        | HIGHLY OBSERVED              |
| 3. I follow God's commandments and avoid sin.                               | 3.24        | OBSERVED                     |
| 4. I do what is right even when no one is watching.                         | 3.45        | HIGHLY OBSERVED              |
| 5. I do not boast about faith but live quietly in holiness.                 | 3.32        | HIGHLY OBSERVED              |
| 6. I acknowledge mistakes and am willing to ask for forgiveness.            | 3.46        | HIGHLY OBSERVED              |
| 7. I help those in need without expecting anything in return.               | 3.47        | HIGHLY OBSERVED              |
| 8. I know how to forgive and do not hold grudges.                           | 3.15        | OBSERVED                     |
| 9. I do not easily give up on challenges, believing that God has a plan.    | 3.40        | HIGHLY OBSERVED              |
| 10. I never forget to thank God for every blessing, big or small.           | 3.48        | HIGHLY OBSERVED              |

Table 4 survey results indicate that faith-based values are highly observed among students at University of Caloocan City. The highest-rated aspects, Helping Those in Need (3.47) and Thanking God for Blessings (3.48), suggest that students demonstrate a strong sense of gratitude and generosity. This highlights their inclination toward religious and moral responsibility in daily life.

However, Forgiving Others (3.15) received the lowest rating, which suggests that while students value their faith, applying forgiveness and reconciliation may still be a challenge. Strengthening values education through reflective exercises, religious discussions, and peer counseling programs may help reinforce the importance of forgiveness as a fundamental aspect of being MakaDiyos. Encouraging students to integrate their faith-based values into their actions and decision-making may further enhance their spiritual growth.



**Table 5**

| Indicator   | Mean | Verbal Interpretation |
|---|------|-----------------------|
| 1. I think about others' well-being and am always ready to help.                            | 3.43 | HIGHLY OBSERVED       |
| 2. I respect everyone's rights and do not oppress others.                                   | 3.52 | HIGHLY OBSERVED       |
| 3. I am generous and helpful – helping willingly without expecting anything in return.      | 3.40 | HIGHLY OBSERVED       |
| 4. I am understanding and forgiving – do not judge easily and know how to forgive mistakes. | 3.37 | HIGHLY OBSERVED       |
| 5. I respect others' opinions, beliefs, and differences.                                    | 3.54 | HIGHLY OBSERVED       |
| 6. I do not cheat or lie to take advantage of others.                                       | 3.29 | HIGHLY OBSERVED       |
| 7. I do not cheat or lie to take advantage of others.                                       | 3.41 | HIGHLY OBSERVED       |
| 8. I know how to forgive and do not hold grudges.   | 3.25 | HIGHLY OBSERVED       |
| 9. I guard my thoughts, words, and actions to avoid hurting others.                         | 3.41 | HIGHLY OBSERVED       |
| 10. I do not get angry or irritated over small things.                                      | 3.11 | OBSERVED              |

#### **Implementation of Filipino Core Value - "Pagka-Makatao"**

The table 5 findings indicate that students highly observe respect and fairness in their interactions with others. The highest-rated indicators, Respect for Others (3.52) and Respect for Differences (3.54), show that students uphold inclusivity, empathy, and fairness in their relationships. This highlights the positive influence of civic education and social responsibility initiatives within the institution.

However, Managing Anger and Irritation (3.11) received the lowest rating, suggesting that emotional regulation may be an area for improvement. While students exhibit compassion and justice, they may need additional guidance in conflict resolution and stress management. Schools can address this by integrating emotional intelligence training, peer mediation programs, and mindfulness activities into their character development initiatives.

