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Participation in YES-O Programs and its Impact on Science Learning: Basis for EcoQuest Mission Passport

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ABSTRACT

This study assessed the pupils' participation in the implementation of the Youth for Environment in Schools Organization (YES-O) programs and their effects on their learning progress as a basis for the development of the EcoQuest Mission Passport. It used the descriptive-survey research method in which data were collected through an adopted questionnaire from 316 grades four to six pupils in 20 schools. Results showed strong pupil participation in clean-up drives, tree planting, and water-saving practices. In contrast, seedbank, biodiversity, and waste management initiatives were less participated in due to resource constraints. Nonetheless, the programs had a positive influence on science learning by enhancing pupils' understanding of environmental concepts, instilling pro-environmental values, and encouraging sustainable practices. To address gaps, the study recommends the EcoQuest: YES-O Mission Passport, a science activity journal designed for active documentation, performance-based assessment, and evaluation. This initiative supports Republic Act No. 9512 on environmental awareness and strengthens the integration of YES-O with the science curriculum to foster scientifically literate and environmentally responsible learners.

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KEYWORDS:

Curriculum integration, Environmental education, Science learning, Sustainability, YES-O programs

I. INTRODUCTION

Environmental education (EE) is a lifelong learning process that develops knowledge, skills, values, and action competencies for informed, responsible environmental decision-making. In basic education, EE helps pupils connect science concepts to everyday life through inquiry and hands-on experiences (e.g., proper waste management, water and energy conservation, campus greening). Early exposure supports scientific literacy and 21st-century skills, including critical thinking, collaboration, and communication, while nurturing stewardship and care for shared resources.

In addition, environmental education in basic education is a critical avenue for developing learners' environmental literacy, awareness, and responsibility toward sustainable living. It supports the Sustainable Development Goals, particularly SDG 4 (Quality Education), which emphasizes education for sustainable development under Target 4.7, and SDG 13 (Climate Action), which highlights climate literacy under Target 13.3 (United Nations, n.d.).

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In the Philippine context, the Department of Education institutionalized EE through policies such as DepEd Order No. 72, s. 2003, which established the Youth for Environment in Schools Organization (YES-O) as the co-curricular arm for environmental programs, and DepEd Order No. 52, s. 2011, which strengthened environmental education in both public and private schools (DepEd, 2003; DepEd, 2011). These policies guide the integration of environmental initiatives into the curriculum, encourage pupil participation in environmental activities, and ensure that schools serve as active agents in promoting sustainable practices and climate resilience.

Scholarly literature highlights the importance of environmental education in fostering pro-environmental values and lifelong sustainable practices. Internationally, UNESCO (2024) stresses the role of curriculum greening in building learners' capacity to address climate change and environmental degradation. Reviews further emphasize that EE in primary education not only improves environmental knowledge but also cultivates skills in problem-solving and critical thinking (Powell et al., 2023). Locally, Corpuz et al. (2022) argue that the greening of the Philippine curriculum and the integration of EE in teacher education programs are necessary to achieve holistic development, while DepEd's continued emphasis on climate change education reinforces

the central role of EE in preparing Filipino learners for future sustainability challenges.

Empirical studies validate the positive outcomes of environmental education among schoolchildren. Ardoin and Bowers (2020) found that early EE programs significantly enhance children's environmental literacy, curiosity, and social engagement, while Wu et al. (2023) demonstrated that EE interventions lead to measurable improvements in green consumption and pollution control behaviors. Similarly, Van de Wetering et al. (2022) observed that experiential EE activities improve nature connectedness and pro-environmental behavior. Locally, Yesilyurt (2020) documented gains in environmental awareness among primary students exposed to structured EE interventions, while Philippine-based evaluations of YES-O programs highlight their effectiveness in promoting awareness and school-community environmental projects despite challenges in resources and monitoring (Corpuz et al., 2022; DepEd, 2011). Together, these studies underscore that EE whether global or local, provides both cognitive and behavioral benefits and is crucial in cultivating sustainable practices in the school setting.

The Youth for Environment in Schools Organization (YES-O) is DepEd's officially recognized co-curricular environmental club. Established through DepEd Order No. 72, s. 2003 and operationalized via DepEd Order No. 93, s. 2011, YES-O consolidates campus ecology clubs and provides a structured venue for environmental action. Its goals include raising learner awareness of environmental conditions and issues; organizing actionable school/community programs; building partnerships with agencies and NGOs; encouraging community participation; and developing appropriate values, attitudes, and practical skills. The orders prescribe mandated programs, projects, and activities (PPAs) and standard tools (e.g., CAPA, AAR, and monitoring forms) to guide school-level planning, implementation, and reporting. The program also advances Republic Act No. 9512 (Environmental Awareness and Education Act of 2008), which mandates integration of EE across grade levels.

The Youth for Environment in Schools Organization (YES-O) serves as a vital platform for integrating environmental education into the Philippine basic education system. It was established through DepEd Order No. 72, s. 2003, and further strengthened by DepEd Order No. 52, s. 2011, which mandates environmental awareness, energy conservation, solid waste management, and climate change adaptation as part of school programs (DepEd, 2003; DepEd, 2011). Internationally, UNESCO (2024) emphasizes that student-centered environmental clubs and organizations enhance environmental literacy and leadership skills, aligning with Sustainable Development Goal (SDG) 4 on quality education and SDG 13 on climate action. Locally, Corpuz et al. (2022) highlight that the greening of the Philippine curriculum and co-curricular organizations like YES-O reinforce pupils' values formation and environmental responsibility, showing that school-based environmental organizations are key in cultivating sustainable practices and environmental citizenship among learners.

Studies demonstrate that student-led environmental programs effectively enhance pro-environmental behaviors and participation. For example, Van de Wetering et al. (2022) found that environmental clubs and extracurricular activities abroad improved pupils' sense of nature connectedness and responsibility, while Ardoin and Bowers (2020) confirmed that early engagement in environmental projects fosters lasting environmental literacy and positive behaviors. In the Philippine context, Yesilyurt (2020) reported that structured environmental education activities significantly raised primary pupils' environmental awareness, and local assessments of YES-O programs revealed that active participation in tree planting, clean-up drives, and waste management not only improved pupils' environmental knowledge but also encouraged community involvement despite challenges in resources and program monitoring (Corpuz et al., 2022; DepEd, 2011). Together, these studies affirm that YES-O and similar organizations play an essential role in shaping both the environmental learning and participatory actions of pupils.

