

Research Article

WATER, SANITATION, AND HYGIENE (WinS) PROGRAMS: IMPLEMENTATION AND INTEGRATION

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Abstract

This qualitative study assessed the implementation and integration of the Water, Sanitation, and Hygiene in Schools (WinS) Program in secondary schools within the Mabini District. Interviews with Win's coordinators were thematically analyzed based on the DepEd WinS monitoring checklist, revealing that water supply and sanitation were partially addressed. Still, hygiene promotion, health education, and deworming were not consistent. There was minimal integration into science instruction because there were no structured lesson plans, a lack of awareness, and inadequate teacher training. Administrative support and MOOE funding as well as stakeholder collaboration were critical for sustainability. Missing these opportunities to grow environmentally responsible behaviors is these gaps. The study shows that education is the place where Win's concepts can be embedded to conserve water, reduce waste, and help build climate resilience in mitigating global warming. Teacher capacity needs to be strengthened and WinS needs to be aligned with curriculum goals toward long-term behavioral change and environmental sustainability.

Keywords: Sanitation and hygiene, Wash in Schools (WinS), Program Implementation.

INTRODUCTION

The Department of Education (DepEd) implemented DepEd Order No. 10, s. 2016, titled Policy and Guidelines for the Comprehensive Water, Sanitation, and Hygiene in Schools (WinS) Program, or the WinS Policy. This initiative was designed to ensure access to clean water, proper sanitation, and essential hygiene practices in schools, promoting student health, well-being, and a conducive learning environment. As a key component of WinS, WASH (Water, Sanitation, and Hygiene) is a structured framework that improves school hygiene standards through proper sanitation, safe food handling, hygiene education, menstrual health management, and deworming (DepEd, 2016). The program extends beyond basic hygiene practices such as handwashing, tooth brushing, and deworming by incorporating broader interventions that address clean water access, sanitation facilities, health education. and teacher training to strengthen its implementation (DepEd, 2016). According to UNICEF and WHO (2018), poor WASH conditions in schools significantly contribute to higher absenteeism, increased disease risk, and reduced learning outcomes. Their report highlights the critical role of integrating WASH into education to enhance student health and academic performance. Similarly, Jasper et al. (2012) found that improving WASH facilities in schools directly correlates with lower diarrhea rates, better hygiene behaviors, and improved school attendance, demonstrating that school-based hygiene programs are essential in reducing illness-related absences and fostering a healthier learning environment. To strengthen WinS implementation, DepEd introduced the Three-Star Approach (TSA), a monitoring and improvement tool outlined in DepEd Order No. 10, s. 2016. According to DepEd and GIZ (2019), TSA consists of two stages. The Immediate Actions stage focuses on low-cost, basic hygiene improvements, such as proper handwashing facilities and routine cleaning.

The Progressive Improvements stage involves upgrading WASH infrastructure, strengthening hygiene education, and integrating sustainable policies to ensure long-term success. These steps allow schools to gradually enhance their WASH practices while fostering a culture of hygiene and sanitation. The UNESCO (2017) report on Education for Sustainable Development Goals: Learning Objectives highlights the importance of integrating real world environmental and health issues such as water quality, sanitation, and hygiene into science education. Schools that embed WASH education in science curricula have been shown to have lower absenteeism rates and better student health outcomes (WHO & UNICEF, 2018). Furthermore, science-based hygiene education plays a vital role in preventing diseases like diarrhea and respiratory infections, demonstrating its direct impact on student wellbeing and school attendance (WHO & UNICEF, 2018). By integrating these topics into science education, students not only gain theoretical knowledge but also develop practical skills to address public health challenges in their communities. Further research by Jasper, Le, and Bartram (2012) suggests that incorporating hygiene, water safety, and sanitation education into science subjects leads to long-term behavior change. Science-based school interventions are linked to improved sanitation practices in communities, reinforcing the need for WASH integration into science curricula for sustainable public health improvements. Similarly, Fewtrell et al. (2005) discuss how school-based hygiene programs are cost-effective strategies for reducing disease transmission. Teaching students about water purification, sanitation, and hygiene in science lessons empowers them to adopt healthy behaviors and influence their families and communities, contributing to broader improvements in public health and hygiene standards. By embedding WinS topics into science education, schools can foster critical thinking, enhance environmental awareness, and promote responsible behavior. This approach ensures that students not only gain scientific knowledge but also develop practical solutions to real-world challenges related to public health, sanitation, and

sustainability. Moreover, studying the WinS program provides valuable insights into its effectiveness in improving student health, academic performance, and long-term behavior change, reinforcing the importance of science-based interventions in fostering a healthier and more sustainable school environment.

This study is supported by Maslow's Hierarchy of Basic Needs, which was introduced by Abraham Maslow in 1943. According to Abraham Maslow (1954), a person's most fundamental needs are air, food, clothing, and shelter, which are survival or physiological needs. Unless these needs are met, the person cannot progress on the continuum to achieve higher levels of growth and development (Hamel et al., 2003). The WinS program addresses the most basic level of Maslow's hierarchy: physiological needs such as clean water, proper sanitation, and good hygiene. These are essential for survival and maintaining good health; however, if these needs are unmet, students have a high risk of illnesses, dehydration, and poor hygiene. This can hinder the ability of each learner to attend school and focus on learning. Integrating it into the science curriculum helps students focus on higher-order needs by first addressing their physiological and safety needs.

The Context, Input, Process, and Product (CIPP) Model by Daniel Stufflebeam (1971) provides a structured way to assess educational programs like DepEd's WASH in Schools (WinS) Program. This model ensures that WinS is not only wellplanned but also effectively implemented and sustained. Context evaluation helps determine whether the program is necessary by looking at existing sanitation issues in schools and ensuring it aligns with national and global (Stufflebeam & Zhang, 2017). The input evaluation then examines the availability of resources, policies, and strategies such as funding, infrastructure, teacher training, and learning materials that support the program (Al Hudawi & McLaughlin, 2022). Moving forward, the process evaluation focuses on how well WinS is executed, checking if schools follow DepEd guidelines, hygiene lessons are effectively delivered, and facilities are well-maintained. This step identifies gaps in implementation, allowing for improvements (Stufflebeam, 2003). Finally, the product evaluation assesses the program's impact, particularly in improving student hygiene practices, reducing absenteeism caused by health issues, and ensuring long-term sustainability (Fitzpatrick, Sanders, & Worthen, 2011). By applying the CIPP Model, educators and policymakers can continuously refine and improve WinS, making it more effective in creating healthier, safer, and more conducive learning environments for students.

