American Journal of Education and Technology (AJET)

ISSN: 2832-9481 (ONLINE)

VOLUME 5 ISSUE 4 (2026)



PUBLISHED BY

E-PALLI PUBLISHERS, DELAWARE, USA

American Journal of Education and Technology (AJET)

Volume 5 Issue 4, Year 2026
ISSN: 2832-9481 (Online)
DOI: https://doi.org/10.54536/ajet.v5i4.8900
https://journals.e-palli.com/home/index.php/ajet

Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners

Genevieve O. Zuniga[1*]

Article Information

Received: August 07, 2026
Accepted: October 24, 2026
Published: November 07, 2026

Keywords

Ecoliteracy Skills, Environmental, Philippines, Stewardship Practices, Teachers In Public Elementary Schools

ABSTRACT

This study was conducted to determine the relationship between environmental stewardship practices of teachers and ecoliteracy skills of Grade Six learners in public elementary schools in Maa District, Division of Davao City. The study used a non-experimental quantitative research design utilizing correlational method. The respondents of this study are composed of 47 grade six teachers in public elementary schools using a universal sampling. However, each respondent chose three grade six learners since they were the target of the study. The statistical tols used were Mean, Pearson Product Moment Correlation Coefficient (Pearson r), and Regression Analysis. The findings revealed that the teachers achieved a high level on environmental stewardship practices. Meanwhile, grade six learners established a high level of ecoliteracy skills. There was a significant relationship between environmental stewardship practices of teachers and ecoliteracy skills of grade six learners in public elementary schools. The domains of environmental stewardship practices of teachers were significantly influenced by the ecoliteracy skills of grade six learners. It is articulated in this study that ecoliteracy skills of grade six learners should be raised at a very high level. It was concluded that the high level of environmental stewardship practices of teachers would also increase the ecoliteracy skills of grade six learners.

INTRODUCTION

To maintain Earth's life support systems while meeting human needs, current and future citizens must be prepared to make sound decisions about the environment at all levels- from local to global. These decisions range from simple, everyday lifestyle choices to major decisions about environmental management, development, restoration, and regulation. To make these decisions, people must be equipped with the tools of environmental citizenship, including the knowledge, skills and attitudes needed to identify their values and goals with respect to the environment and to act accordingly, based on the best knowledge of choices and consequences. A citizenry that is able and willing to apply science to environmental issues is essential if we are to make decisions and create policies that will uphold the vital ecosystems that sustain us.

Globally, ecoliteracy concerns understanding the principles of organization of ecosystems and their potential application to understanding how to build a sustainable human society. It combines the sciences of systems and ecology in drawing together elements required to foster learning processes toward a deep appreciation of nature and our role in it. Ecoliteracy is the power that comes from the knowledge and consciousness of how nature's living systems operate. To be ecoliterate means understanding the principles of organization of ecological communities, collaboration, and using these principles for creating sustainable human communities (Coyle, 2005).

In the Philippines, an integral component of environmental citizenship is ecological understanding, or a working knowledge of key ecological concepts and the process of ecological science. As stakeholders in their environment and the environment of future generations, individuals must understand the links between ecosystems and human welfare, as well as the scientific evidence and potential risks that factor into the environmental decision-making process. While numerous factors contribute to societal action, or inaction, with respect to environmental issues, ecological understanding is essential for public support of and/or involvement in sound environmental decisions, in addition to myriad political, economic, cultural, and spiritual considerations (Garcia & Cobar-Garcia, 2016).

In the District of Maa, Division of Davao City, there has been a challenge on how their learners understand the natural system that is related to our life. It seems that some of the learners were not particular in taking care of our earth like the proper disposal of garbage, empathy for all forms of life etc. Learners must look beyond recycling and energy conservation to larger complexities that create a situation "where our daily activities are destroying the global systems that maintain life on our planet. A good ecological literacy is something that is a must for every person in the world. Ecoliteracy is highly important to be applied in teaching-learning activity (Supera, 2019).

It is in this premise that the researcher conducted the study to find out if Ecoliteracy Skills of Grade Six Learners in Public Elementary Schools of Maa District, Division of Davao City is being affected by Environmental Stewardship Practices of Teachers. Despite the importance of environmental stewardship and ecoliteracy in education, it remains necessary to

[1] Shanghai 1, Matina Aplaya, Davao City, Philippines
[*] Corresponding author's e-mail: Zgenevieve26@gmail.com

examine the relationship between teachers' environmental stewardship practices and the ecoliteracy skills of Grade Six learners in Maa District, Division of Davao City. This study therefore investigated the relationship between these two variables in selected public elementary schools.