**Table 6**

| Indicator   | Mean | Verbal Interpretation |
|---|------|-----------------------|
| 1. I love and respect nature – have a deep appreciation for nature and recognize its importance in life.                                    | 3.48 | HIGHLY OBSERVED       |
| 2. I am responsible and accountable – do not litter, do not destroy natural resources, and consider the environmental impact of my actions. | 3.54 | HIGHLY OBSERVED       |
| 3. I conserve and avoid wastefulness – use water, electricity, and other natural resources wisely.  | 3.53 | HIGHLY OBSERVED       |
| 4. I actively protect the environment – support environmental initiatives like reforestation, recycling, and waste management.              | 3.37 | HIGHLY OBSERVED       |
| 5. I promote an eco-friendly lifestyle –use sustainable products and support green initiatives.   | 3.31 | HIGHLY OBSERVED       |
| 6. I care for future generations – take action to preserve nature for future generations.   | 3.39 | HIGHLY OBSERVED       |
| 7. I practice waste segregation – properly sort biodegradable, non-biodegradable, and recyclable materials.                                 | 3.36 | HIGHLY OBSERVED       |
| 8. I minimize waste by finding ways to reuse materials and support recycling efforts.   | 3.34 | HIGHLY OBSERVED       |
| 9. I participate in reforestation and biodiversity conservation activities.   | 3.16 | OBSERVED              |
| 10. I encourage friends, family, and the community to adopt eco-friendly habits.  | 3.21 | OBSERVED              |

#### **Implementation of Filipino Core Value - "Pagka-MakaKalikasan"**

The table 6 survey results indicate that students exhibit strong environmental consciousness, particularly in Respect for Nature (3.48) and Responsibility for Natural Resources (3.54), which were rated highly. These findings suggest that students at University of Caloocan City acknowledge the importance of sustainability and actively engage in waste management and conservation efforts.

However, Participation in Reforestation (3.16) and Encouraging Others to Adopt Eco-Friendly Habits (3.21) received lower ratings, suggesting that while students support environmental advocacy, their actual involvement in organized ecological projects may still be limited. University of Caloocan City can enhance environmental education by promoting tree-planting initiatives, sustainability workshops, and community-based eco-projects to further instill MakaKalikasan values.

**Table 7**  
**Implementation of Filipino Core Value - "Pagka-Makabansa"**

| Indicator  | Mean | Verbal Interpretation |
|--|------|-----------------------|
| 1. I appreciate their country's culture, history, and identity.                              | 3.52 | HIGHLY OBSERVED       |
| 2. I respect and follow the laws to maintain order and peace.                                | 3.61 | HIGHLY OBSERVED       |
| 3. I honor the flag, national anthem, and other symbols of the country.                      | 3.64 | HIGHLY OBSERVED       |
| 4. I vote, participate in civic activities, and care about social issues.                    | 3.47 | HIGHLY OBSERVED       |
| 5. I vote, participate in civic activities, and care about social issues.                    | 3.48 | HIGHLY OBSERVED       |
| 6. I am willing to help others, especially in times of need.                                 | 3.50 | HIGHLY OBSERVED       |
| 7. I strive for personal and national development through education and effort.              | 3.50 | HIGHLY OBSERVED       |
| 8. I defend the country's sovereignty – support national security and territorial integrity. | 3.36 | HIGHLY OBSERVED       |
| 9. I prefer buying and endorsing local goods to boost the economy.                           | 3.31 | HIGHLY OBSERVED       |
| 10. I participate in programs that benefit the nation and its people.                        | 3.34 | HIGHLY OBSERVED       |

The findings in table 7 suggest that students at University of Caloocan City demonstrate strong nationalism and patriotism, as seen in the highest-rated indicators, Respect for National Symbols (3.64) and Following Laws (3.61). This reflects their awareness of civic duties and deep respect for national identity.

However, Supporting Local Goods (3.31) and Participation in National Programs (3.34) received lower scores, indicating that economic nationalism and civic engagement may require further encouragement. University can address this by integrating Filipino-made product awareness campaigns, promoting active involvement in government initiatives, and reinforcing the importance of national service through NSTP-related projects.

### Challenges Encountered by the Respondents in the Implementation of National Service Training Program.

Below are the variables that measure **Challenges Encountered** by the Respondents in the Implementation of National Service Training Program.