The United Nations General Assembly (2010) formally acknowledged the human right to clean water and sanitation for home and personal use. Everyone has the right to an adequate supply of continuously flowing, safe, acceptable, physically accessible, and affordable water. Due to the rising concerns about poor water quality, the United Nations listed it as one of its Sustainable Development Goals (SDGs), specifically SDG 6 (Clean Water and Sanitation) and SDG 4 (Quality Education). Aligned with the United Nations SDGs, the Department of Education (2016) released its DepEd Order No. 10, s. 2016, titled "Policy and Guidelines for the Comprehensive Water, Sanitation and Hygiene in Schools (WINS) Program," which established a systematic approach to improving the health and learning outcomes of students through better water, sanitation, and hygiene (WASH) practices in schools. This order outlines the policy framework

and guidelines for implementing the WinS program across all the country's public elementary and secondary schools. WinS program aims to improve equitable access to safe water, adequate toilets, and hand washing facilities, which are vital for ensuring effective hygiene and sanitation projects. A proper water source that will supply the toilets and handwashing facilities of the school is required to attain good hygiene and sanitation. However, their absence will increase the health risk, especially for the learners.

Schools are responsible for implementing the WINS program and ensuring that WASH facilities are available, functional, and accessible at the school level. Schools must also promote hygiene practices and integrate WinS education into the curriculum. Monitoring and Evaluation require schools to monitor the status of WASH facilities and practices regularly. This includes conducting annual water quality testing and evaluating the impact of the WINS program on student health and learning outcomes. The order also emphasizes the need for capacity building among school administrators, teachers, and other stakeholders. Training programs and resources are to be provided to ensure effective implementation of the WINS program. The policy encourages schools to have partnerships and collaboration with different stakeholders to support the implementation and sustainability of the WINS program. Partnerships can help mobilize resources, provide technical assistance, and enhance community engagement (Department of Education, 2016).

Food sanitation in schools plays a crucial role in preventing foodborne illnesses and ensuring student health. Proper food handling, preparation, and storage are essential to maintaining hygiene standards. According to the World Health Organization (WHO, 2019), poor food hygiene practices in schools contribute to gastrointestinal diseases and malnutrition, affecting students' attendance and academic performance. UNICEF (2021) highlights that school-based food safety programs significantly reduce the incidence of foodborne diseases by enforcing strict hygiene protocols. In the Philippines, the Department of Education (DepEd) has implemented policies promoting food safety in school canteens through guidelines on the safe preparation and handling of food (DepEd Order No. 13, s. 2017).

Oral hygiene and handwashing practices are critical to preventing communicable diseases among students. Studies by Fewtrell *et al.* (2005) indicate that proper handwashing with soap reduces the incidence of diarrheal diseases by up to 50%. Meanwhile, research by Petersen and Ogawa (2016) emphasizes the role of school-based oral hygiene programs in reducing dental caries and improving overall student wellbeing. The Centers for Disease Control and Prevention (CDC, 2020) further stress that integrating handwashing education into school curricula significantly decreases infection rates. In the Philippines, the Essential Health Care Program (EHCP) has been implemented in schools to promote daily handwashing and tooth brushing activities (UNICEF, 2018).

The lack of menstrual hygiene management (MHM) in schools contributes to absenteeism and decreased academic performance among female students. Sommer et al. (2015) found that inadequate MHM facilities lead to increased school dropouts and social stigma. UNICEF (2019) underscores that providing proper menstrual hygiene education and facilities, such as clean restrooms and sanitary products, enhances girls' school participation and confidence. Locally, DepEd's WinS program emphasizes MHM by ensuring that schools provide menstrual hygiene-friendly facilities and education (DepEd Order No. 10, s. 2016).

Access to clean water in schools is fundamental to students' health and hygiene. WHO & UNICEF (2018) reported that schools with an adequate water supply experience lower rates of waterborne diseases and improved student hydration and concentration levels. Research by Jasper, Le, and Bartram (2012) shows that installing water filtration systems in schools leads to a significant reduction in absenteeism related to waterborne illnesses. In the Philippines, water supply remains a challenge in some rural schools, prompting DepEd to integrate water provision programs under the WinS policy (DepEd, 2016). School-based deworming programs are an effective strategy for improving child health and cognitive function. According to Bundy et al. (2017), regular deworming interventions in schools significantly reduce the prevalence of parasitic infections, leading to improved nutritional status and school performance. The WHO (2020) highlights that mass deworming campaigns are cost-effective and essential for maintaining student health in developing countries. In the Philippines, the National Deworming Month, conducted biannually, targets school-aged children to reduce the prevalence of soil-transmitted helminths (DOH, 2019).

Adequate sanitation facilities in schools are vital for preventing disease transmission and promoting hygiene. According to the Joint Monitoring Programme (JMP) by WHO & UNICEF (2019), a lack of proper toilet and handwashing facilities contributes to the spread of infections and affects student retention. Studies by Freeman et al. (2014) indicate that improved sanitation infrastructure in schools enhances student dignity, particularly for adolescent girls who require privacy during menstruation. In response, the Philippine government has prioritized the construction of gender-sensitive sanitation facilities in schools under the WinS program (DepEd, 2016). Hygiene education in schools is essential for fostering lifelong healthy habits. The Global Water Partnership (2020) states that incorporating hygiene and sanitation topics into the curriculum enhances students' understanding of disease prevention. Research by Dreibelbis et al. (2016) suggests that interactive hygiene education programs lead to improved handwashing behaviors and reduced illness rates among schoolchildren. In the Philippines, health education is integrated into the K-12 curriculum, with a focus on hygiene and sanitation practices to ensure students develop sustainable habits (DepEd, 2017).

Proper waste management in schools prevents environmental pollution and health risks. Studies by Alam and Ahmade (2013) emphasize that schools with effective solid waste management systems experience lower levels of pollution and student exposure to harmful pathogens. The United Nations Environment Programme (UNEP, 2021) advocates for integrating environmental sanitation education into school programs to encourage responsible waste disposal and sustainability practices. Locally, DepEd promotes waste segregation, recycling, and proper disposal through its Solid Waste Management Program (DepEd Order No. 72, s. 2003). Ngales (2007) stated that students in schools in low-income countries (LICs) often do not receive basic hygiene education in their national curriculum, and teachers are not equipped with the resources to provide the information to their students. While there is limited research on the global availability of adequate water, sanitation, and hygiene (WASH) facilities in schools, a survey conducted by the United Nations Children's Fund (UNICEF) across 60 priority WASH countries revealed that only 50% of these countries provide sufficient water and sanitation services for school children (UNICEF, 2012). The importance of WASH in schools is increasing, as evidenced by the proposed post-2015 Development Goals to be achieved by 2030 (Deroo *et al.*, 2015). Here in the Philippines, it has been specified in the DepEd Order No. 10, series 2016, that the key concepts of the WASH in School program (WinS) must be integrated into the K to 12 curriculum, and education materials on the WinS program must be provided to teachers and students. However, in the curriculum guide of the Science in the secondary level, it has not been integrated into the curriculum.