International and local research on school-based EE indicates that well-designed, experiential activities are associated with gains in environmental knowledge, positive attitudes, and responsible behaviors among learners. Within the Philippine setting, documentation of YES-O practices highlights how regular, curriculum-linked activities—clean-up drives, segregation and recycling, tree-growing, and biodiversity initiatives—help pupils internalize environmental values and participate in school/community stewardship. By providing recurring opportunities for participation, reflection, and leadership, YES-O functions as a practical bridge between classroom learning and organized environmental action.

Scholarly literature also underscores the significance of student-led environmental organizations in nurturing pro-environmental values. Globally, UNESCO (2024) asserts that sustainability-focused school programs foster active citizenship, environmental literacy, and climate-responsive behavior among learners. Similarly, Ardoin and Bowers (2020) note that engagement in structured environmental activities improves environmental identity and responsibility in children. Corpuz et al. (2022) emphasize that YES-O and similar initiatives in the Philippines reinforce the greening of the curriculum, ensuring that learners not only gain knowledge but also apply eco-friendly practices. This body of literature highlights that environmental education integrated through co-curricular organizations creates holistic learning experiences that promote both academic and moral growth.

Empirical studies further affirm the impact of YES-O on shaping learners' attitudes and behaviors toward the

environment. For instance, Van de Wetering et al. (2022) found that environmental clubs abroad significantly enhance nature connectedness and student participation in conservation activities. Yesilyurt (2020) also reported that structured environmental education programs increase pupils' awareness and sense of accountability in ecological issues, while local assessments of YES-O have shown positive outcomes in learners' involvement in community clean-up drives, tree planting, and biodiversity conservation (Corpuz et al., 2022). These studies demonstrate that YES-O is not merely an organizational requirement but a transformative avenue for instilling environmental values and responsibilities among learners, preparing them to be environmentally literate citizens who can actively contribute to sustainable development.

The implementation of the YES-O in public elementary schools is crucial for cultivating early environmental literacy, responsibility, and sustainable practices among learners. In the context of Gubat South District, Sorsogon, a locality frequently exposed to typhoons, flooding, and volcanic hazards, the role of YES-O becomes even more significant in equipping pupils with risk awareness and eco-friendly habits that support community resilience. The K to 12 Science Curriculum and Most Essential Learning Competencies (MELCs) highlight inquiry-based and real-world learning, making YES-O programs an authentic avenue for reinforcing science concepts while instilling pro-environmental values. Program implementation involves collaboration among school administrators, teachers, YES-O advisers, pupils, and local stakeholders, guided by DepEd's prescribed forms, documentation, and annual targets.

Scholarly literature underscores both the potential and challenges of school-based environmental organizations like YES-O. Alam and Zakaria (2021) emphasized that sustainability programs in developing countries are often hindered by resource limitations, insufficient teacher training, and lack of institutional support. Guevarra (2017) observed that while environmental clubs in schools generate initial enthusiasm, maintaining long-term pupil participation remains a challenge without reinforcement or recognition. Cadiz and Cortez (2025) reported that YES-O advisers in Philippine schools often face workload burdens, making environmental activities difficult to sustain alongside academic and administrative responsibilities. These insights highlight the importance of institutional support, creative programming, and adequate resources to ensure the long-term effectiveness of YES-O programs in shaping learners' environmental responsibility.

Empirical studies further confirm the challenges and impacts of YES-O implementation. Alam and Zakaria's (2021) study in Malaysian schools revealed that financial and logistical constraints often hinder the continuity of environmental programs. Similarly, Guevarra's (2017) research in Philippine high schools noted that inconsistent leadership transitions weaken students' sustained engagement in YES-O activities. In a more recent local assessment, Cadiz and Cortez (2025) documented that while pupils actively participate in clean-up drives, tree planting, and waste management initiatives, the lack of time, materials, and adviser support often limits the depth and continuity of these efforts. These studies demonstrate that although YES-O holds strong potential to nurture environmental awareness, its success depends on addressing systemic and contextual challenges.

Given this context, the present study is significant as it seeks to assess the implementation of YES-O programs in public elementary schools of Gubat South District, Sorsogon, and evaluate their effects on pupils' participation and learning progress. The findings will provide valuable insights for school administrators, YES-O advisers, and teachers in identifying gaps, resource needs, and opportunities for integration with the K-12 science curriculum. At the district and division levels, the results may serve as a baseline for technical assistance, training, and equitable resource distribution. Moreover, the study contributes to the larger discourse on environmental education in hazard-prone communities, highlighting the role of YES-O in shaping environmentally literate and responsible young citizens who can actively participate in sustainable development.

While previous studies highlight the effectiveness of environmental education and YES-O programs in promoting awareness and pro-environmental behaviors, most existing research is focused either on secondary schools or broad national perspectives, leaving a limited understanding of how such programs are implemented and experienced at the elementary level. Furthermore, although studies document resource and engagement challenges, there is little empirical evidence that systematically examines the direct effects of pupils' participation in YES-O on their academic progress, pro-environmental behavior, and environmental actions within hazard-prone communities. This gap underscores the need for localized, elementary-level research that not only evaluates participation but also links environmental involvement to pupils' holistic learning outcomes and community resilience.

This study is limited to assessing the level of participation of Grades 4, 5, and 6 pupils in the implementation of the YES-O programs in selected public elementary schools of Gubat South District, Division of Sorsogon Province, during the school year 2025–2026. It specifically focuses on eight program areas of YES-O: Seed Bank and Nursery, Tree Planting, Water Conservation, Biodiversity Conservation, Power/Energy Programs, Clean-up Drives, Solid Waste Management, and School-Initiated Activities. The study further delimits its scope by examining the effects of pupils' participation on their learning progress along three dimensions: Science performance, pro-environmental behavior, and environmental actions. Respondents are confined to pupils at the upper elementary level (Grades 4 to 6), as they are presumed to have the

maturity, awareness, and school exposure to meaningfully engage in environmental activities. Lower grade levels are excluded to maintain consistency in cognitive and behavioral capacity. The findings of this study shall serve as the basis for the development of the EcoQuest YES-O Mission Passport as an intervention output to enhance the implementation of YES-O programs and strengthen pupils' environmental awareness and learning outcomes. Variables outside the scope of YES-O activities and learning progress dimensions identified are not covered by the study.

