


Green School Practices in Quezon Province: Groundwork for a Sustainable Development Program

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This research explored the green school practices and go green programs in Quezon Province with an end view of developing a sustainable green school development program. A quantitative research using the descriptive-comparative design, this study included 16 secondary schools, where 112 teacher-coordinators and school head participants purposively accomplished a survey-questionnaire. Weighted mean and analysis of variance (ANOVA) were used to analyze the data. Results show that the most common green school practices is Green Healthy Space (gardening) while the least is Resources Sustainability (waste management). A sustainable development program was proposed to address the reported lack of sustainability of green school programs in the province. The findings of the study can serve as a good basis for DepEd top management for a more localized implementation towards the goal of effecting behavioral change on environment-related matters (increasing recycling, care of neglected areas, promoting green healthy spaces, etc.) within the locality where the schools belong.

1. INTRODUCTION

Schools play a vital role in the dissemination of ideas on environmental development, and sustainability (Robles & Verana, 2012). In the Philippines, various policies and memoranda were released to serve as guides for teachers, researchers, students, administrators, and the community to come up with action plans that guarantee the basic education sector's support for the development of environmental awareness and sustainability particularly among the Filipino youth. These include: (1) Regional Memorandum No. 145, s. 2015 or commonly known as the Core on the Implementation of the Green School Program "Go Green" of DepEd-NCR; (2) R.A. 9512 or the National Environmental Awareness and Education Act of 2008; (3) DepEd Order No. 52 s. 2011, the annual National Search for Sustainable and Eco-Friendly Schools; and (4) the latest flagship DepEd Saligan 2022+ or Mga Adhikain sa Mapagpalayang Edukasyon (The OUA 5-Year Master Plan), aside from multi-agency efforts in support of the United Nation's Sustainable Development Goals (SDG). Despite these policies, schools in the Philippines are found to be lacking actions on sustainability, especially nowadays when unexpected disasters and calamities do happen within the premises of schools (DepEd Education Facilities Manual, 2010).

Notable findings on green school practices can be noted from the various studies on the effects of greening programs on students, teachers, and stakeholders' physical, mental, social, and academic performance. Locally, the greening of all schools in the Philippines is believed to make a tremendous impact on students' health, test scores, teacher performance, retention, and cohort survival rates, school operational costs, and the environment (DepEd Education Facilities Manual, 2010). Green school practices such as environmental awareness, ecological knowledge, attitudes, values, commitments for actions, and ethical responsibilities for the rational use of resources and for sound and sustainable development are expected to be imparted to its target groups (UNICEF& UNESCO, 2012). Hence, green school practices must aim to develop skills and understanding among the students, faculty, and administration in initiating active responses and increasing community awareness and participation in environmental concerns.

Thus far, the Department of Education–Division of Quezon (henceforth, DepEd-Quezon), nor any other Divisions in the CALABARZON region, do not have their own fully developed policy or program focusing on the combined seven cores of green schooling. Contributing factors to such dilemma tend to include a lack of understanding of the concept of conservation, protection, and rehabilitation of natural resources and the environment in the context of sustainable development. This apparent need gave the researcher the impetus to locally adapt, explore and compare the green school practices in Quezon province. The output of this study may serve as the framework for strengthening the implementation of green schooling

within Quezon Province and hope to enable DepEd officials, teachers, students, parents, and community stakeholders to be responsive in translating their practices into sustainable programs.

In the next section, the literature on green school practices and sustainable development program were presented. This was followed by the discussion of materials and methods in the conduct of the study. The results and discussion section as well as the Conclusion section provided the salient findings of the paper.

2. GREEN SCHOOL PRACTICES: DIMENSIONS AND PROBLEMS ON SUSTAINABILITY

Green school practices are activities intended to promote good environmental practices such as resource conservation and maintenance, and cost savings resulting in staff health, morale, and productivity improvement. A school is considered sustainable and eco-friendly if it has environmental policies and programs on physical cleanliness and beautification; paper, energy, and water conservation; waste reduction, segregation, recycling, and composting; pollution control; gardening; climate change adaptation and disaster risk reduction management. Sustainable and eco-friendly schools are those that can initiate, integrate, and maintain in their instruction, research, or administration environment-related programs (Department of Education and Natural Resources-Environmental Management Bureau, 2015).