In addition, CARE (2012) said that schools lacking adequate WinS conditions have been shown to have poorer health and learning outcomes among their pupils. A randomized controlled trial discovered that a WinS intervention in schools reduced the risk of diarrheal disease by 66% among students in the intervention group compared to the control group. WinS programs in schools can create a ripple effect when children learn about hygiene in school; they carry that knowledge and those practices home, becoming catalysts for positive change within their families and communities (Onyango-Ouma et al., 2005). It was mentioned by Dalisay et al., 2024, that the WASH situation in the community and in the school are linked to one another, which could, in turn, contribute to disease control and prevention, ultimately leading to improved health and learning outcomes. Schools mentioned good practices that enabled Win's program implementers to overcome challenges, such as establishing partnerships with the public and private sectors, such as the LGUs, to provide additional funds and resources for constructing WiNS facilities (Dalisay et al., 2024). However, most of the research only focused on monitoring and revisiting the Wash in Schools program, but less or almost nothing conducted a study about assessing the integration of the Wash in Schools program in the curriculum, specifically in the science curriculum.

Integrating the key concepts of the Wash in Schools program in the K to 12 curriculum, such as in the science subject, is one of the standards of health education (DepEd, 2016). Educating students often become agents of change, bringing WinS knowledge and practices into their homes and communities. Furthermore, the integration of WinS concepts into the K to 12 curriculum is crucial for building a foundation of good health practices among students by embedding these concepts across various subjects and school activities, such as by teaching students about the biological and chemical aspects of water, sanitation, and hygiene. For example, lessons on microorganisms can include discussions on how bacteria and viruses spread through unclean water and improper sanitation. Practical activities like water quality testing can be included to provide hands-on learning experiences. Students learn the importance of water, sanitation, and hygiene and develop the skills and habits needed to maintain these practices throughout their lives. This holistic approach ensures that WinS education is not just theoretical but is lived out daily, contributing to better health outcomes and a more effective learning environment. Despite of the existence of comparable studies, there is still a great need to investigate the real implementation and integration of the WASH in Schools (WinS) program in the K to 12 curriculum. The integration of important concepts

of WinS, particularly in Science, complies with DepEd's standards of health education (DepEd, 2016). When embedded meaningfully, such integration not only teaches fundamental knowledge regarding water, sanitation, and hygiene but also makes students active agents of change-carrying these practices to their homes and communities. Such integration is not confined to theoretical teaching; it involves practical applications like testing water quality and the study of microorganisms causing disease transmission. Incorporating Win's concepts in a range of subjects and activities ensures a holistic model that promotes lifelong habits and awareness of health in students, contributing to better health outcomes and healthier learning environments. This study is therefore timely and pertinent as it aims to look at how the standards are being achieved in practice and how further they can be improved through strategic implementation of curriculum. This study aims to evaluate the implementation and effectiveness of the DepEd WASH in Schools (WinS) Program in secondary schools within the Mabini District during the 2024-2025 school year. The study is significant for students, teachers, and school administrators. For students, it enhances their understanding of health and hygiene practices, bridging knowledge gaps and promoting healthier habits that reduce waterborne diseases. Teachers benefit by gaining insights into effective instructional strategies and areas where additional training is needed to teach WinS concepts. School administrators can make informed decisions to improve health policies and resource allocation for a healthier school environment. The scope of the study is limited to the perspectives of WinS coordinators and focuses on key components such as sanitation, hygiene education, and facilities, excluding broader input from other stakeholders and external factors like budget and infrastructure

Objectives of the Study:

This study aims to assess the implementation of the WASH in Schools (WinS) program in the Mabini District. Specifically, it seeks to answer the following questions:

- 1. What is the profile of the schools regarding the implementation of the WinS program?
- 2. How is the WinS program implemented across the schools in the district?
- 3. In what ways is the WinS program integrated into subject areas?
- 4. What are the challenges encountered in: a. the implementation of the program; and b. the integration of WinS concepts into the subject areas?
- 5. What intervention can be proposed based on the findings of the study?

METHODOLOGY

This research utilized a qualitative design to evaluate the DepEd WASH in Schools (WinS) Program's effectiveness in the Mabini District. The study used in-depth interviews with five secondary school WinS coordinators in Concepcion National High School, Lungsodaan High School, San Jose High School, San Roque National High School, and Tangkigan Integrated School. The schools were purposely selected since they were varied implementation in terms of infrastructure, access to clean water, and sanitation facilities, making them relevant settings for assessing the program. The research sought to gain coordinators' experiences, challenges, and insights regarding the WinS program implementation, especially regarding water, sanitation, and hygiene practices. Thematic analysis was applied to analyze the interview data, in a systematic manner, to determine consistent patterns, main themes, and findings. The analysis was guided by the Context, Input, Process, and Product (CIPP) model to ascertain an overall assessment. In the Context stage, the district's demand for the WinS program was evaluated based on school setting and health-related issues. The Input assessment was on resources, policies, and strategies that were available, the Process evaluation was on the program's effectiveness and execution, and finally, the Product component was assessing outcomes like changes in hygiene practice and student health. To acquire accurate data, the researcher monitored the following steps of qualitative data analysis to Creswell (2001). The first is to organize data, the researchers jotted down the transcribed recording interpretation during the process, identified the key points, identified general categories or themes, and classified them. The final step is to integrate and summarize the participants' data using the evaluation coding and values coding. After which the researcher follows the six phases of thematic analysis by Nowell (2017), consisting of: (1) familiarizing with the data,(2) generating initial codes,(3)searching for themes, (4)reviewing themes,(5) defining and naming themes, (6) producing the report. Ethical thinking was at the heart of the research design. All the participants had informed consent, and this was done so that it was voluntary and open. The research accepted the use of AI tools ethically to clarify and organize the manuscript, but all data gathering and analysis were conducted by the researcher to ascertain the validity of the results. The interview guide employed during the research was validated by the Public Schools District Supervisor, the school principals, and the research coordinator to confirm that the questions were concise, applicable, and matched the study goals. During the research process, the research adhered to a high level of ethical accountability, with transparency in authorship, disclosure of AI tools, and data protection.

RESULTS

The profile of the Water, Sanitation, and Hygiene in Schools (WinS) evaluation results indicate levels of implementation between the five schools with variations around five core indicators: Water, Sanitation, Hygiene, Deworming, and Health Education. The school profile based on the WASH in Schools (WinS) checklist (Table 1) was assessed across five key indicators: Water, Sanitation, Hygiene, Deworming, and Health Education, using a star-based rating system (No Star to $\star \star \star$). The data collected from five schools (A to E) over two school years (2022-2023 and 2023-2024) highlights varying levels of compliance and implementation success across the indicators. Most schools showed either consistent or improved performance in the Water category. School E achieved a 2-star rating in 2022-2023 but slightly declined to 1-star in 2023-2024. School A maintained a 1-star rating in both years, indicating minimal improvement or lack of water access or quality upgrades. School C consistently showed no star, suggesting a critical gap in water service delivery, possibly lacking access to safe drinking water or regular supply. School D progressed from no star in 2022–2023 to 1 star in 2023– 2024. These results indicate the need for more targeted interventions to ensure regular, clean, and accessible water in all schools.