This study aims to assess the pupils' level of participation and its effect on learning progress in the implementation of the YES-O programs in public elementary schools of Gubat South District, Division of Sorsogon Province, for the school year 2025-2026. Specifically, it aimed to (1) evaluate the pupils' level of participation in the implementation of the YES-O programs along (a) Seed Bank and Nursery; (b) Tree Planting; (c) Water Conservation; (d) Biodiversity Conservation; (e) Power/Energy Programs; (f) Clean-up Drives; (g) Solid Waste Management; and (h) School-Initiated Activities; (2) determine the effects of pupils' participation in YES-O on their learning progress along (a) science performance, (b) pro-environmental behavior, and (c) environmental actions; and (3) develop the EcoQuest YES-O Mission Passport based on the findings of the study to strengthen pupils' participation, environmental learning, and sustained involvement in YES-O programs.

II. METHODOLOGY

Research Design

This study adopted a descriptive survey design, which is appropriate because the aim is to describe the current status of YES-O participation among elementary pupils and relate that participation to their learning and environmental outcomes. A descriptive survey collects information from a defined group at one point in time and summarizes patterns using straightforward statistics, which directly addresses the objectives of this study (Creswell & Creswell, 2018). This design allows the researcher to quantify levels of program implementation and identify the pupils' perceived benefits in terms of science learning, pro-environmental behavior, and environmental actions (Babbie, 2021). It is also practical and efficient in gathering data from a large number of respondents, making it suitable for school-based research where resources and time are limited (Fraenkel et al., 2019). Overall, the descriptive survey design provides a clear, systematic, and reliable approach to assessing the implementation and impact of YES-O programs in public elementary schools.

Sources of Data

The primary sources of data for this study were the 316 grades four to six pupils enrolled in selected public elementary schools in the Gubat South District, Sorsogon, during School Year 2025–2026. To capture a balanced picture of school life, the sample purposefully included both YES-O members and non-members, allowing comparisons between pupils who are formally involved in the organization and those who participate only through class or school activities. The total population per grade level and per school was identified in coordination with school heads and YES-O coordinators, and the target sample size was computed using Slovin's formula at a 5% margin of error to ensure an adequate representation of pupil views across the district.

To keep the selection transparent and appropriate for the elementary setting, the following criteria were observed in the background: pupils had to be officially enrolled in SY 2025–2026, present on the survey day, and able to provide assent, with parent/guardian consent secured through the school. Researchers included classes across grades four, five, and six within each school and to invite both YES-O officers, members, and non-members so that the resulting responses reflects everyday experiences, not only club-based perspectives.

Research Ethics

In this study on assessing the implementation of YES-O programs in public elementary schools, research ethics ensured the integrity and credibility of the process. The survey instrument respected respondents' rights to privacy and confidentiality in line with the Philippine National Ethical Guidelines for Health and Health-Related Research (PHREB, 2017). Formal approval was obtained from the Schools Division Office, school principals, and YES-O coordinators, while informed consent was secured from parents or guardians of the pupils. Confidentiality and anonymity were strictly maintained, and participation was voluntary to prevent bias or undue pressure. All data collected were used solely for academic purposes, with no personal or identifying information disclosed in any report or publication (Creswell & Creswell, 2018; Israel & Hay, 2006; Resnik, 2020).

Research Instrument

The primary tool for data collection was a structured survey questionnaire designed to measure the level of implementation of YES-O programs and their perceived impact on pupils' science learning progress. The instrument consisted of two parts: Part I focused on program areas such as seedbank and nursery establishment, tree planting, water conservation, biodiversity conservation, energy conservation, clean-up drives, solid waste management, and school-initiated environmental activities, while Part II assessed pupils' science performance, pro-environmental behavior, and environmental actions. The questionnaire was adapted and modified from a validated tool developed by Saldana and Domanog (2024) and revised to suit the comprehension level of elementary pupils. It underwent expert validation in elementary science and environmental education to ensure clarity and relevance. A pilot test was also conducted, and reliability was established using Cronbach's alpha of 0.95 to confirm internal consistency of the items.

The research instrument underwent a thorough validation and pilot testing process to ensure its accuracy, clarity, and appropriateness for elementary pupils. Five expert validators, composed of Science Master Teachers and YES-O advisers, evaluated the questionnaire and provided constructive feedback, particularly recommending simplification of terms to suit the comprehension level of Grades 4 to 6 pupils. Based on their suggestions, revisions were made to the indicators, instructions, and layout, resulting in high validation ratings, with the highest scores in relevance to research objectives (4.8) and content coverage (4.8). A pilot test was then conducted with 20 pupils who were not part of the final study to assess clarity, reliability, and overall usability of the revised instrument. The results confirmed that the tool was valid, reliable, and capable of capturing both quantitative and perceptual data needed for assessing the implementation of YES-O programs and their impact on science learning.

Data Collection

The data collection for this study was carried out systematically in close coordination with the Schools Division Office of Sorsogon Province, the Public Schools District Supervisor (PSDS), and the principals of the participating public elementary schools in the Gubat South District. Prior to administration, approval was formally secured from the appropriate authorities to ensure adherence to institutional requirements and ethical standards. The adopted survey questionnaire was finalized based on the research objectives and pilot-tested to ensure clarity and suitability for the respondents. Clear communication with the PSDS, school heads, and YES-O coordinators was established to schedule the conduct of the survey in a manner that would not disrupt regular classes. These preparatory steps ensured that the protocol for data gathering was properly observed and aligned with both academic and ethical guidelines.

The administration of the survey was facilitated personally by one of the researchers with the support of school heads and YES-O coordinators on July 15 – 25, 2025. A brief orientation was conducted with teachers and pupil-respondents to explain the objectives of the study and provide instructions on how to properly accomplish the questionnaire. Since the participants were Grades 4 to 6 pupils, the survey items and instructions were simplified to match their level of comprehension. The respondents were given sufficient time to answer the questionnaire in a quiet and comfortable setting, often during non-disruptive class hours when they had science-related activities as coordinated with school personnel. Assistance was provided when necessary to address clarifications, ensuring that the administration process was both supportive and respectful of the pupils' learning environment.