To cite examples of greening activities, Robles and Verana's (2012) study noted that the common and specific green school practices among schools in General Santos City are environmental education and campaign programs, waste disposal and management programs, war on waste programs, tree planting program, and clean and green program. Garcia and Luansing (2016) added more examples with respect to institutions in Region IV-A CALABARZON involving solid waste management, energy conservation, reforestation, family planning methods, and related environmental management practices.

Elsewhere in the world, Igbokwe (2012), in his study on schools in Ontario, Canada, identified some of the other specific practices underpinning green schooling. These are: The EarthCARE™, Classroom Earth, and Environment as an Integrating Context for Learning Program -The EICModel™, Outdoor Education, Eco Regeneration Field Study, EcoSchools, Green School Program, Environmental Club, Go Green Initiatives, School Yard Greening, and Tree Planting. The ASEAN Environmental Education Action Plan (2014-2018) as cited by Davis (2016) and expands Environmental Education/Education for Sustainable Development as a key integrating tool in development the of environmentally sustainable cities in

each ASEAN member-state. These examples demonstrate how greening practices are widely promoted in other countries.

Pursuant to DepEd Order No. 52 s. 2011 otherwise known as “Strengthening Environmental Education in Public and Private Schools,” public and private schools shall undertake activities such as: intensifying lessons on environmental concerns included in drills, discussions, and activities; encouraging school administrators, officials, and teachers to use various instructional materials in making students aware of the concerns and issues on the environment that will promote students’ involvement in environmental activities and advocacies and instill in their minds the need to preserve and protect the environment; encourage the teachers to attend lecture-seminars, workshops, conferences and other forums relating to environmental education which may be considered in their application for promotion; establish Youth for Environment in School Organizations (YES-O) as stipulated in DepEd Order No. 72, s. 2003 by all public and private elementary and secondary schools from grades 4 to 7; and establish, register, monitor, and evaluate YES-O and other related organizations.

Findings that students in secondary schools have little awareness of emerging environmental problems and environmental awareness and issues in schools were regretfully noted by Boiyo (2010), Harun et al., (2011), Robles and Verana (2012), and Garcia and Luansing (2016), among others. Nevertheless, Reyes (2014), citing the works of Chapman and Sharma (2001), noted that students can be turned into more environmentally conscientious citizens if schools will aid in affecting pupils’ attitudes.

As of this writing, the Department of Education continues to promote R.A. 9512, or the National Environmental Awareness and Education Act of 2008 aiming to promote national awareness on the role of natural resources in economic growth and relevance of environmental conservation and ecological balance towards sustained development.

2.1 Dimensions of Green School Practices

There are seven core dimensions of green schooling: toxic reduction indoor and outdoor air quality and acoustical performance, resources sustainability, green healthy space, health and wellness, environmental literacy, preparedness, safety and security, and linkages and networks (RM No. 145, s. 2015).

Core 1 is about toxic reduction, indoor and outdoor air quality, and acoustical performance including but not limited to non-toxic and eco-friendly supplies and materials, indoor and air quality, lighting and thermal comfort, water conservation/ construction of 23 rain collectors, practices, operations, and maintenance that

reduce energy consumption and other resources (e.g., LED lights) and health and sanitation inside and outside of the school (Regional Memorandum No. 145, s. 2015).

Core 2 is resources sustainability including NGP Eco-Savers Program, Savings, Recycled Products, and MRF (Regional Memorandum No. 145, s.2015). Schools generate significant amounts of waste every day from their academic and management activities. With this, Marcus (2012) mentioned that the school has the responsibility of reducing the use of at least one resource (water, electricity, paper) and collecting recycled waste of at least three materials (paper, waste, organic waste).

Core 3 is about Green Healthy Space like NGP-Gulayan sa Paaralan (organic, vermiculture and urban gardening, vertical containerized, aquaponics, hydroponics, mushroom culture), NGP tree-planting (Fruit-bearing and endemic trees), Canteen operation and management (Regional Memorandum No. 145, s. 2015). A healthy and safe school as defined by SEAMEO-INNOTECH (2016) refers to the physical surroundings and the psycho-social climate and culture of the school. Moreover, World Health Organization (2012) emphasizes that a green healthy space can facilitate physical activity and relaxation, and refuge from noise. It has been also found that a green healthy space is important to mental health since it reduces health inequalities, improves well-being, and aids in the treatment of mental illness.