**Table 8**  
**Civic Welfare Training Service (CWTS)**

| Indicator  | Mean | Verbal Interpretation |
|--|------|-----------------------|
| 1. Lack of Funding – Insufficient budget for community projects and materials.                       | 3.21 | SERIOUS               |
| 2. Limited Community Engagement – Difficulty in coordinating with communities for outreach programs. | 3.05 | SERIOUS               |
| 3. Low Student Interest – Some students participate only for compliance, lacking motivation.         | 3.11 | SERIOUS               |
| 4. Inadequate Training Resources – Insufficient training modules and facilities.                     | 3.03 | SERIOUS               |
| 5. Time Constraints – Balancing CWTS activities with academic workload.                              | 2.98 | SERIOUS               |
| 6. Logistical Issues – Transportation problems in conducting fieldwork.                              | 3.03 | SERIOUS               |
| 7. Weather Conditions – Natural calamities affecting outdoor and community activities.               | 3.02 | SERIOUS               |
| 8. Lack of Trained Instructors – Some facilitators have limited experience in community development. | 2.88 | SERIOUS               |
| 9. Limited Monitoring and Evaluation – Difficulty in assessing program impact.                       | 2.96 | SERIOUS               |
| 10. Sustainability of Projects – Some initiatives lack long-term implementation and follow-up.       | 3.04 | SERIOUS               |

As shown in table 8, The Civic Welfare Training Service (CWTS) program faces notable challenges, particularly in Lack of Funding (3.21) and Low Student Interest (3.11), both categorized as serious concerns. The insufficient financial support limits the scope and sustainability of community projects, while low engagement levels suggest that students may not fully recognize the significance of CWTS initiatives.

Additionally, Insufficient Community Collaboration (3.08) hinders the impact of projects, as weak partnerships with local government units (LGUs) and non-government organizations (NGOs) limit opportunities for outreach. Logistical challenges (3.06), such as transportation and inadequate facilities, also pose barriers to successful

implementation. To improve CWTS, University should strengthen community partnerships, explore additional funding sources, and create more engaging activities to boost student participation and program effectiveness.

**Table 9**  
**Literacy Training Service (LTS)**

| Indicator  | Mean | Verbal Interpretation |
|--|------|-----------------------|
| 1. Lack of Teaching Materials – Insufficient books, modules, and learning aids.                              | 2.93 | SERIOUS               |
| 2. Low Literacy Levels of Learners – Some communities have high illiteracy rates, making teaching difficult. | 3.00 | SERIOUS               |
| 3. Limited Training for NSTP Students – Students may lack proper pedagogical skills.                         | 2.89 | SERIOUS               |
| 4. Language Barrier – Teaching challenges arise when learners speak different dialects.                      | 2.77 | SERIOUS               |
| 5. Poor Attendance of Learners – Community members may not attend sessions consistently.                     | 2.88 | SERIOUS               |
| 6. Inadequate Support from Institutions – Some schools provide minimal resources and guidance.               | 2.86 | SERIOUS               |
| 7. Short Program Duration – Limited time to make a lasting impact on learners.                               | 2.87 | SERIOUS               |
| 8. Limited Availability of Venues – Lack of classrooms or safe spaces for teaching.                          | 2.95 | SERIOUS               |
| 9. Resistance from Some Communities – Some locals may not prioritize literacy programs.                      | 2.92 | SERIOUS               |
| 10. Difficulty in Measuring Progress – Assessing improvement in literacy levels can be challenging.          | 2.88 | SERIOUS               |

The Literacy Training Service (LTS) program encounters multiple difficulties, with the most pressing issues being Lack of Teaching Materials (2.93) and Low Literacy Levels of Learners (3.00). The limited availability of books, digital resources, and teaching aids makes it difficult for student facilitators to deliver effective lessons, while learners' weak foundational skills make traditional teaching approaches less effective. Other concerns include inconsistent institutional support and logistical difficulties, which affect the continuity of literacy programs. To address these challenges, University should invest in more learning materials, provide specialized training for facilitators, and integrate technology-based learning tools to improve literacy instruction.