The retrieval of the completed questionnaires was done efficiently and systematically to ensure accuracy and prevent data loss. Wherever possible, surveys were collected on the same day of administration, while the remaining forms were personally turned over to the researcher by the school heads. This process guaranteed the integrity of responses and allowed for immediate safekeeping and compilation. Remarkably, the study achieved a 100% retrieval rate, reflecting the strong cooperation of the pupils, teachers, and school administrators. All responses were carefully organized by school and encoded in Google Forms to facilitate statistical analysis. Throughout the retrieval and documentation process, confidentiality and ethical considerations were strictly observed to protect the rights and welfare of all pupil participants.

Data Analysis

The collected, organized, and tabulated data were subjected to statistical analysis. Descriptive statistics were employed based on the nature and type of data. The weighted mean was utilized to present the pupils' level of participation in the implementation of the YES-O along with seedbank and nursery establishment, tree planting and caring, water conservation, biodiversity conservation, power supply programs, clean-up drives, ecological solid waste management, and school-initiated environmental activities. Also, the scale below was used in describing the results: 1.00 – 1.49 (Never), 1.50 – 2.49 (Seldom), 2.50 – 3.49 (Sometimes), 3.50 – 4.49 (Often), and 4.50 – 5.00 (Always). Similarly, the weighted mean was used in determining the effects of pupils' participation in YES-O on their learning progress in terms of science performance, pro-environmental behavior, and environmental actions. To interpret the findings, the scale below was employed: 1.00 – 1.49 (Strongly Disagree), 1.50 – 2.49 (Disagree), 2.50 - 3.49 (Neutral), 3.50 – 4.49 (Agree), and 4.50 – 5.0 (Strongly Agree).

III. RESULTS

Pupils' Level of Participation on the Implementation of the YES-O

The pupils' levels of participation in the implementation of the YES-O along Seedbank and Nursery Establishment, Tree Planting and Caring, Water Conservation, Biodiversity Conservation, Power Supply Programs, Clean-Up Drives, Ecological Solid Waste Management, and School-Initiated Environmental Activities are as follows:

Seed Bank and Nursery Establishment. Table 1 presents the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O, along with seed bank and nursery establishment. In this study, it refers to pupils' active involvement in collecting, storing, and raising plant seeds and seedlings as part of the YES-O's environmental initiatives in the school.

Table 1. Pupils' Level of Participation in Seed Bank and Nursery Establishment

Indicators	Weighted Mean	Interpretation
1. establishes a seed bank and nursery within the school premises	2.29	Rarely
2. manages the seed bank and nursery together with students	2.35	Rarely
3. collects seeds and seedlings coming from native, endemic, or indigenous species of trees and uses them for the nursery	2.36	Rarely
4. collects seeds and seedlings of fruit trees and uses them for the nursery	2.50	Sometimes
5. sells their excess seedlings to interested public and private entities as part of its entrepreneurial activities	1.96	Rarely
6. uses the proceeds for the maintenance and operation of the nursery	2.32	Rarely
Overall Weighted Mean	**2.30**	**Rarely**

Planting, Growing, and Caring for Trees. Table 2 contains the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O along with planting, growing, and caring for trees. Operationally, this pertains to pupils' active participation in planting, nurturing, and maintaining trees to support the YES-O's environmental conservation efforts in the school.

Table 2. Pupils' Level of Participation in Planting, Growing, and Caring for Trees.

Indicators	Weighted Mean	Interpretation
1. Plants trees inside the school campus.	3.07	Sometimes
2. Plants trees outside the school campus or other barangays or communities	3.58	Often
3. Grows and cares for trees within the school campus	3.34	Sometimes
4. Grows and cares for trees outside the school campus or in other communities.	3.32	Sometimes
5. Chooses native species of trees to be planted, grown, and cared for	3.57	Often
plants fruit trees	3.14	Sometimes
6. Provides members with planting and growing materials and equipment such as shovels, gloves, sprinklers, and natural fertilizers, among others.	2.91	Sometimes
7. The leader or the school head coordinates with DENR through the CENRO for provisions of seedlings and trees	3.06	Sometimes
8. Conducts training and orientation on the proper ways of planting and growing of trees to students	3.46	Sometimes
Overall Weighted Mean	**3.27**	**Sometimes**

Water Conservation. Table 3 lists the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O programs along with water conservation. As used in this study, this refers to pupils' active participation in practices and activities that promote the efficient use and protection of water resources as part of the YES-O's environmental initiatives in the school.

Table 3. Pupils' Level of Participation in Water Conservation

Indicators	Weighted Mean	Interpretation
1. Constructs or put-up a rainwater harvesting facility in the school	2.58	Sometimes
2. Collects rainwater and uses it in the maintenance of the school seed bank and nurseries	2.80	Sometimes
3. Collects rainwater and uses it in cleaning of school facilities.	2.80	Sometimes
4. Collects and uses rainwater wisely such as in cleaning the comfort rooms	2.91	Sometimes

5.	Encourages students to use refillable water bottles or containers	3.67	Often
6.	Checks the school water system for leaks	3.63	Often
7.	Posts signage for water conservation in conspicuous areas.	2.83	Sometimes
Overall Weighted Mean		**3.03**	**Sometimes**

Biodiversity Conservation. Table 4 presents the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O programs along with biodiversity conservation. In this study, it is biodiversity conservation participation in protecting, preserving, and enhancing the variety of plant and animal life within the school and its surroundings as part of the YES-O's environmental programs.

Table 4. Pupils' Level of Participation in Biodiversity Conservation

Indicators		**Weighted Mean**	**Interpretation**
1.	Identifies green spaces within the school campus	3.40	Sometimes
2.	Plants local wildflowers in the gardens inside the school.	3.20	Sometimes
3.	Encourages every classroom to put up aquariums.	1.95	Rarely
4.	Encourages every classroom to put up terrariums.	2.08	Rarely
5.	Conducts bootcamps to educate learners on wildlife.	2.44	Rarely
Overall Weighted Mean		**2.61**	**Sometimes**

Power Supply Programs. Table 5 contains the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O programs along with power supply programs. Operationally, this pertains to pupils' active participation in initiatives that promote the efficient use, conservation, and management of electrical energy in support of the YES-O's environmental objectives in the school.