School	School Year	Water	Sanitation	Hygiene	Deworming	Health Education
School A	2022-2023	*	**	No star	No star	No star
	2023-2024	*	**	No star	No star	No star
School B	2022-2023	No star	*	No star	***	No star
	2023-2024	*	*	No star	No star	No star
School C	2022-2023	No star	No star	No star	No star	No star
	2023-2024	No star	No star	No star	No star	No star
School D	2022-2023	No star	*	No star	***	**
	2023-2024	*	*	No star	No star	**
School E	2022-2023	**	**	*	***	**
	2023-2024	*	*	No star	***	No star

Table 1. WINS Three-Star Approach School Profile (SY 2022–2023 and 2023–2024)

Sanitation practices were relatively more stable across schools. Schools A and E maintained a consistent 2-star rating, showing established but not yet exemplary sanitation facilities. Schools B and D were at 1-star across both years, which suggests essential compliance with minimum sanitation standards. However, School C remained at no star, indicating a serious concern in this area. The lack of functional and gendersensitive toilets, privacy, or sanitation management may contribute to this rating. Hygiene implementation remains a widespread challenge. Except for School E, which attained a 1star rating in 2022-2023 before regressing to no star in 2023-2024, all other schools had no stars across both years. This indicates minimal practice of handwashing with soap, toothbrushing activities, or access to hygiene materials. This weakness may directly affect health outcomes and is a clear area that demands immediate attention and sustainable programming. Deworming is one of the more successful components of the WinS program based on the ratings. Schools B, D, and E reached the highest possible three stars in 2022-2023, suggesting strong compliance with biannual deworming and high coverage among learners. However, Schools B and D declined in 2023-2024, dropping to no star, which could be due to inconsistent implementation or lack of record submission. School E remained at three stars, highlighting a model practice. Meanwhile, Schools A and C continued to perform poorly, pointing to lapses in health coordination and monitoring.

Performance under the Health Education indicator was mainly low. School D stands out for maintaining a 2-star rating in both years, suggesting the presence of advocacy materials, integration in lessons, and stakeholder involvement. School E had a strong 2-star in 2022–2023 but fell to no star the following year, perhaps due to limited follow-up or staff turnover. All other schools (A, B, and C) did not meet the criteria for even a 1-star rating, indicating that health education components are either not being taught systematically or not documented effectively.Thus, although there is some progress in some schools in the rollout of the WinS program, there are wide gaps in water availability, hygiene behavior, sanitation facilities, and deworming coverage. These require focused interventions to promote the health and well-being of students.

Secondly, during the one-on-one interviews among the respondents, four emerged from the experiences during the implementation of the WinS program in Mabini Disctrict, Philippines, such as:Funding and Financial Support, Monitoring and Policy Integration, Administrative and Teacher Efforts, and Student and School Participation. These themes can be meaningfully categorized into two broad categories: Institutional Support Systems and Human Agency and Stakeholder Engagement. Institutional mechanisms, such as the allocation of MOOE funds in schools and the incorporation

of WinS into school policies, demonstrate how policy and budget alignment offer structural continuity to WASH initiatives. Community financing and active engagement with PTAs and government highlight the significance of multi-level financial partnerships (Adukia et al., 2020). At the same time, the active leadership of WinS coordinators and collaborative actions of school personnel demonstrate how human agency sustains program continuity were highlighted by respondent 3 and 5 this was also aligned in the result of the study of (Chatterley et al., 2014). Student involvement, through activities such as clean-up drives, shows a culture of shared responsibility and embeddedness, supported by UNICEF's (2019) contention that learner engagement enhances behavioral sustainability. Together, these issues highlight that sustainability of the WinS program emanates from where institutional scaffolding and relational investment intersect at every school-community level.

However in terms of the respondents view towards the effectiveness of the Implementation of WinS program the following themes were determine:

Theme 1: Institutionalizing Hygiene Practices

The institutionalization of hygiene in school policy and practice hac facilitated its sustainability over the long term. Formal systems of monitoring and participatory involvement further enhance this transition. As respondents two and three indicated, "Our school included hygiene in school policy through regular monitoring and evaluation. policy through regular monitoring and evaluation. These quotes show that making hygiene part of school rules and routines helps keep people responsible and encourages long-term healthy habits, following the policy's recommendations.

Theme 2: Unstable Water Supply

Even though schools say they have "enough" water, the supply is actually unstable and changes with the seasons. For example, some said, "We have adequate water supply" (Respondents 1, 3, 5), but another shared, "We don't have water supply, particularly in the summer" (Respondent 4). This shows a gap between what's reported and what's really happening, which is common in rural areas with weaker infrastructure.

Theme 3: Gaps in Hygiene Habits for Younger Students

Despite having facilities and policies, the younger students are still unable to practice hygiene. Participants expressed worries such as, according to respondents 1 "They still need knowledge for them to have discipline" while respondent 5 "The problemis in lower grades"5. This indicates that there should be age-specific hygiene programs to enhance behavior among younger students (Aduki et al.,2020).

Theme 4: Incomplete Utilization of Sanitation Facilities

Sanitation equipment exists but is not always utilized appropriately or maintained by the students For instance, "Even color coding of trash cans are available, they don't care and we don't have compost pit" according to respondent. This indicates that facility existence alone isn't sufficient students must be prompted and directed to utilize them appropriately (Chatterley *et al.*, 2014).

Theme 5: Inconsistent Menstrual Hygiene Provision

Although there are private areas, there are uneven supplies, depending on individual goodwill and not systemic provision."Most of the time I will give sanitary napkin to my students since they don't have" respondent one and three said.

Theme 6: Misinformation Undermining Deworming

Deworming programs are regularly planned but poorly received owing to misinformation and low parental consent."The problem is parentsrefusal." (Respondent 1)"Most students do not want deworming due to negative thinking." (Respondent 2). This attests to a knowledge mobilization gap calling for greater participatory awareness campaigns to enhance the program (DOH, 2019).

Theme 7: Nutrition-Based Food Sanitation

In contrast to other sectors, food sanitation depicts a good policy implementation. Respondents point to vendor regulation and exclusion of unhealthy foods. "We only accept foods under the green category." (Respondent 5) "Requiring vendors to have a permit". These suggest higher levels of policy compliance and stakeholder buy-in around food, an area where health standards are more tangible and enforceable.

Table 2 displays the thematic analysis of the difficulty of integrating the WinS program, both representing individual behaviors and systematics structural issues. This themes can be categorized into three major themes such as: the behavioral internalization gap, curriculum misalignment and teacher preparedness challenges and resource limitation and infrastructure barriers.