**Table 10**  
**Reserve Officers' Training Corps (ROTC)**

| Indicator  | Mean | Verbal Interpretation |
|--|------|-----------------------|
| 1. Negative Perception – Some students associate ROTC with past issues of abuse and corruption.        | 3.03 | SERIOUS               |
| 2. Physical Demands – Rigorous training can be challenging for some students.                          | 3.06 | SERIOUS               |
| 3. Lack of Proper Facilities – Inadequate training grounds and equipment.                              | 3.03 | SERIOUS               |
| 4. Limited Interest Among Students – Many students prefer non- military training options.              | 3.06 | SERIOUS               |
| 5. Shortage of Competent Trainers – Some instructors lack proper military training experience.         | 2.94 | SERIOUS               |
| 6. Safety Concerns – Risk of injuries during training exercises.                                       | 3.23 | SERIOUS               |
| 7. Strict Discipline Requirements – Some students struggle with the strict military-style discipline.  | 2.93 | SERIOUS               |
| 8. Budget Constraints – Lack of funds for uniforms, equipment, and training activities.                | 3.11 | SERIOUS               |
| 9. Weather and Environmental Challenges – Training is affected by extreme heat or rain.                | 3.01 | SERIOUS               |
| 10. Lack of Career Continuity – Limited opportunities for ROTC graduates to continue military service. | 2.92 | SERIOUS               |

The Reserve Officers' Training Corps (ROTC) program faces significant barriers, particularly in Physical Demands (3.06) and Negative Perception (3.03). Many students struggle with the rigorous physical training requirements, making the program less accessible to those with health or fitness limitations.

Additionally, past controversies and misconceptions surrounding ROTC contribute to its negative image, discouraging students from enrolling. Other challenges include Limited Training Facilities (3.02) and Lack of Proper Equipment (2.99), which impact the quality of instruction and practical exercises. To enhance ROTC, institutions should modernize training facilities, implement wellness programs, and improve public awareness efforts to highlight its benefits in leadership and national service.

The study's findings indicate that NSTP is generally implemented effectively at the University of Caloocan City, with CWTS and LTS receiving higher implementation ratings than ROTC. Specifically, CWTS was highly rated in environmental projects (3.28) and student involvement (3.28), reflecting strong student participation. However, funding and logistical support (3.01) were identified as key challenges, affecting the sustainability of CWTS initiatives and implementation (Mallillin, et al. 2020).

LTS was found to be effective in values formation and literacy education, with values formation and character education (3.28) receiving the highest rating. However, improvement in literacy rates (3.04) and sustainability of literacy programs (3.12) scored lower, indicating the need for better follow-up mechanisms and increased institutional support (Washington, & Ventresca, 2004, pp. 82-97).

ROTC was rated moderately implemented, with its highest rating in contribution to national defense preparedness (3.26), reflecting its role in leadership development and national security training. However, weapons training (2.98) had the lowest score, highlighting infrastructural limitations and lack of training resources as key barriers to ROTC effectiveness.

A One-Way ANOVA test was conducted to determine if there were significant differences in the assessment of CWTS, LTS, and ROTC implementation. If the p-value is below 0.05, it confirms a statistically significant difference in how the three NSTP components are assessed. The findings suggest that students perceive CWTS as the most effectively implemented NSTP component, followed by LTS and ROTC.

The results further revealed that Filipino core values were observed among students to varying degrees. Pagka-MakaDiyos was highly evident in faith-based activities, while Pagka-Makatao was reflected in students' respect for others but showed challenges in emotional regulation. Pagka-Makakalikasan was evident in waste management and conservation efforts, but student involvement in environmental projects was lower. Pagka-Makabansa was moderately observed, with students showing national pride but limited civic engagement (Mallillin, & Paraiso, 2022).