LITERATURE REVIEW

This section reviews related literature on the environmental stewardship practices of teachers and the ecoliteracy skills of Grade Six learners. It focuses on the concepts and indicators that help explain the importance of environmental responsibility and ecoliteracy in education.

Environmental Stewardship Practices

Environmental stewardship involves using and managing natural resources responsibly while considering the needs of present and future generations. It also emphasizes the importance of protecting other living organisms and maintaining environmental balance (BC Hydro, 2013; Lavoie, 2014). Williams and Ponsford (2009) identified four important aspects of environmental stewardship: recycling, conservation, regeneration, and restoration.

Recycling: Recycling involves collecting and processing discarded materials so they can be used to produce new items (Salerno *et al.*, 2013). This practice helps reduce waste, conserve natural resources, and limit pollution. Robinson (2014) and Self *et al.* (2010) also emphasized that recycling reduces the need to extract and process raw materials, which can help save energy and lessen greenhouse gas emissions. Through recycling, individuals can contribute to keeping their surroundings clean and reducing environmental harm.

Conservation: Conservation focuses on protecting natural resources and using them wisely to prevent depletion and environmental damage. It includes simple actions, such as switching off unused lights, saving water, and protecting plants and wildlife (Appiah-Opoku, 2007; Wong, 2008; Worrell & Appleby, 2000). These practices encourage responsible resource use and help preserve the environment for future generations.

Regeneration: Regeneration refers to the natural recovery or renewal of ecosystems following environmental damage. It supports biodiversity, strengthens the ability of ecosystems to recover from disturbances, and benefits communities that depend on natural resources (Álvarez-Romero *et al.*, 2011; Asah & Blahna, 2012). O'Callaghan (2006) further explained that regeneration requires long-term commitment, appropriate scientific knowledge, and community participation. These efforts are important in helping damaged environments recover and remain productive.

Restoration: Environmental restoration involves helping ecosystems recover after being damaged, degraded, or destroyed (Asah *et al.*, 2012). It may include repairing damaged habitats and addressing the effects of harmful human activities. Ayers and Kittinger (2014) and Ban *et al.* (2013) emphasized that restoration aims to recover ecological conditions and functions. While conservation focuses on preventing further environmental damage, restoration addresses damage that has already occurred.

Ecoliteracy Skills

Ecoliteracy involves understanding the environment, recognizing environmental problems, and developing the ability to make responsible decisions that support ecological well-being. Payne (2003) highlighted the importance of environmental learning in developing learners' awareness and concern for the Earth. Similarly, Diamond (2005) emphasized the role of education in helping individuals understand and support environmental conservation. Mueller (2009) identified four key dimensions of ecoliteracy: knowledge, competencies, sense of place, and respect for the environment.

Knowledge: Environmental knowledge refers to understanding ecological principles, environmental issues, and the effects of human activities on nature. Krathwohl (1992) identified knowledge as an important component of environmental literacy. Jordan *et al.* (2009) also emphasized the value of understanding ecological processes and the relationship between human societies and their environment.

Competencies: Competencies involve the skills needed to understand environmental problems, evaluate possible solutions, and make responsible decisions. Marzano and Kendall (2007) highlighted the importance of scientific reasoning, ethical judgment, and social skills in addressing complex issues. Mepham (2000) also emphasized self-regulated learning, which enables individuals to adapt to new information and changing circumstances. These competencies help learners respond thoughtfully to environmental challenges.

Sense of Place: Sense of place refers to the connection people develop with their surroundings and their understanding of how local and global environments are linked. Pike *et al.* (2008) emphasized the importance of recognizing these environmental connections. Ratcliffe and Grace (2003) highlighted the value of developing a positive relationship with nature, while Rickinson *et al.* (2009) stressed that people should recognize their ability to make a positive difference in their communities. Developing this connection can encourage learners to take greater responsibility for their surroundings.