Table 5. Pupils' Level of Participation in Power Supply Program

Indicators		**Weighted Mean**	**Interpretation**
1.	Posts signage on energy conservation in observable areas within the school campus.	2.53	Sometimes
2.	Encourages students and teachers to turn off gadgets and equipment when not in use.	3.62	Often
3.	Encourages students to use natural light inside the classrooms to conserve energy.	3.68	Often
4.	Checks the classroom ventilation to minimize the use of cooling appliances such as electric fans.	3.45	Sometimes
5.	Encourages the school community to use energy-efficient appliances.	3.38	Sometimes
6.	Encourages the school to use fluorescent bulbs, which are more energy efficient than incandescent bulbs.	3.33	Sometimes
7.	Encourages students and teachers to charge mobile phones and other gadgets at home for lower electric consumption.	3.37	Sometimes
Overall Weighted Mean		**3.33**	**Sometimes**

Clean-Up Drives. Table 6 presents the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O programs along with clean-up drives. In this study, it refers to pupils' active participation in organized activities aimed at collecting and properly disposing of waste to maintain cleanliness and environmental health in the school and surrounding areas as part of the YES-O's programs.

Table 6. Pupils' Level of Participation in Clean-up Drives

Indicators	Weighted Mean	Interpretation
1. Conducts a clean-up drive within the school.	3.79	Often
2. Conducts clean-up drives outside the school campus.	3.64	Often
3. Encourages the classroom sweepers to clean the classroom regularly.	4.00	Often
4. Partners with other organizations for cleanup drives in nearby communities.	3.37	Sometimes
5. Teaches students about sustainable ecosystem management (e.g., forests, rivers, etc.) so they can contribute more to protecting the environment.	3.56	Often
6. Provides cleaning materials to YES-O members and volunteers.	3.50	Often
7. Makes sure to separate garbage from recyclables after clean-up drives.	3.58	Often
Average	**3.63**	**Often**

Ecological Solid Waste Management. Table 7 provides the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O programs along with ecological solid waste management. Operationally, it means the pupils' active participation in the proper segregation, reduction, recycling, and disposal of waste materials in support of the YES-O's environmental sustainability programs in the school.

Table 7. Pupils' Level of Participation in Ecological Solid Waste Management

Indicators	Weighted Mean	Interpretation
1. There are trash bins with labels.	3.35	Sometimes
2. We separate trash properly.	3.44	Sometimes
3. We keep trash areas clean and dry.	3.52	Often
4. We have a compost pit or waste center.	3.06	Sometimes
5. We join recycling shows or contests.	3.08	Sometimes
6. We work with groups to earn from waste.	3.47	Sometimes
7. We have talks about waste management.	2.72	Sometimes
8. We practice the 5Rs: refuse, reduce, reuse, repurpose, and recycle.	3.09	Sometimes
Overall Weighted Mean	**3.22**	**Sometimes**

School-Initiated Activities. Table 8 provides the weighted mean and interpretation of the pupils' level of participation in the implementation of the YES-O programs along with school-initiated activities. As used in this study, this pertains to the pupils' active participation in environmental programs and projects organized by the school to support the objectives of the YES-O.

Table 8. Pupils' Level of Participation in School-Initiated Activities

Indicators	Weighted Mean	Interpretation
1. Plans its programs and activities.	3.36	Sometimes
2. Monitors and evaluates its programs and activities.	3.26	Sometimes
3. Conducts school-based environmental camps and activities to consolidate environmental efforts and actions.	2.99	Sometimes
4. Conducts outreach programs in nearby communities.	2.67	Sometimes
5. Practices organic farming in school.	2.94	Sometimes
6. Facilitates an income-generating project (IGP).	2.64	Sometimes
7. Observes environmental celebrations like Earth Hour, Environmental Month, and World	3.55	Often

	Environment Day, among others.		
Overall Mean	**Weighted**	**3.06**	**Sometimes**

Table 9 presents the summary of the pupils' level of participation in the different YES-O program components. The data show that clean-up drives obtained the highest weighted mean of 3.63, interpreted as "often," while seed bank and nursery establishment obtained the lowest weighted mean of 2.30, interpreted as "rarely." The overall weighted mean of 3.06 indicates that pupils' participation in YES-O programs is described as "sometimes."

Table 9. Summary Table of the Pupils' Level of Participation in YES-O Programs

Variables		**Weighted Mean**	**Interpretation**
1.	Seedbank and Nursery Establishment	2.30	Rarely
2.	Planting and Caring of Trees	3.27	Sometimes
3.	Water Conservation	3.03	Sometimes
4.	Biodiversity Conservation	2.61	Sometimes
5.	Power Supply Programs	3.33	Sometimes
6.	Clean – up Drives	3.63	Often
7.	Ecological Solid Waste Management	3.22	Sometimes
8.	School Initiated Activities	3.06	Sometimes
Overall Mean	**Weighted**	**3.06**	**Sometimes**

Effects of Pupils' Participation in YES-O on their Learning Progress

The effects of pupils' participation in YES-O on their learning progress in terms of science performance, pro-environmental behavior, and environmental actions are as follows:

Science Performance. Table 10 contains the weighted mean and interpretation of the effects of pupils' participation in YES-O on their learning progress in terms of science performance.

Table 10. Effects of Pupils' participation in YES-O on Their Science Performance

Indicators		**Weighted Mean**	**Interpretation**
1.	I can trace and understand the history and nature of science, specifically in areas like biodiversity, waste management, water management, energy use, and climate change, among others.	3.55	Agree
2.	I can infer and communicate well my learning and realizations specifically on matters concerning natural life and the environment.	3.42	Neutral
3.	I ask questions, predict, observe, describe, and generalize of environmental and other scientific processes	3.44	Neutral
4.	I make conclusions that are logical and supported by evidence specifically on concerns about the environment.	3.43	Neutral
5.	I can better understand environmental concepts discussed in my science classes.	3.51	Agree
6.	I observed that my test results in science activities have improved.	3.66	Agree
7.	I can actively engage in classroom discussions pertaining to environmental care and protection.	3.62	Agree
8.	I can better understand lessons on biodiversity, specifically on maintaining safe spaces for living creatures.	3.52	Agree

9.	I have learned more on the native species of trees available in the Philippines, particularly in my community.	3.55	Agree
	Overall Weighted Mean	**3.52**	**Agree**

Pro-Environmental Behavior. Table 11 contains the weighted mean and interpretation of the effects of pupils' participation in YES-O programs on their learning progress in terms of pro-environmental behavior.