Core 4 is about Health and Wellness including but not limited to Project Smile, NGP-Feeding Program, Healthy Food Choices, Physical Activity (ex. Exercises, games, etc.), and healthy lifestyle choices (Regional Memorandum No. 145, s. 2015). Being healthy is a factor that helps students succeed in academic work. Thus, it is important for students to be in a healthy environment and to practice healthy living. Schools have an important role in ensuring that these conditions are met (SEAMEO-INNOTECH, 2014).

Core 5 is about Environmental Literacy including but not limited to values formation, student involvement in greening the school, hands-on, place-based learning (experiential learning), ecological issues and concerns (e.g., climate change, pollution), integration of greening into the curriculum, and formation and orientation of "Go Green" team (Regional Memorandum No. 145, s. 2015). Thus, an environmentally literate person has knowledge and understanding about environmental problems thus promotes pro-environmental behaviors of society (Teksoz, et al., 2012).

Core 6 is about preparedness, safety, and security including Disaster Risk Reduction Management (Regional Memorandum No. 145, s.2015). School safety is the job of the entire school community. Thus, schools should establish and maintain

an ongoing School Disaster Management Committee (also called a School Safety Committee, or School Disaster and Emergency Management Committee) to oversee disaster risk reduction and preparedness.

Core 7 is on linkages and networks including partners with stakeholders (GOs, NGOs, parents, PTA, community), participation in the development of national and local greening programs, Be RICEponsible Program (Regional Memorandum No. 145, s.2015). SEAMEO-INNOTECH's (2016) key findings also suggested that parents and other members of the community should be encouraged to become more involved by working with the PTA, local government officials, and other NGOs to increase parent and community engagement

2.2 Sustainable Development Program

The concept of sustainable development (SD) seeks to combine environmental concerns with social and economic development (Boeve-de-Pauw, et al., 2015). That is why there is a need to produce sustainable development programs to improve the education system and even the quality of life of the future generation. In the Philippines, initiatives have been implemented such as in the case of farming systems where environmental sustainability programs are promoted and instituted. Briones (2005) as cited from the work of Robles and Verana (2012) claimed that the initiatives from different sectors of society can diminish the unfavorable ecological impact of farming systems.

While there are programs and practices in place regarding environmental practices, Labog (2017) stated that sustainability remains "a problem all over the world." (p.102). This entails proper implementation and planning of local, national, and international standards needed for various sectors of society to maneuver into change. Schools, being the training ground of future citizens, remain to be the fertile ground through which to instill upon the youth the value of environmental protection and sustainability. This paper thus evaluates the local implementation of relevant programs and projects on environmental protection and sustainability in DepEd-Quezon.

3. MATERIALS AND METHODS

This study is a quantitative research using the descriptive-comparative design as the research dealt with the comparison and the significant difference in the present facts or current conditions concerning green school practices in schools in DepEd Quezon in the Philippines (Calderon & Gonzales, 2016).

This study was conducted in the selected secondary schools in DepEd Quezon representing four congressional districts. In the quantitative phase, the participants in the study were selected teacher-coordinators in the four congressional districts of Quezon Province. The list of schools was based on DepEd CALABARZON master list of public Secondary Schools making sure that there would be one school for every chosen town in each congressional district. Four secondary schools with seven teacher-coordinators represented each congressional district. A total sample of 112 teacher-coordinators from 16 public secondary schools within the four congressional districts ranging from small (Principal I), medium (Principal II), large (Principal III), and mega school (Principal IV) of Quezon Province were invited to participate in the study.

The respondents were chosen by means of purposive sampling since they have characteristics, designations, and tasks suited to the attainment of the objectives of the study. The respondents were composed of physical facilities coordinators, solid waste management coordinators, Gulayan sa Paaralan coordinators, health and wellness coordinators, YES-O coordinators, disaster-risk reduction management (DRRM) coordinators, Brigada coordinators and/or School-Based Management (SBM) coordinators from each of the chosen schools in the Four Congressional Districts of Quezon served as the respondents for the study. To protect their anonymity, their names are withheld from the discussion.

The respondents were asked to answer a forty-nine-item green school practices questionnaire. A 4-point likert scale was used to measure the responses. Cronbach Alpha was used to test the instruments' reliability, gaining a result of 0.89 (Good). The statistician suggested revisions to some items with low-reliability results. On the qualitative side, the interview guide was also pilot-tested among two school heads for possible drawbacks in the sequencing and follow-up questioning. This is also done to see if there are possible violations of ethical principles and practices.