Respect for the Environment: Respect for the environment involves recognizing the value of living organisms, biodiversity, and the well-being of present and future generations. Zeidler and Nichols (2009) emphasized the importance of ethical responsibility and respect for biological and cultural diversity. Stables and Bishop (2001) discussed the need to consider the relationship between human interests and the well-being of ecosystems. Similarly, Orr (1992) highlighted the responsibility to consider the quality of life of future generations when making decisions about the

environment. This perspective encourages individuals to act responsibly and consider the wider effects of their choices.

Synthesis

The reviewed literature highlights the importance of environmental stewardship and ecoliteracy in promoting environmental responsibility. Environmental stewardship involves the responsible use and protection of natural resources, considering the needs of society, future generations, and other living organisms. It also emphasizes that everyone has a role in protecting the environment through responsible actions and sustainable practices.

Ecoliteracy, on the other hand, helps learners understand environmental issues and develop the knowledge, skills, and attitudes needed to protect nature. Integrating ecoliteracy into teaching and learning can encourage learners to become more aware of environmental problems and make responsible choices. These ideas highlight the importance of teachers in promoting environmental awareness and helping learners develop practices that support environmental sustainability.

Theoretical and Conceptual Framework

This study is anchored in the perspective of Johnson and Mappin (2005), who emphasized the importance of teachers demonstrating responsible environmental practices to develop learners' environmental awareness. Through conservation and other sustainable practices, teachers can serve as role models and encourage learners to develop ecoliteracy skills.

Similarly, Hager (2015) emphasized that environmental awareness and responsible action should begin with teachers, particularly because their practices can influence how learners understand and respond to environmental concerns. Hui (2014) also highlighted the importance of developing environmental awareness among elementary learners to encourage actions that protect nature. These perspectives suggest that ecoliteracy education is more meaningful when teachers demonstrate environmental responsibility through their own actions.

Figure 1 presents the conceptual framework of the study, showing the relationship between independent and dependent variables. The independent variable is the Environmental Stewardship Practices of Teachers, measured through four indicators: recycling, conservation, regeneration, and restoration, as identified by Williams and Ponsford (2009). The dependent variable is the Ecoliteracy Skills of Grade Six Learners, assessed through four indicators: knowledge, competencies, sense of place, and respect for the environment, based on Mueller (2009). The framework illustrates how teachers' environmental stewardship practices may be related to learners' ecoliteracy skills.

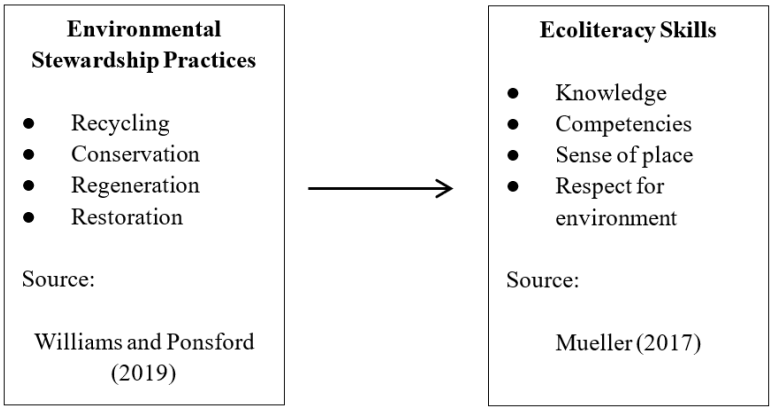


Figure 1: Conceptual Framework showing the Variable of the study.

Statement of the Problem

The main purpose of this investigation was to determine the level of Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners during the school year 2020-2021. Specifically, it sought to answer the following questions:

• What is the degree of Environmental Stewardship Practices of Teachers in Maa District in terms of:

1, recycling;
2. conservation;
3. regeneration; and
4. restoration?

• What is the level of Ecoliteracy Skills of Grade Six Learnersin Maa District in terms of:

1. knowledge;
2. competencies;
3. sense of place; and
4. respect for environment?

• Is there a significant relationship between Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners?

• Do the domains of Environmental Stewardship Practices of Teachers have a significant influence on Ecoliteracy Skills of Grade Six Learners?

Hypotheses

The null hypotheses were tested at 0.05 level of significance:

Ho1: There is no significant relationship between the Environmental Stewardship Practices of Teachers and

Ecoliteracy Skills of Grade Six Learners.