Table 11. Effects of Pupils' Participation in YES-O programs on their Pro-environmental Behavior

	Indicators	Weighted Mean	Interpretation
1.	I believe that respecting the earth is our primary task as humans.	3.94	Agree
2.	I find unity with nature whenever I engage myself with environmental causes.	3.73	Agree
3.	I vow to protect the environment in school and at home.	3.91	Agree
4.	I promise to minimize and/or prevent pollution to save Mother Earth.	3.97	Agree
5.	I acknowledge that nature is the source of life and spirituality.	4.07	Agree
6.	I value that Earth is our home; hence, it needs to be protected.	4.16	Agree
7.	I consider environmental education important to spread awareness on the present state of the environment.	3.84	Agree
8.	I believe that the government has a significant duty of protecting and preserving the country's natural resources.	3.90	Agree
9.	I consider my personal efforts in waste segregation important towards environmental conservation.	3.89	Agree
10.	I realized that environmental protection necessitates the collaborative efforts of the community	3.94	Agree
	Overall Weighted Mean	**3.94**	**Agree**

Environmental Actions. Table 12 entails the weighted mean and interpretation of the effects of pupils' participation in YES-O programs on their learning progress in terms of environmental actions.

Table 12. Effects of pupils' participation in YES-O program on their learning progress in terms of environmental actions

	Indicators	Weighted Mean	Interpretation
1.	I support and practice waste segregation.	3.88	Agree
2.	I support and practice recycling.	3.91	Agree
3.	I encourage my parents to use long-lasting light bulbs.	3.61	Agree
4.	I save electricity by turning off my gadgets	3.86	Agree
5.	and appliances when not in use.		
6.	I walk or take a bike to school to save energy.	3.68	Agree
7.	I volunteer for cleanup drives in the school and in my community.	3.84	Agree
	Overall Weighted Mean	**3.80**	**Agree**

IV. DISCUSSION

The discussion is organized according to the research objectives of the study: pupils' level of participation in the implementation of the YES-O programs, the effects of participation on pupils' learning progress, and the development of the proposed intervention outputs.

Strengths and Gaps in Pupils' Participation in YES-O Program Implementation

The findings show that pupils' participation in the implementation of YES-O programs varied across the eight program components. In general, pupils were more involved in activities that were routine, visible, and easier to perform within the school setting, while lower participation was observed in activities that required resources, technical preparation, sustained monitoring, or external coordination.

Seedbank and Nursery Establishment. The results indicate that pupils' participation in seedbank and nursery establishment was generally low. Although pupils showed some involvement in collecting fruit tree seeds and seedlings, their participation in maintaining the nursery, managing operations, using proceeds for maintenance, and selling excess seedlings remained limited. This suggests that seedbank and nursery activities may not yet be fully integrated into regular school routines and may require more materials, guidance, and sustained supervision. The low rating in this area points to the need for more structured pupil roles, teacher guidance, and school-community support. Since this component involves long-term care, monitoring, and possible entrepreneurial activities, pupils may benefit from simple step-by-step tasks, schedules, and recognition mechanisms that will make nursery work more manageable and meaningful.

These results imply that while students show occasional interest in certain nursery activities, such as collecting fruit tree seedlings, their participation in other crucial aspects like entrepreneurial initiatives. This trend aligns with the findings of Villanueva and Cruz (2021) who reported that student engagement in school-based environmental programs tends to be higher in activities perceived as directly beneficial or enjoyable but tapers off in tasks requiring long-term commitment. Similarly, Dela Peña et al. (2020) emphasized that effective environmental projects in schools require structured participation strategies to maintain student interest and ensure project sustainability. This lack of consistent involvement poses a direct threat to the sustainability of the seedbank program.

Tree Planting and Caring. The results mean that pupils' participation in planting, growing, and caring for trees under the YES-O programs is generally moderate, with the highest involvement observed in planting trees outside the school or in other communities, choosing native species for planting, and attending training or orientations on proper planting methods. These results suggest that students are more engaged in activities that involve community outreach, promote biodiversity conservation, and enhance their skills through structured learning opportunities. However, the lowest participation is found in providing members with planting and growing materials and equipment and planting trees within the school campus, indicating challenges in resource availability and sustaining interest in on-campus initiatives. These findings are supported by the study of Mendoza and Santos (2020), which found that students are more inclined to join environmental programs that offer community interaction and visible impact. Similarly, Ramos (2019) emphasized that access to resources and equipment significantly influences participation in school-based environmental activities. Villanueva and Cruz (2021) also noted that structured training and educational components within environmental programs enhance student engagement and improve project outcomes.

These imply that YES-O programs are more effective in motivating pupils to participate in activities that are community-oriented and skill-enhancing rather than resource-dependent or location-bound. The relatively lower participation in resource provision highlights the need for stronger logistical and material support from the school and partner agencies. Furthermore, the moderate engagement in on-campus planting suggests that integrating these activities into regular school routines could help maintain momentum and interest.

Water Conservation. The results indicate that pupils participate in water conservation activities of the YES-O programs only at a moderate level, suggesting that while some actions are practiced, they are not consistently implemented. Participation is higher in activities that are simple, practical, and require minimal resources, such as using refillable bottles and monitoring leaks. On the other hand, activities that demand infrastructure, technical expertise, or sustained advocacy efforts receive less attention from pupils. The findings are consistent with Tukker et al. (2020), who observed that students are more likely to engage in low-cost, immediately applicable environmental actions within school settings. Cordero et al. (2021) emphasized that infrastructure-based environmental projects often, and operational management remains limited. This lack of consistent involvement may hinder the sustainability and expansion of the seed bank and nursery program. Strengthening pupil engagement through incentives, integrated learning activities, and practical training could enhance participation levels and contribute to both environmental and entrepreneurial education. These findings imply that the school may need to strengthen support mechanisms, resources, and training for pupils to engage in more resource-intensive water conservation projects. Encouraging a culture of environmental responsibility through consistent campaigns, integration into lessons, and student-led initiatives can help enhance participation.

Biodiversity Conservation. The results mean that pupils' participation in biodiversity conservation activities under the YES-O programs is moderate, with initiatives being

implemented occasionally but not on a regular basis. Greater involvement is seen in activities that are simple and resource-friendly, such as identifying green spaces and planting local wildflowers, which can be easily integrated into the school environment. On the other hand, participation is low in activities like putting up aquariums, which require more resources, maintenance, and technical skills, making them less accessible for regular implementation. The results are consistent with the findings of Cordero et al. (2021), who emphasized that students are more engaged in conservation activities when they are low-cost, hands-on, and locally relevant. Similarly, Dela Cruz and Torres (2019) found that integrating environmental activities into school routines enhances participation and fosters long-term ecological awareness. Tukker et al. (2020) also highlighted that resource-intensive environmental projects often require external support and incentives for successful implementation in educational settings. These results suggest the need to strengthen biodiversity conservation initiatives in schools by providing more support, training, and resources to pupils.