Before the actual conduct of the instruments, an informal pilot study was conducted with fourteen teacher-coordinators in Sariaya East District. Afterward, the researcher herself facilitated the actual administration of the instruments to

entertain and clarify probable concerns. Collected data were organized, tabulated, and evaluated. Responses from the questionnaire were entered in a matrix using Excel format and were sorted by congressional districts and schools. To ascertain the green school practices and the challenges met in its implementation, weighted mean was used. To compute the significant difference between the green school practices and the challenges met, One-Way Analysis of Variance (ANOVA). They were analyzed using the SPSS software.

4. RESULTS AND DISCUSSION

The presentation, interpretation, and analysis of the data are arranged below in accordance with the questions posited on the objectives of this paper. The results are presented in sequence through survey questionnaires.

4.1 Implementation of Green Schooling in DepEd-Quezon

The succeeding table presents the results of the consolidated green school practices in DepEd Quezon in terms of its six dimensions such as *Toxic Reduction, Indoor and Outdoor Air Quality and Acoustical Performance; Resources Sustainability*

Table 1. Consolidated Green School Practices in DepEd Quezon

Core	WM	Description
Toxic Reduction, Indoor and Outdoor Air Quality and Acoustical Performance	3.20	Observable
Resources Sustainability	2.94	Observable
Green Healthy Space	3.32	Highly Observable
Health and Wellness	3.17	Observable
Environmental Literacy	3.20	Observable
Preparedness, Safety, and Security	3.27	Observable
Linkages and Networks	3.13	Observable
Average Weighted Mean	3.18	Observable

As analyzed, the most response in terms of core 1 is item number 6 stating that their school encourages students to participate in activities such as minimizing the generation of air, water, and land pollutants like not burning plastics, dry leaves, and rice hays because of the Implementation of RA 8749 or the Philippine Clean Air Act promoting public information and education encouraging active participation in promoting, planning and monitoring activities improving air quality (Rule IV, sec. 1.d.). This result supports DepEd Memorandum 24, s. 2019 or the National Search for Sustainable and Eco-Friendly Schools under Environmental and Climate Change Dimensions in School Operations item on Environmental Domain criteria number 5 stating that the school shall have pollution prevention programs such as water pollution prevention, prohibition of smoke-belching vehicles, presence of signages, etc. and criteria number 8 stating climate change and Disaster Risk Reduction programs. The next table presents the respondents' observations on how their school is compliant with Core 2.

Table 2. *Toxic Reduction, Indoor and Outdoor Air Quality and Acoustical Performance*

Item	Statements	WM	Description
1	Classrooms have functional doors and windows for natural lighting and air ventilation.	3.63	Highly Observable
2	The school is far from sources of noise and distraction.	3.27	Highly Observable
3	The school undergoes air, water, and soil quality testing annually.	2.32	Seldom Observable
4	The school periodically monitors the disposal of hazardous chemicals and toxic wastes to prevent emission of foul odor.	2.95	Observable
5	The school encourages students to use eco-friendly products, such as Eco bags as an alternative to plastic to reduce toxins caused by excessive garbage.	3.39	Highly Observable
6	The school encourages students to participate in activities in minimizing the generation of air, water, and land pollutants like not burning plastics, dry leaves, and rice hays.	3.56	Highly Observable
7	The students are discouraged to have activities that will create noise in the school campus.	3.27	Highly Observable
Average Weighted Mean		3.20	Observable

It can be seen in Table 2 that the computed AWM of 3.20 demonstrates that the respondents observe green school practices in terms of toxic reduction, indoor and outdoor quality, and acoustical performance. The result implies that most of the schools are considered conducive in terms of classroom set-up. Thus, it is the role of every institution, including the schools to adopt some ways how to promote toxic reduction policies and activities (Toxic Reduction Act of 2009). Barr (2011) in their separate study presented the pronounced effects of poor air quality on students and teachers such as asthma and allergies and increasing sick days. Noise pollution, on the other hand, can cause headaches, high blood pressure, dizziness, fatigue, and other variety of short and long-term effects (EPA, 2018). This is particularly why Department Memo No. 254, s. 2018 or Reiteration of Regional Memorandum No. 15, s. 2013, Re: Classroom Structuring states that schools should abide by the rules of standard classroom management and structuring. Another reason why schools must practice Core 1 is based on the findings of the Environmental Protection Agency (2018) stating that unhealthy school environments can affect children's health, attendance, concentration, and performance, as well as lead to expensive, time-consuming clean-up and remediation activities. The next table discusses how the schools manage their resources.