The challenges encountered in implementing and integrating the WinS program in schools across the Mabini District. The challenges are limited resources and funding, water supply issues, teacher-related challenges, lack of explicit integration into the science curriculum, and parental and student challenges. Each of these barriers plays a significant role in the effective implementation of the program. A primary concern identified in the table is limited resources and funding. Respondents noted that while essential water availability is ensured, the lack of sufficient funds for maintaining hygiene supplies such as soap, toilet bowl cleaners, and other essential sanitation materials continues to be a significant obstacle. One respondent observed, "We do not have a problem in terms of water, but we lack the supplies such as soaps, financial samga need sa CR like toilet bowl cleaner" (Respondent 5). This aligns with findings from Gonzales (2021), who emphasizes that financial constraints are a significant barrier to sustaining WinS programs, particularly in rural areas where resources are already stretched thin. Furthermore, financial support for consistent upkeep has been identified as a key challenge in maintaining WinS infrastructure (Magsino et al., 2021; World Bank, 2019). Water supply issues were also a major challenge identified in the data. Respondents highlighted the irregular availability of clean water, directly impacting essential hygiene practices like handwashing and sanitation. One respondent remarked, "The main challenges in implementing the WinS program in our school are the inconsistent water supply and limited or irregular access to clean water, which affects handwashing, drinking, and sanitation" (Respondent 2). These concerns align with previous research, which has consistently found that reliable access to clean water is a prerequisite for effective hygiene and sanitation programs in schools (Cabral et al., 2019; USAID, 2020). Teacher-related challenges are also a critical factor in the success of the WinS program. A significant issue identified was the lack of teacher training specifically focused on integrating WinS concepts into the curriculum. Many respondents indicated that teachers were not sufficiently equipped to prioritize hygiene education due to limited exposure to professional development opportunities. One respondent shared, "No, I tend to forget due to limited time and a lack of teaching materials or resources" (Respondent 4). Research by Alibayan et al. (2021) and Ransley et al. (2020) suggests that teacher preparedness is a vital determinant of the success of health programs in schools. Without adequate training, teachers often struggle to effectively integrate health and hygiene topics into a demanding curriculum (Cahill et al., 2019; Magsino et al., 2021).

 Table 2. Thematic Matrix: Challenges in Integrating the WinS Program

Code	Thematic Category	Representative Quote (Respondent)	Analytical Insight
Lack of habit	Behavioral	"While students are generally introduced to hygiene, there	Highlights gap between awareness and habitual
formation	Internalization Gap	is insufficient internalization of these behaviors."	behavior. (Hannigan et al., 2019)
Hygiene seen as	Curriculum	"As we look at the curriculum guide, it has not been	Without formal inclusion, WinS is marginalized in
non-academic	Misalignment	included" (Respondent 2)	instruction. (Delos Reyes & Tabuga, 2020)
Limited time and	Teacher	"No, I tend to forget due to limited time and a lack of	Points to professional development and instructional
materials	Preparedness	teaching materials or resources." (Respondent 4)	resource gaps. (Alibayan et al., 2021)
	Challenges		
No soap or	Resource	"We lack the supplies such as soaps, financial samga need	Underscores how basic supplies are essential for
cleaning supplies	Constraints	sa CR like toilet bowl cleaner." (Respondent 5)	sustainability. (Gonzales, 2021)
Inconsistent	Infrastructure	"The main challenges are the inconsistent water supply	Reinforces water access as a precondition for hygiene
water supply	Barrier	and limited access to clean water." (Respondent 2)	programs. (Cabral et al., 2019; USAID, 2020)
Parental non-	Home-School	"The challenge is encouraging the students to be	Behavior change needs reinforcement across contexts.
involvement	Disconnect	responsible and develop self-discipline." (Respondent 1)	(World Bank, 2020; Magsino et al., 2021)

The lack of explicit integration into the science curriculum emerged as another key challenge. Several respondents noted that WinS concepts were not sufficiently embedded in the official curriculum guidelines, leaving teachers with little direction on incorporating these topics into their science lessons. One teacher remarked, "As we look at the curriculum guide, it has not been included, though I am not a science teacher" (Respondent 2). This finding is consistent with research by Cabalfin and Germar (2022), which identified that the absence of precise curriculum integration for health and sanitation topics leads to neglect of these crucial issues in classroom teaching. Integrating WinS concepts into existing subjects like science is essential to ensure that students receive comprehensive education on hygiene and sanitation (Alibayan *et al.,* 2021; Ransley *et al.,* 2020).

Parental and student challenges further complicate the implementation of WinS. Respondents observed that while students may have a basic understanding of hygiene practices, their behaviors were influenced by a lack of consistent support from home. Many parents were noted to be inconsistent in reinforcing hygiene practices, which undermines the efforts made at school. One respondent stated, "The challenge is encouraging the students to be responsible and develop selfdiscipline" (Respondent 1). This finding is supported by studies such as those by Magsino et al. (2021) and Cahill et al. (2019), which emphasize parents' critical role in the success of health and hygiene programs. Parental involvement is crucial for reinforcing health behaviors taught in school (World Bank, 2020). Additionally, students, especially those in lower grades, often lack the motivation to consistently apply hygiene practices, pointing to the need for behavior change strategies that engage students and their families (Alibayan et al., 2021). Moreover highlights the respondents' suggestions for improving the integration of the WinS (Water, Sanitation, and Hygiene) program into the science curriculum. The suggestions are categorized into themes: Need for Structured Curriculum Integration, Curricular Emphasis and Prioritization, Relevant Science Topic Integration, Hands-on and Experiential Learning, Performance-based Tasks and Application, and Health-Academic Linkage. These themes reflect the need for a more coherent and purposeful approach to embedding WinS concepts into science education.

A central suggestion raised by respondents was the Need for Structured Curriculum Integration. Teachers emphasized the need for structured lesson plans to provide a clear framework for WinS integration. One respondent noted, "There should be a structured lesson plan to integrate the WinS program" (Respondent 1), while another stressed the importance of officially incorporating WinS into the curriculum, stating, "It is not included and written in the curriculum gyud, satinudanay..." (Respondent 5). The need for structured integration is echoed by research from Gonzales et al. (2020), which identified that the absence of a clear curriculum structure for WinS often leads to inconsistent implementation and a lack of focus on key hygiene and sanitation topics. Structured curriculum integration ensures teachers have the tools and resources to effectively teach WinS principles (Cahill et al., 2019; Magsino et al., 2021). In line with this, respondents also highlighted the Curricular Emphasis and Prioritization of the WinS program. They suggested that DepEd should give WinS equal importance to core subjects such as literacy and numeracy. One respondent remarked, "DepEd must give equal importance to the WinS program, like literacy and numeracy"

(Respondent 1). This point aligns with findings by Ransley et al. (2020), which suggest that when health education programs like WinS are prioritized within the curriculum, they are more likely to be effectively implemented and recognized as integral to students' overall education. Including WinS as a core subject, alongside literacy and numeracy, would likely lead to greater student engagement and awareness regarding health and hygiene (Gonzales, 2021).