Power Supply Programs. The results indicate that pupils' participation in the YES-O power supply programs is moderate, meaning activities are implemented occasionally but not consistently. Pupils are more engaged in energy-saving practices that are easy to apply daily, such as using natural light in classrooms, turning off unused gadgets, and checking ventilation to reduce the need for cooling appliances. Consequently, participation is lower in activities like posting conservation signage and promoting the use of energy-efficient fluorescent bulbs, which may require more administrative coordination or resource allocation. The findings are supported by Martinez and Esteban (2019), who noted that students are more likely to engage in conservation behaviors that are immediately actionable and require minimal effort. Likewise, Tieng and Pham (2021) emphasized that advocacy and infrastructure-related conservation activities in schools often need strong administrative backing to be successful. In line with this, Lee et al. (2020) found that sustained environmental education programs significantly enhance students' long-term commitment to energy-saving practices. These findings imply that while pupils actively participate in simple, habit-based conservation measures, there is a need to strengthen initiatives that involve advocacy and infrastructure changes. Schools may consider integrating energy conservation awareness into classroom lessons and campaigns to sustain behavioral change.

Clean-Up Drives. The results show that pupils' participation in clean-up drives under the YES-O programs is generally high. Pupils are most engaged in routine and school-based activities such as encouraging classroom sweepers to clean regularly, conducting clean-up drives within the school, and participating in clean-up drives outside the campus. Lower participation is seen in activities that require external collaboration or resource provision, such as partnering with other organizations and supplying cleaning materials to members and volunteers. The results are corroborated by Fernandez and Tan (2020), who found that routine school-based environmental practices promote greater student engagement due to their predictability and accessibility. Similarly, Alvarez et al. (2021) emphasized that successful community-linked environmental programs in schools require structured coordination and resource support to maintain student involvement. In addition, Lee and Kim (2019) noted that participation in environmental activities is higher when students perceive them as manageable, visible, and directly beneficial to their immediate surroundings.

These findings imply that pupils are more consistent in taking part in structured, school-centered environmental activities compared to those requiring additional logistical planning or inter-organizational cooperation. Schools can build on this strength by sustaining and formalizing regular clean-up schedules while gradually integrating community partnerships to extend environmental impact. Allocating budget or seeking sponsorships for cleaning materials may further encourage pupils to actively join both internal and external clean-up efforts.

Ecological Solid Waste Management. Pupils' participation in ecological solid waste management was moderate. Higher participation was observed in keeping trash areas clean, separating waste, and working with groups in waste-related tasks. These results show that pupils are engaged in visible and hands-on waste management practices. However, lower participation in waste management talks and composting facilities suggests that information-based and structure-based components are less emphasized. Schools may strengthen this area by providing regular waste management orientations, establishing simple composting areas, and assigning pupil-friendly roles in segregation, monitoring, and recycling activities. Similar findings were reported by Santos and Cruz (2021), who noted that students are more participative in school-based environmental events than in community-driven or revenue-generating projects. Dela Peña and Villanueva (2020) emphasized that participation increases when activities are well-structured, supervised, and celebrated within the school setting. Furthermore, Espinosa (2019) found that external engagement and project facilitation require advanced skills and support systems, which are often limited at the elementary level, thus affecting participation rates.

These findings imply that while pupils show initiative in hands-on waste management, there is a need to strengthen educational and infrastructural support to ensure consistent engagement. Schools may need to organize more frequent and engaging awareness sessions on waste management and invest in facilities like compost pits and waste centers to encourage active participation. Strengthening collaboration with environmental agencies and community partners can further enhance pupils' skills,

awareness, and commitment to ecological solid waste management practices.

School-Initiated Activities. The findings indicate that pupils' participation in school-initiated YES-O activities is generally at the *"Sometimes"* level. The highest participation is observed in observing environmental celebrations, planning programs and activities, and monitoring and evaluating programs, suggesting pupils are more engaged in structured and ceremonial activities. Conversely, the lowest participation is seen in facilitating income-generating projects and conducting outreach programs, indicating limited involvement in initiatives that require more logistical, financial, and community engagement. Studies have shown that environmental programs in schools are more effective when both practical activities and educational sessions are integrated (Domingo & Ferrer, 2021). According to Cabangon et al. (2020), the availability of proper waste management infrastructure directly influences students' participation levels in ecological activities. Moreover, Ramos and Valdez (2022) found that active engagement in solid waste management is fostered when students are exposed to both hands-on experiences and continuous environmental education, leading to more sustainable habits.

The results imply that while pupils show interest in school-based and event-driven environmental activities, there is a need to strengthen engagement in programs requiring higher responsibility and external collaboration. Schools may need to provide more guidance, resources, and capacity-building activities to increase participation in outreach and income-generating projects. Strengthening these areas could lead to more holistic environmental involvement, fostering leadership, resource management skills, and community awareness among pupils.

Summary of the Pupils' Level of Participation in YES-O Programs. The overall weighted mean indicates that pupils' participation in YES-O programs was at the "Sometimes" level. Clean-Up Drives received the highest rating, while Seedbank and Nursery Establishment received the lowest. This pattern confirms that pupils participate more in familiar and immediate environmental actions but less in long-term, technical, and resource-intensive activities. Similar findings were reported in previous studies, which showed that learners tend to engage more in visible, routine, and hands-on environmental activities, while participation decreases in projects that require sustained effort, technical skills, and resource support (Villanueva & Cruz, 2021; Cordero et al., 2021). These findings imply that YES-O implementation may be improved by making complex activities more structured, child-friendly, and easier to monitor. The results also provide a clear basis for developing an intervention that guides pupils through varied environmental tasks while sustaining their interest and participation throughout the school year.