Table 3. Resources Sustainability

Item	Statements	WM	Description
1	The school ensures that lighting, computers, projectors, air conditioning, fans, and other peripheral equipment are turned and plugged off when not in use.	3.67	Highly Observable
2	The school prohibits the charging of cell phones, laptops, and other gadgets to conserve energy.	3.20	Observable
3	The school has a solid-waste management programs on categorizing/segregating wastes.	3.52	Highly Observable
4	The school has renewable energy technology such as solar panels being installed in windows or roofing.	1.40	Not Observable
5	The school has regular inspection of piping and faucets for leaks and has water tanks and other containers for conserving water.	2.78	Observable
6	The school designates a specific place in the campus as a Material Recovery Facility (MRF) and generates income from garbage by selling cardboards, paper, and plastic bottles in junk shops.	3.16	Observable

7	The school adopts electronic paperless practices such as submission of documents, tests, and other transactions.	2.82	Observable
Average Weighted Mean		2.94	Observable

It can be seen from the table above that the computed average weighted mean of 2.94 indicates that the respondents *observe* that resource sustainability is practiced in their schools. The highest response in terms of core 2 is item number 1 stating that their school ensures that lighting, computers, projectors, air conditioning, fans, and other peripheral equipment are turned and plugged off when not in use while item number 4 has the least response stating that their school has renewable energy technology such as solar panels being installed in windows or roofing. In reference to the study of Marcus (2012), the school has the responsibility of reducing the use of at least one resource (water, electricity, paper) and collecting recycled waste of at least three materials (paper, waste, organic waste). The next table deals with how the schools are incorporating *Gulayan sa Paaralan* and greening activities.

Table 4. *Green Healthy Space*

Item	Statements	WM	Description
1	The school participates in organic farming and <i>Gulayan sa Paaralan</i> programs.	3.53	Highly Observable
2	The school promotes urban gardening, hydroponics, pot planting and other strategies for limited areas.	3.54	Highly Observable
3	The school has an outdoor garden scaping or a designated green area for instructional use.	3.52	Highly Observable
4	The school designates a specific area as a nursery for endangered species of trees like narra, kamagong, molave, etc.	3.14	Observable
5	The school allows students to participate in tree planting activities that are complying with DENR and DepEd policies.	3.21	Observable
6	The school has allotted study area, eating area and sanitation area for students and teachers in school.	3.23	Observable
7	The school designates a specific place for garbage bins and pits in the campus to promote the Clean and Green Program.	3.27	Highly Observable
Average Weighted Mean		3.32	Highly Observable

The computed AWM of 3.32 in the preceding table suggests that respondents find the implementation of a green healthy space *highly observable*. It only shows that students and teachers must have active participation in the greening of schools (Barr, 2011). The result of this study thus shows that the schools in the division comply with DepEd Order No. 5, s. 2014 or the National Greening Program, which gives emphasis to establishing vegetable gardens, nursery seed banks, and values of vegetables promoting and nutrition for students. Another national memorandum that is complied by the schools is the DepEd Saligan 2022+ addressing the creation of instructional facilities through building fitness parks, addressing water and sanitation problems, putting water in restrooms and hand wash facilities, etc.

Green Healthy Space is important in that it can prevent mental health issues, improve well-being, and aid in the treatment of mental illness (World Health Organization, 2012). Irvine, Warber, and Gaston (2013) agree that having a green healthy space promotes relaxation, positive emotions within the self, and towards the place, and spiritual well-being. The next table focuses on the well-being of learners and teachers.