The theme of Relevant Science Topic Integration reflects respondents' suggestions to embed WinS concepts into existing science topics. This includes topics such as microbiology, environmental science, and health education, all of which provide a natural fit for discussing water, sanitation, and hygiene issues. One respondent proposed, "Embed WASH concepts into relevant science topics such as microbiology... environmental science... and health education" (Respondent 2). This suggestion is supported by research by Cahill et al. (2019), who argue that health-related concepts can be integrated into science curricula, especially through topics that deal with microorganisms, ecosystems, and human health. Integrating WinS into these science subjects would ensure that students learn about hygiene in a scientific context and enable them to see the practical application of these concepts in their daily lives (Magsino et al., 2021). Hands-on and Experiential Learning was another key suggestion, with respondents advocating for practical, science-based activities to bring WinS concepts to life. Respondents suggested developing ageappropriate hands-on experiments and activities, such as "experiments on water purification or the growth of microorganisms" (Respondent 3). This aligns with best practices in science education, which emphasize the importance of experiential learning to deepen students' understanding of abstract concepts (Ransley et al., 2020). Hands-on learning engages students and allows them to apply theoretical knowledge to real-world situations, reinforcing the importance of hygiene and sanitation (Alibayan et al., 2021). Another significant theme was Performance-based Tasks and Applications. Respondents proposed incorporating real-life applications and assessment activities that could help students internalize and apply WinS concepts. One respondent stated, "By having performance tasks for learners that integrate WinS concepts, they can apply it to real-life scenarios" (Respondent 4). This suggestion reflects research by Cahill et al. (2019), which emphasizes that performance-based tasks are crucial in promoting deep learning and behavior change. Such tasks would encourage students to practice hygiene and sanitation inside and outside the school, thus bridging the gap between knowledge and action (Magsino et al., 2021).

Finally, respondents emphasized the Health-Academic Linkage, arguing that improved hygiene would benefit students' health and academic performance. One teacher noted, "If the students are healthy, they can attend classes regularly, positively affecting their academic performance" (Respondent 1). Another echoed this, saying, "Kung poor ang hygiene, sickly ang bata so affected iyahang academic ... " (Respondent 5). This point is supported by research from the World Bank (2019), which found that good health, supported by proper sanitation and hygiene practices, is directly linked to better student attendance and overall academic achievement. Moreover, Cahill et al. (2019) highlight the importance of holistic education that integrates health and wellness into academic curricula, as students who maintain better hygiene are more likely to stay healthy and perform better academically.

A striking finding from this table is the lack of formal training experienced by most teachers regarding the WinS Program. The absence of specialized training opportunities is a significant barrier to effective program implementation. According to Gonzales (2021), teacher preparedness is crucial for the success of health education programs, but many teachers report feeling underprepared to address hygiene and sanitation issues in the classroom. Respondents noted that although some teachers received general health education training, this was often not directly relevant to WinS, which requires more specialized instruction on issues like clean water management and disease prevention (Hannigan *et al.*, 2019).

Moreover, some teachers mentioned receiving video-based training materials, which were insufficient for equipping educators with the necessary skills to effectively teach the WinS concepts (Delos Reyes & Tabuga, 2020). This suggests that interactive and in-depth training programs, including workshops and peer mentoring, may be more effective in addressing the knowledge gaps identified in this study (Magsino et al., 2021). The responses indicated a strong consensus among teachers that structured lesson plans would significantly improve the integration of WinS into classroom instruction. Teachers expressed that having pre-prepared lesson plans would not only ease the delivery of WinS content but also ensure that it is systematically covered across different grade levels. This finding is consistent with Vygotsky's (1978) theory of scaffolding, where structured support in lesson plans can help students build foundational knowledge that they can later apply independently. Additionally, teachers highlighted that structured plans would allow them to incorporate real-life applications of the concepts, helping students understand the practical relevance of hygiene and sanitation (Smith & Rabin, 2020). The creation of these lesson plans, however, requires active collaboration between WinS coordinators, curriculum developers, and science educators to ensure that WinS is appropriately integrated into the curriculum.

The respondents' suggestions for topics and activities contributing to meaningful learning and applying the curriculum's WinS (Water, Sanitation, and Hygiene) concepts. The suggestions fall under several key themes: Inclusion of Practical and Skill-Based Activities, Focus on Hygiene and Sanitation Education, Integration through Structured Lesson Plans, and Promotion of Accountability and Discipline. These suggestions are grounded in the belief that Win's education should be theoretical, practical, engaging, and integrated across various aspects of the curriculum. A predominant theme in the responses was the Inclusion of Practical and Skill-Based Activities. Respondents proposed incorporating hands-on activities such as simple maintenance, recycling, hygiene kit preparation, and conducting experiments. One respondent suggested, "Practical activities should include doing simple maintenance, and waste management like recycling and reusing" (Respondent 1), while another recommended, "Encourage students to prepare hygiene kits... and discuss the importance of daily personal hygiene" (Respondent 2). These suggestions reflect the growing emphasis on experiential learning in education. Research by Magsino et al. (2021) supports this, highlighting that practical, skill-based activities engage students and provide them with real-life applications of theoretical concepts. Furthermore, promoting skills such as recycling and hygiene kit preparation aligns with the broader goals of the WinS program, which seeks to instill sustainable and responsible practices among students (Cahill et al., 2019).

The theme of Focus on Hygiene and Sanitation Education was also a key area of interest. Respondents emphasized the importance of teaching foundational hygiene practices, such as proper handwashing techniques, personal hygiene, and sanitation practices. One respondent noted, "Teach proper handwashing techniques using soap and water..." (Respondent 2), while another highlighted the need for more comprehensive hygiene education, stating, "Hygiene and sanitation education, for me, is the most important topics to be included ... " (Respondent 4). This emphasis on hygiene is consistent with the broader goals of the WinS program, which aims to improve sanitation and hygiene practices in schools to reduce health risks and promote well-being (Ransley et al., 2020). Education on hygiene and sanitation has been shown to reduce the incidence of waterborne diseases, contributing to improved student health and attendance (Gonzales, 2021). The respondents' suggestions align with the findings of global studies, which argue that hygiene education should be prioritized in school curricula, especially in regions where sanitation and hygiene are significant public health challenges (Alibayan et al., 2021).

Additionally, there was a strong call for Integration through Structured Lesson Plans. Several respondents suggested that integrating WinS topics into structured lesson plans would improve the delivery and consistency of WinS education. One respondent mentioned, "With the developed lesson plan, we can apply this WinS integration more effectively especially in the Catch-up Fridays" (Respondent 1). This ties into the recommendation that WinS should be integrated across different components of the science curriculum. Cahill et al. (2019) emphasize that a well-structured curriculum with dedicated lesson plans is crucial for ensuring that WinS concepts are taught systematically and comprehensively. Structured lesson plans ensure that WinS topics are not relegated to sporadic discussions but are integrated to reinforce key learning objectives across various subjects (Ransley *et al.*, 2020).