Linking Participation in YES-O Programs to Pupils' Learning Progress

The meaning, implications, and related studies supporting the results of the effects of pupils' participation in YES-O on their learning progress in terms of science performance, pro-environmental behavior, and environmental actions are as follows:

Science Performance. The result indicates that pupils generally perceive the YES-O programs as beneficial to their science performance. The highest-rated indicators, improved test results in science activities, active engagement in classroom discussions on environmental care and protection, and the ability to trace and understand the history and nature of science highlight the program's strong impact on knowledge acquisition and participation. In contrast, the lowest-rated indicators, such as the ability to make logical, evidence-based conclusions and effective communication of learning realizations, suggest areas for further enhancement in critical thinking and communication skills. Similar findings were reported by Bautista and Francisco (2020), who found that environmental education programs significantly improve students' scientific knowledge and engagement. Likewise, the study of Reyes et al. (2019) emphasized that school-based environmental initiatives enhance students' active participation and environmental literacy. Furthermore, Villanueva and Garcia (2021) noted that while such programs increase awareness and participation, explicit strategies must be employed to develop students' analytical and communication skills.

The findings imply that YES-O programs not only enhance pupils' academic performance in science but also foster active participation and environmental awareness. However, the relatively lower scores in evidence-based reasoning and communication indicate the need for targeted interventions, such as inquiry-based projects and structured reflection activities, to strengthen these competencies. Schools could integrate more collaborative and investigative activities into YES-O initiatives to maximize their educational benefits.

Pro-Environmental Behavior. The findings indicate that students generally have a strong agreement toward pro-environmental behaviors as influenced by the YES-O programs. They demonstrate a deep appreciation for protecting and preserving nature, with the highest emphasis on valuing Earth as a home and acknowledging nature as a source of life and spirituality. However, some indicators, such as unity with nature and viewing environmental education as important, while still agreed upon, were slightly less emphasized compared to other behaviors. Previous research supports the idea that school-based environmental programs significantly influence students' ecological attitudes and behaviors (Alwahaibi et al., 2020). Similarly, Olsson et al. (2019) found that active participation in environmental organizations fosters a sense of responsibility and

environmental stewardship among youth. Moreover, Chawla and Cushing (2007) emphasized that experiential learning and school-community partnerships play a crucial role in developing lifelong pro-environmental commitments.

The findings suggest that YES-O programs are effective in fostering environmentally responsible behaviors that are easy to integrate into students' daily routines. Schools can build on this success by implementing targeted initiatives to address less-practiced actions, such as awareness campaigns for sustainable commuting and energy-efficient household choices. Strengthening partnerships with families and local communities could further enhance student participation in broader environmental efforts.

Environmental Actions. The results show that students generally agree that the YES-O programs have positively influenced their environmental actions, particularly in the areas of recycling, waste segregation, and saving electricity. These behaviors are likely reinforced by the accessibility of such practices both at school and at home. However, actions that require changes in transportation habits or household decisions, such as walking or biking to school and encouraging the use of long-lasting light bulbs, appear to be less frequently practiced. These findings align with the study of Chawla and Derr (2012), which emphasized that environmental programs in schools significantly increase students' pro-environmental attitudes and behaviors. Similarly, Olsson and Gericke (2016) found that practical environmental actions embedded in school programs lead to stronger long-term sustainability habits among students. Moreover, Boeve-de Pauw and Van Petegem (2013) highlighted that environmental education is most effective when students can apply the learned behaviors both in and outside of school contexts.

The findings of the study imply that the implementation of YES-O programs provides meaningful opportunities for pupils to develop environmental awareness, responsible behavior, and science-related learning through actual participation in school-based environmental activities. While the results show that pupils were more engaged in visible and familiar activities such as clean-up drives, tree planting, and school-initiated environmental actions, they also suggest the need to strengthen participation in activities that require deeper technical understanding, sustained monitoring, and resource support. This finding is consistent with the view that environmental education becomes more effective when learners are actively involved in real-life tasks, collaborative activities, and reflective learning experiences. Thus, the results highlight the importance of providing structured, child-friendly, and consistent mechanisms that will guide pupils in participating meaningfully in YES-O activities.

Based on the identified strengths and gaps in pupils' participation and learning progress, there is a need for a structured and learner-centered intervention that will enhance engagement across all YES-O components. These findings were utilized as important basis for the development of the EcoQuest YES-O Mission Passport. Since some YES-O components showed lower or uneven levels of participation, the EcoQuest was designed to provide pupils with guided missions, simple tasks, reflection activities, and documentation spaces that can help sustain their involvement across different environmental programs.

V. CONCLUSION

This study concludes that pupils participated more actively in routine and familiar YES-O activities such as clean-up drives, tree planting, and water conservation, while lower participation was noted in resource-intensive and skill-based activities such as seedbank and nursery establishment, biodiversity conservation, and ecological solid waste management. In relation to pupils' science learning progress, the YES-O programs contributed positively to classroom engagement, test improvement, and understanding of environmental concepts, although some areas such as making evidence-based conclusions and communicating environmental insights still needed improvement.

The study also concludes that pupils demonstrated positive pro-environmental behaviors through their involvement in school-based environmental activities. However, deeper appreciation of nature and consistent practice of environmental values may still be strengthened. In terms of environmental actions, YES-O programs encouraged pupils to participate in waste management, conservation practices, and other school environmental activities, but sustainable practices beyond the school setting, particularly at home and in the community, were less evident. Furthermore, the findings served as the basis for the development of the EcoQuest YES-O Mission Passport which was designed to strengthen pupils' participation, learning, reflection, and sustained involvement in varied YES-O activities.

Based on these conclusions, it is recommended that schools may provide more structured and varied YES-O activities that encourage pupils to participate not only in routine activities but also in skill-based projects such as seedbanks, nurseries, composting, biodiversity conservation, and recycling initiatives. Teachers and YES-O advisers may also integrate inquiry-based, performance-based, and reflection-based tasks in YES-O activities to strengthen pupils' critical thinking, reasoning, and communication skills in relation to environmental concepts. Moreover, schools may strengthen activities that promote pro-environmental values, appreciation of nature, and responsible behavior through regular reflection, collaborative tasks, and recognition of pupils' environmental efforts. YES-O advisers, teachers, and parents may also encourage pupils to extend sustainable practices beyond the school setting by promoting simple home- and community-based environmental activities. Finally, schools may use the EcoQuest YES-O Mission Passport as support tools for

monitoring participation, guiding pupils' environmental tasks, and improving the implementation of YES-O programs. Future researchers may conduct longitudinal or comparative studies to examine the long-term effects of YES-O participation on pupils' academic performance, environmental behavior, and leadership development.

VI. DISCLOSURE

The authors report no conflicts of interest in this work.

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