Table 5. Health and Wellness

Item	Statements	WM	Description
1	DepEd Quezon nurses and/or doctors have a regular visit to the students in school.	3.27	Highly Observable
2	The school has clinic and/or medicine cabinets in every classroom.	2.96	Observable
3	The school has fitness and recreation programs such as Zumba, fun-run, etc.	2.82	Observable
4	The school canteen strictly follows DepEd policies and guidelines on healthy food and beverages choices (DepEd Order 13, s. 2017).	3.43	Highly Observable
5	The school conducts medical check-up, dental mission and vaccination for teachers and students.	2.89	Observable
6	The school has a clean handwashing area with easy access to drinkable tap water for staff and students.	3.05	Observable
7	The school health teacher/ coordinator periodically monitors and checks the height and weight and Body Mass Index (BMI) of students.	3.75	Highly Observable
Average Weighted Mean		3.17	Observable

The computed AWM of 3.17, as it can be seen in the table above, suggests that respondents rated core 4: Health and Wellness to be *observable*. This may be due to the current green school practices under Core 4, Oplan Kalusugan (OK) sa DepEd Program that was launched by Secretary Leonor Magtolis Briones which ensure that children in schools can benefit from basic primary health and dental care. The relevance of having a strong health and wellness program such as the earlier-mentioned one will guarantee students and teachers a healthy mind and body. In fact, the 1987 Philippine Constitution guarantees that the government must promote and protect the physical, intellectual, psychological, and social well-being of its citizens, including the youth (Article 13, Section 11).

Tepas (2013) finds that students' health knowledge is higher in schools that provide health/fitness programs than those that do not. Therefore, the school will be the ideal setting to make a positive impact on students' and teachers' health and wellness. It is thus important for students to be in a healthy environment and practice healthy living (SEAMEO-INNOTECH, 2014). The next table explains how the respondents assess the environmental literacy of the teachers and learners.

Table 6. Environmental Literacy

Item	Statements	WM	Description
1	The school teaches environmental literacy and education for sustainability.	3.41	Highly Observable
2	Students' submitted projects are required to be made of indigenous and recycled materials.	3.17	Observable
3	The School Improvement Plan (SIP) includes energy conservation and environmental protection.	3.36	Highly Observable
4	The school undergoes Learning Action Cell (LAC) sessions for Green School Practices.	3.08	Observable
5	The school conducts a field trip or day tour on zoos, laboratories, science museums and areas where environmental literacy can be enhanced.	2.89	Observable
6	The school improvement plan addresses sustainability measures and targets.	3.32	Highly Observable
7	Environmental literacy is integrated with the activities that students make in their subjects.	3.14	Observable
Average Weighted Mean		3.20	Observable

The computed AWM of 3.20 in Table 6 suggests that respondents find core 5: Environmental Literacy to be *observable* in their respective schools. This supports DepEd Order No. 52 s. 2011 or Strengthening Environmental Education in Public and Private Schools, which stipulates that public and private schools shall undertake activities such as: intensifying lessons on environmental concerns. If students are oriented on environmental education, they can take the responsibility of conserving and protecting the environment (Nunez and Clores, 2017). The next table explains how the schools implement their Disaster, Risk Reduction, and Management activities.

Table 7. Preparedness, Safety, and Security

Item	Statements	WM	Description
1	Simultaneous and regular fire drill and earthquake drill are conducted in school.	3.84	Highly Observable
2	The school has Disaster-Risk Reduction Management (DRRM) corner/ bulletin.	3.33	Highly Observable
3	As part of the DRRM corner, the school has emergency/survival kit in every classroom.	2.89	Observable
4	Exit routes are clear to facilitate the safe evacuation in case of fire or another emergency.	3.35	Highly Observable
5	Fire extinguishers are regularly refilled and/or replenished.	2.87	Observable
6	Flammable and hazardous materials are limited, isolated, eliminated, or secured.	3.23	Observable
7	School Map shows vulnerabilities and resources such as signage of entrances and exits, emergency assembly area, visitor check-in point, building evacuation routes, hazardous materials locations, fire suppression equipment locations, first aid staging area, and special lanes for individuals with disabilities and young children.	3.35	Highly Observable
Average Weighted Mean		3.27	Observable

As it can be seen in Table 7, the computed AWM of 3.27 demonstrates that respondents find *observable* the requirements for core 6: Preparedness, Safety, and Security. The results are in line with the study of Merchant (2015) which stresses that disaster risk education reduction education is present within the curriculum framework, but there are still many elements from the UNICEF/UNESCO best practices checklist not being fulfilled. Disaster Risk Reduction should be systematically treated across the curriculum and through the grade levels. Additionally, teacher profession-

als' development in disaster risk reduction also needs advancement (UNESCO & UNICEF, 2012). The next table shows the schools' ability to have linkages and networks.