The Promotion of Accountability and Discipline theme highlights the importance of instilling responsibility and selfdiscipline in students regarding their health and hygiene practices. Respondents suggested incorporating lessons on self-discipline and accountability, stating, "Raising awareness, developing self-discipline, and the importance of accountability are some key topics..." (Respondent 1). Such initiatives can be reinforced through activities requiring students to take ownership of their hygiene practices and hold each other accountable. This approach resonates with findings from Magsino et al. (2021), who argue that fostering personal responsibility in students is crucial for the long-term success of health education programs. Promoting self-discipline and accountability encourages healthier behavior and cultivates leadership skills as students learn to act as role models for their peers and families (Gonzales, 2021). The perceived benefits of strengthening the integration of the WASH in Schools (WinS) program into science education, as identified by teacher participants. Three major themes emerged from the data: Improved Student Health and Hygiene Practices, Behavioral and Attitudinal Development, and Academic and Engagement Benefits. The most prominent benefit identified was the Improved Student Health and Hygiene Practices. Respondents consistently emphasized that integrating WinS into science lessons would deepen students' understanding of hygiene, sanitation, and disease prevention, leading to healthier habits

and reducing the incidence of illness. As one teacher noted, improved integration can "enhance student understanding of WinS principles leading to better hygiene practices, reduce illness, and [create a] healthier school environment" (Respondent 3). Another mentioned how personal and environmental hygiene would extend beyond school settings into personal lifestyles (Respondent 5). These findings align with global evidence showing that WinS-related education significantly improves students' hygiene behavior and health outcomes (Freeman *et al.*, 2014; Jasper *et al.*, 2012; UNESCO, 2016). Embedding these principles into science gives learners the scientific rationale behind personal hygiene, thus fostering more meaningful and lasting behavior change (Cahill *et al.*, 2019; UNICEF, 2020).

The second central theme, Behavioral and Attitudinal Development, reflects the transformative potential of WinS integration in shaping students' values, discipline, and accountability. Teachers shared that explicit instruction on hygiene and sanitation could instill self-awareness, positive health attitudes, and responsibility for one's well-being and surroundings. Respondent 1 highlighted that integrating hygiene education fosters self-discipline and shifts student mindsets, promoting long-term behavioral change. Others expressed that students may take pride in their appearance and cleanliness, affecting how they feel and behave socially and psychologically (Respondent 5). Moreover, students were seen as potential "hygiene ambassadors" who could extend their learning to peers and family members, echoing that children are effective change agents in their communities (UNICEF, 2012; Greene et al., 2012). This social diffusion of behavior aligns with Bandura's (1977) social learning theory, where behavior modeled in school settings can influence broader community practices.

Lastly, Academic and Engagement Benefits, captures how WinS integration can enhance science learning by making it more practical and engaging. Teachers believed connecting WinS topics to real-life experiences, particularly through hands-on activities, could deepen conceptual understanding and foster curiosity. Respondent 3 stated that "hands-on activities will make learning more engaging and impactful," while Respondent 4 emphasized the importance of real-life application of concepts. These insights support the principles of experiential learning (Kolb, 1984), where active participation enhances student comprehension and retention. Furthermore, integrating WinS into science aligns with DepEd's policy on contextualized instruction, which encourages using locally relevant content to make learning more meaningful (DepEd, 2016). Such integrative approaches improve academic engagement and enable students to apply scientific knowledge to everyday health practices, contributing to the broader goal of education for sustainable development (UNESCO, 2020).

Lastly there were some teacher-recommended strategies to strengthen collaboration between the WinS coordinator and science teachers. Four major themes were identified: Structured Collaboration and Communication, Capacity Building and Information Dissemination, Development and Provision of Instructional Materials, and Whole-School Participation and Stakeholder Engagement. These themes underscore the systemic and collaborative nature required to effectively institutionalize the WinS program within the school curriculum, particularly in science education.

The first theme, Structured Collaboration and Communication, emphasizes the importance of formal and consistent coordination mechanisms between WinS coordinators and science teachers. Teachers advocated for regular meetings to co-develop strategies, action plans, and monitoring tools for WinS implementation. Respondents highlighted that such meetings could provide a platform for joint planning and evaluation of program outcomes (Respondents 1 and 3). Furthermore, they suggested that WinS discussions be formally embedded into annual orientations and in-service trainings (INSET), ensuring the program is not sidelined at the start of the academic year. This aligns with recommendations from the Department of Education (DepEd, 2020) and international literature, which stress that effective school-based WinS programs require strong interdepartmental collaboration and structured planning (UNICEF, 2012; WHO, 2018). When WinS becomes part of regular school dialogue and planning, its implementation becomes more systematic, monitored, and sustainable (GIZ, 2019).

The second theme, Capacity Building, and Information Dissemination reflects the need to equip teachers-particularly those handling science with updated knowledge and skills related to WinS. Respondents emphasized that after attending trainings, WinS coordinators should "re-echo" or cascade their learning to other teachers (Respondent 5). Teachers also pointed out that lack of awareness among colleagues remains a significant barrier to integration: "If they do not [know], they cannot integrate this program" (Respondent 1). This gap highlights a breakdown in internal communication, which systematic information dissemination practices could address. Prior research has shown that empowering teachers through continuous professional development significantly improves their participation in school-based WinS initiatives (UNESCO, 2020; Bartram & Cairneross, 2010). Moreover, successful integration into the curriculum depends heavily on teacher awareness and engagement (Cahill et al., 2019; Freeman et al., 2014).

The third theme, Development, and Provision of Instructional Materials, highlights the need for standardized and supportive teaching resources to help science educators meaningfully integrate WinS into their lessons. Respondents called for the Department of Education to develop structured lesson plans and integration guidelines tailored to science subjects (Respondents 1 and 3). The absence of explicit instructional materials and frameworks has long been cited as a key barrier to cross-cutting educational initiatives like WinS (UNESCO, 2016; DepEd, 2019). Teachers need contextualized, ready-touse content that aligns with learning competencies while reinforcing hygiene, sanitation, and health behaviors. This is consistent with the literature on curriculum alignment, which emphasizes that providing accessible materials increases teacher confidence and ensures fidelity in implementation (Rosenqvist, 2020).

Finally, the Whole-School Participation and Stakeholder Engagement theme emphasizes the importance of fostering a culture of collective ownership and consistent engagement with WinS beyond just the science department. Teachers recommended holding regular school-wide activities involving students, teachers, and community stakeholders to promote visibility and collective accountability (Respondent 2). Additionally, best practice sharing through LAC (Learning Action Cell) sessions was suggested to build collegial learning and capacity (Respondent 4). However, Respondent 1 acknowledged that the program had been deprioritized due to disruptions brought by the COVID-19 pandemic and Typhoon Odette, leading to fragmented implementation. These observations mirror findings from recent reports indicating that natural disasters and public health emergencies often displace education-based health initiatives (UNICEF, 2022; WHO, 2021). To ensure program resilience, a whole-school approach must be adopted one that integrates health promotion into daily routines, school policies, and the broader educational culture (WHO, 2018; Save the Children, 2020).

DISCUSSION

The research sought to evaluate the program implementation of the Water, Sanitation, and Hygiene in Schools (WinS) in the Mabini District. The results are presented and discussed by the specific research objectives, based on thematic analysis of qualitative data. Two general themes arose across all sectors: Collaborative Support and Leadership and Institutionalization through Policy and Participation, which are both at the foundation of the program's effectiveness and sustainability. The school's profile of the implementation of the WinS Program as shown in the checklist was the main instrument used to measure school compliance in major areas of sanitation, hygiene, water supply, and health education. The findings showed mixed star ratings for schools, reflecting an inconsistent application of the program. Interestingly, some schools performed better in deworming and sanitation but consistently fell behind in hygiene education, menstrual hygiene management, and water supply. This mirrors the Collaborative Support and Leadership theme those schools that fared better tended to have solid administrative leadership and outside support structures, like PTA participation or barangay ties. For instance, School E, which fared consistently better, had effective school-based planning and prioritization of WinS in its MOOE utilization. But the inconsistency among other schools indicate the necessity for district coordination and shared practices to ensure equitable progress.