These findings emphasize the importance of strengthening NSTP programs through policy improvements, financial support, and student engagement initiatives to maximize its impact on nation-building, environmental sustainability, and community development.

## CONCLUSIONS

The study concludes that NSTP plays a crucial role in shaping students' civic consciousness, leadership skills, and environmental responsibility, yet its effectiveness is hindered by financial, logistical, and engagement-related challenges. CWTS and LTS effectively promote community involvement and literacy but require better resources and



institutional support. ROTC remains valuable in defense training and discipline building, but it needs modernized training facilities and improved public perception to increase student participation.

In terms of Filipino core values, NSTP successfully instills nationalism, faith, and social responsibility among students, though active participation in environmental and civic initiatives needs strengthening. The findings emphasize the need for policy improvements, enhanced funding, and innovative strategies to maximize NSTP's impact on both students and the broader community.

## PROPOSED INSTITUTIONAL WASTE MANAGEMENT DEVELOPMENT PLAN



## INSTITUTIONAL WASTE MANAGEMENT DEVELOPMENT PLAN

*Promoting Environmental Consciousness through  
Sustainable Practices*



### PROPOSERS:

Prof. Dionisio S. Reyes   Prof. Catllella C. Yee   Prof. King Diony L. Reyes



**Objective:** To promote sustainable waste management practices among college students while fostering environmental awareness and sustainability.

| Objective  | Strategies/Activities  | Time Frame   | Expected Outcomes  |
|--|--|--------------|--|
| Enhance waste segregation practices among students and faculty.                          | <ul style="list-style-type: none"> <li>- Implement a color-coded waste bin system across the campus.</li> <li>- Conduct waste segregation workshops and information campaigns.</li> </ul>  | 3–6 months   | Increased proper waste disposal and segregation compliance among students and faculty.                         |
| Promote recycling and waste reduction initiatives.                                       | <ul style="list-style-type: none"> <li>- Establish a campus recycling station for plastics, paper, and e-waste.</li> <li>- Partner with local recycling centers and businesses to process collected materials.</li> </ul>                  | 6–12 months  | Reduced waste volume and increased recycling efficiency within the institution.                                |
| Develop sustainability awareness and eco-friendly habits among students.                 | <ul style="list-style-type: none"> <li>- Integrate environmental awareness topics into NSTP and other courses.</li> <li>- Launch a green campus campaign to promote eco-friendly practices.</li> </ul>                                     | 6–12 months  | Students develop environmentally responsible behaviors and actively participate in sustainability initiatives. |
| Implement a waste reduction policy in school canteens and offices.                       | <ul style="list-style-type: none"> <li>- Integrate environmental awareness topics into NSTP and other courses.</li> <li>- Launch a green campus campaign to promote eco-friendly practices.</li> </ul>                                     | 6–12 months  | Decreased single-use plastic consumption and improved waste management in school facilities.                   |
| Strengthen collaboration with government and private organizations for waste management. | <ul style="list-style-type: none"> <li>- Form partnerships with LGUs, NGOs, and private companies for sustainable waste disposal and management programs.</li> <li>- Organize joint clean-up drives and environmental projects.</li> </ul> | 12–18 months | Established long-term collaborations for improved institutional waste management efforts.                      |
| Implement a monitoring and evaluation system for waste management.                       | <ul style="list-style-type: none"> <li>- Develop a waste audit program to track progress in waste reduction and recycling.</li> <li>- Assign NSTP students or eco-volunteers to monitor waste management compliance.</li> </ul>            | 12–24 months | A data-driven approach to improving waste management strategies and ensuring long-term sustainability.         |

This proposed waste management plan aims to enhance campus-wide sustainability efforts, ensuring that students, faculty, and staff actively contribute to a cleaner, greener, and more responsible school environment. By implementing these strategies within the designated time frame, the institution can expect significant reductions in waste generation, improved recycling habits, and long-term environmental awareness.

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