Table 8. *Linkages and Networks*

Item	Statements	WM	Description
1	The school has alliances or partnership with LGUs, NGOs and other groups that promote the greening of schools in all communities.	3.41	Highly Observable
2	The school promotes the involvement of the community in tree planting in identified tree-less areas, riverbanks, and other flood prone areas with proper coordination from LGU.	3.00	Observable
3	The community organizes symposiums and seminars for students on how to effectively practice waste segregation by designating receptacles for biodegradable and non-biodegradable waste for proper collection and disposal.	2.97	Observable
4	The school invites resource speakers and speaker from DENR and other related agencies that provide proper training in recycling and composting.	2.17	Seldom Observable
5	The school participates in reforestation in an organized manner with support from DENR, LGU and school officials.	3.69	Highly Observable
6	The school has a council consisting of pupils, teachers and parents' representatives that will promote the school's greening program.	3.20	Observable
7	The school receives donations in cash or in kind from their industry partners during <i>Brigada Eskuwela</i> and other fund-raising activities.	3.47	Highly Observable
Average Weighted Mean		3.13	Observable

In this final table, the computed AWM of 3.12 shows that respondents find core 7: Linkages and Networks to be *observable*. This implies that community support in the schools plays a large role in the school's success. As stated by Marcus (2012), school is required to engage in projects and activities for the sake of the community in increasing awareness of the quality of environment-related matters and causing behavioral change.

The data revealed that the respondents report a *highly observable* response on item numbers 1 5, and 7 with a weighted mean of 3.41, 3.69, and 3.47 respectively . This supports DepEd Memorandum 43 s. 2017, DM 66, 2018, and DM

36, s. 2019 calling for the National Schools Maintenance Week with the objective of bringing stakeholders to devote their resources, time, and effort to the repair of school facilities in preparation for the opening of the new school year. It has been noted that the conduct of Brigada Eskwela and other activities involving stakeholders are implemented year-round.

4.2 Proposed framework for a sustainable development program on green Schooling

Prior literature relevant to the previous study indicates that green school practices are growing across countries. Nevertheless, the result of the survey indicates the most common green school practice implemented is Green Healthy Space (gardening), while the least is Resources Sustainability (waste management).

Providing a conducive environment for students makes learning more enjoyable and meaningful (Oestar, 2016). Considering the findings above and those of Robles and Verana's (2012) environmental advocacy framework, UNESCO's Sustainable Development Goals, McLennan's Philosophy on Sustainable Design, Saligan 2020+, a Sustainable Development Program on Green Schooling within the four congressional districts of Quezon Province is proposed. It must be noted that the concept of sustainable development program in this paper is significantly anchored on DepEd's new flagship program Saligan 2022+ or Mga Adhikain sa Mapagpalayang Edukasyon (The OUA 5-Year Master Plan), guidelines on the National Search for Sustainable and Eco-Friendly Schools, UNESCO's Sustainable Development Goals and Green Recovery and Reconstruction: Training Toolkit for Humanitarian Aid (2010) of UNESCO Green Schools Asia.