The implementation of the WinS program is maintained through routine monitoring, support by school policies, and participation. Schools reported whole-school regular monitoring of hygiene facilities provision of clean water, working toilets, and handwashing facilities. Incorporation into school policies, including health and safety plans, assisted in institutionalizing WinS practices. This reinforces the theme of Institutionalization through Policy and Participation, where procedures and policies assist in locating hygiene practices within the regular school environment. Yet a few implementation gaps continue to hinder. These are seasonal water shortages, the absence of menstrual hygiene materials, inadequate waste segregation, and low levels of hygiene awareness among junior and senior students. These issues suggest that whereas policies are in place, their implementation is largely dependent on the quality of leadership and stakeholder involvement yet another reinforcement of the theme of Collaborative Support and Leadership. But in terms of the integration of the WinS program into the science instruction, although some of the teachers indicated attempts to incorporate hygiene and sanitation content into Science classes, the incorporation was mostly labeled as incoherent, minimal, or none. Most respondents highlighted the requirement for systematic, competency-based lesson plans correlating WinS with Science learning outcomes. This reflects

a significant vulnerability in the system: although WinS has administrative backing, integration into the curriculum has not been made an institution. Lack of teaching materials and training reflects missed chances to sustain hygiene behavior through formal schooling. Teachers further noted a lack of cooperation between themselves and WinS focal persons as an impediment to effective integration reflecting a need for improved leadership coordination and more defined instructional planning.

The implementation of the WinS program in the Mabini District also encountered several challenges both in operation delivery and incorporation into classroom teaching. Among the most important implementation problems were dry-season water shortages, poor waste segregation activities, inadequate student discipline for school cleanliness, and improper support and facilities for menstruation hygiene. On the pedagogical side, incorporating WinS ideas into Science lessons was still minimal owing to the lack of formal lesson plans or curriculum guidelines. Teachers indicated that they had inadequate training and support on how to incorporate hygiene education into their teaching, again attributed to a lack of coordination between Science teachers and the WinS coordinators. These are all directly related to the study's overall themes. Addressing resource gaps such as water supply and hygiene kits requires strong Collaborative Support and Leadership, including active partnerships with local stakeholders and LGUs. Likewise, Institutionalization through Policy and Participation needs to be reinforced by translating school policies into actionable classroom strategies, supported by teacher capacity-building and coordinated interdepartmental efforts. To address these challenges, the study proposes several key interventions. First, the creation of Science-based, structured lesson plans that explicitly integrate WinS topics by the K to 12 competencies is necessary.

This must be followed by periodic professional development and training activities for teachers, which will provide them with the necessary knowledge and skills to deliver effective hygiene education. Enhancing coordination between WinS coordinators and Science teachers will ensure instructional alignment and collective responsibility. Additionally, the strengthening of WinS integration through school orientations, extracurricular activities, and institutional policies can create a culture of hygiene and sanitation. Finally, schools must actively engage with PTAs, LGUs, and community health partners to solve logistical issues like access to water, waste management systems, and menstrual hygiene facilities. Collectively, these interventions aim to overcome structural and instructional barriers and facilitate the long-term sustainability of the WinS program via holistic leadership and curriculum integration.

These interventions aim to address both structural and instructional challenges, enhancing the long-term sustainability of the WinS program through systemic leadership and embedded curriculum strategies. In summary, the effective implementation and sustainability of the WinS program in the Mabini District are influenced by the synergy of collaborative leadership and the institutionalization of hygiene practices through school policies and classroom integration. Addressing current challenges requires an intentional, multi-stakeholder approach that bridges infrastructure, curriculum, and community engagement.

Conclusion

This study revealed that while the Water, Sanitation, and Hygiene in Schools (WinS) program has been introduced in several schools within the Mabini District, its implementation remains uneven due to both structural and instructional challenges. Key themes such as collaborative support leadership and institutionalization through policy and participation emerged as vital for sustaining and enhancing the program's effectiveness. Despite observable efforts in policy execution, school community engagement, and monitoring activities, persistent issues like limited water access, inadequate menstrual hygiene management, poor waste disposal practices, and minimal integration of hygiene concepts into classroom instruction hinder the full impact of the program. The absence of formalized lesson plans, weak teacher capacity-building efforts, and fragmented coordination between academic and WinS initiatives further delay the seamless integration of hygiene education into Science curricula. Importantly, this study emphasizes the need for an integrated and comprehensive school-wide approach that aligns infrastructure, policy, pedagogy, and community participation. A fully institutionalized WinS program goes beyond health compliance it enhances student well-being, learning conditions, school attendance, and public awareness, and it supports long-term behavioral transformation. Furthermore, by fostering sustainable hygiene habits and responsible waste management, the program contributes meaningfully to global climate action and the achievement of Sustainable Development Goals (SDGs) related to clean water, sanitation, quality education, and climate resilience.

Recommendations

To ensure the effective implementation and long-term sustainability of the WinS program, it is essential to integrate hygiene education more deeply into the school curriculum with a clear linkage to environmental sustainability and climate change. This begins with the development and execution of Science lesson plans that explicitly incorporate WinS concepts in alignment with the K to 12 curriculum, emphasizing how hygiene practices contribute to environmental health and global climate action. Teachers should be regularly engaged in professional development, including workshops and in-service training focused on hygiene education, climate-responsive instructional strategies, and context-based teaching approaches. Equally important is the promotion of structured collaboration between WinS coordinators and Science teachers. This collaboration should focus on aligning goals, codeveloping instructional materials, tracking program implementation, and ensuring consistent messaging across both academic and programmatic activities. Institutional support must be strengthened by embedding WinS principles into school policies, co-curricular programs, and student-led initiatives to cultivate a school culture where hygiene, environmental responsibility, and climate awareness are normalized.

Furthermore, strong partnerships with Parent-Teacher Associations (PTAs), barangays, and local government units (LGUs) must be established to address recurring resource constraints. These collaborations can support the continuous provision of hygiene and menstrual health kits, as well as ensure year-round access to clean water—resources that are critical to both public health and environmental conservation. Finally, the establishment of a robust monitoring and evaluation system is recommended, alongside the promotion of ongoing school-based research. These efforts will help assess the long-term impact of WinS on student health, academic outcomes, and community involvement, while also tracking progress on waste reduction, resource use, and environmentally sustainable behaviors. Through these strategic, collaborative, and climate-responsive actions, the WinS program can evolve into a lasting, institutionalized framework that not only improves educational outcomes but also contributes meaningfully to climate resilience and the broader goals of sustainable development.

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