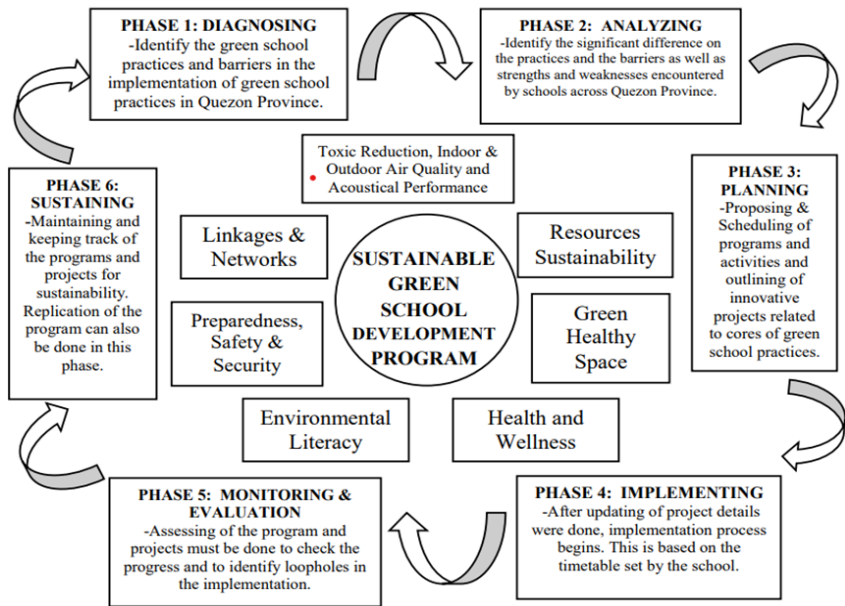


Figure 1. Schematic Diagram Showing the Process Involved in the Making of a Sustainable Green School Development Program

On account of the result discussed above, a sustainable green school development program is proposed as pictured in Figure 1. The diagram revolves around the concept of sustainability of the seven main cores of green school development. As seen from the diagram, each of the cores is interrelated and therefore must be strengthened at the same time to ensure that total school sustainability is achieved. The arrows show the chronological phases and interrelationship of activities in the making of a sustainable green school development program. It starts with the Diagnosing phase or the identification of the green school practices and barriers in the implementation of green school practices in Quezon Province. Analyzing phase or the identification of the significant difference in the practices and the barriers follows as well as strengths and weaknesses encountered by schools across Quezon Province. The Planning phase refers to the proposing and scheduling of programs and activities and outlining of innovative projects related to cores of green school practices. Implementing phase involves the actual implementation of the program. The Monitoring and Evaluation phase happens when the assessment of the program and projects are done to check the progress and to identify loopholes in the implementation and lastly, the Sustaining phase happens

when the programs and projects are maintained, strengthened, and replicated. The end goal is reflected in the outcome and quality of the school and the learners as products.

5. CONCLUSION AND RECOMMENDATIONS

This study on green school practices focused on the extent of implementation of green schooling in Quezon Province by examining the schools' adherence to the seven cores to go green programs. Using the descriptive-comparative design, this study was conducted in the selected secondary schools in DepEd Quezon representing four congressional districts with selected teacher-coordinators as respondents. Participants were asked to answer a forty-nine-item green school practices questionnaire.

Findings show that Green Healthy Space is the most common green school practice in DepEd Quezon due to the existing policies on *Gulayan sa Paaralan*, School Inside A Garden (SIGA) Program, National Greening Program, and others, while Resources Sustainability is their weakness due to unsustainable production, consumption and maintenance of school resources (see Table 2). Based on these findings, the Sustainable Green School Development Program is designed to serve as a potent tool for raising awareness on the different cores of green school practices and strengthening the sustainability of the programs.

The findings of the study may be a good basis for DepEd top management in identifying the status of green school practices in secondary schools in Quezon Province for a more localized implementation in their respective schools. Through the sustainable development program, the communities' awareness of the quality of environment-related matters can cause a behavioral change (increasing recycling, ongoing care of neglected areas, promoting green healthy spaces, etc.) within the locality to which the schools belong.

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ABSTRAK

Tinukoy sa pananaliksik na ito ang mga green school practices at go green programs sa Quezon Province para sa layuning makabuo ng sustainable green school development program. Isang quantitative na pananaliksik na gumamit ng descriptive-comparative design, labing-anim na paaralang sekondarya, 112 na mga guro at mga punongguro ang naging kalahok at nagsagot ng survey-questionnaire. Weighted mean at analysis of variance (ANOVA) ang ginamit upang ma-proseso ang mga datos. Ipinapakita ng mga resulta na ang pinaka karaniwang mga gawain sa luntiang paaralan ay Green Healthy Space (paghahalaman) habang ang pinaka madalang naman ay Resources Sustainability (pamamahala ng basura). Isang sustainable development program ang iminungkahi upang matugunan ang naiulat na kawalan ng pagpapanatili ng mga green school programs sa lalawigan. Iminumungkahing ito ay gawing batayan ng mga namamahala sa DepEd para sa pagpapatupad ng mga polisiya na may kaugnayan sa kapaligiran (hal., pagpapalawig ng recycling, pangangalaga ng mga napabayaang lugar, pagtataguyod ng luntian at malusog na es- pasyo, atbp.) sa loob at kapaligiran ng paaralan.

Mga Susing Salita: gawain sa luntiang paaralan, napapanatiling pag-unlad, green school program