Ho2: None of the domains of Environmental Stewardship Practices of Teachers significantly affect Ecoliteracy Skills of Grade Six Learners.

The result of this study would be beneficial to the following:

Department of Education Officials: The results of the study may be used as a basis in the formulation of policies, plans and programs to improve the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners. It may improve insights on what programs/activities are needed to prioritize and to be implemented to stimulate the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners.

School Heads: The outcome of this study may help them understand the teachers as a whole person. A better understanding of the needs and expectations of teachers may guide the school administrators in formulating policies and drawing school programs that would respond to the teachers' needs and aspirations. Thus, this could be the basis in developing strategies and formulating policies towards development of the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners.

Teachers: The findings of the study may help them determine how to improve the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners. In addition, this study would contribute to the teachers' teaching effectiveness and build a trusting and creative atmosphere that is conducive to the attainment of the goals of the organization.

Future Researchers: This study is indispensable to better understand the significant relationship between Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners that play a great role in instructional improvement. This study would also encourage other researchers to determine other factors that would have a big impact on Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners.

To make this research more comprehensive to the readers, the following terms are operationally and conceptually defined.

Environmental Stewardship: Refers to responsible use and protection of the natural environment through conservation and sustainable practices. According to BC Hydro (2013), Environmental Stewardship means as the responsible use (including conservation) of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species, as well as of private needs, and accepts significant answerability to society.

Ecoliteracy Skills: Refer to the ability to understand the natural systems that make life on earth possible. According to Center for Ecoliteracy (2016), Environmental Stewardship means as the responsible use (including conservation) of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species, as well as of private needs, and accepts significant answerability to society.

MATERIALS AND METHODS

Presented in this chapter are the research design, research respondents, the instruments, the data gathering procedures, and data analysis of the data and other sources of information and data treatment on Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners.

Research Design

This study used the non-experimental quantitative design utilizing the correlation method. This method was used when the objectives described the status of the situation as it existed at the time of the study to explore the causes of phenomena. In correlation research, it involves collecting data in order to determine whether the degree of a relationship exists between two or more quantifiable variables (Travers, 2006).

Quantitative research design is aimed at discovering how many people think, act, or feel in a specific way. The quantitative method involves large sample sizes, concentrating on the quantity of responses, as opposed to gaining more focused or emotional insight. The standard format in quantitative design is for each respondent to be asked the same questions, which ensures that the entire data sample can be analyzed fairly. The data is supplied in a numerical format and can be anbalyzed in a quantifiable way using statistical methods. Surveys can, however, be tailored to branch off if the respondent answers in a certain way, for instance people who are satisfied or dissatisfied with a service may be asked different questions subsequently.

The descriptive survey dealt with quantitative data about the said phenomenon. The quantitative aspect is an appropriate schedule for gathering data that would be designed for the target respondent to answer the questions. The process of gathering data was based on the use of questionnaires. The focus of the study was to determine the relationship between Environmental Stewardships Practices of Teachers and Ecoliteracy Skills of Grade Six Learners of Maa District, Division of Davao City.

Research Respondents

This study was conducted in the District of Maa. This includes the 7 schools in Maa District. There were 47 grade six teachers who were involved as respondents of the study, who rated the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners. However, each respondent chose three grade six learners since they were the target of the study. This was conducted during the school year 2020–2021. A universal sampling was employed in the selection of respondents.

The following samples were taken: 4 in Josefa Llanes Escoda Elementary Schoo, 10 in Kabacan ES, 2 in

Langub ES, 17 in Maa Central ES, 3 in Magtuod ES, 5 in Matina ES, and 6 in SIR Matina ES.

Research Instrument

This studv used the researcher-made test and was validated by three experts. They are all Doctor of Educational Management. After the validation, the researcher administered the test for pilot testing in Matina Central Elementary School, Matina District, Division of Davao City. The pilot-test data yielded a Cronbach's alpha coefficient of 0.831 across 40 items (standardized Cronbach's alpha = 0.823), indicating acceptable internal consistency according to commonly used guidelines. The item-level statistics should also be checked against the original questionnaire and dataset because several items showed negative or low-corrected item-total correlations. These item-level findings do not, by themselves, establish that the instrument is invalid; the scoring and data coding should be verified before the results are finalized.

This research included the construction and validation of the questionnaire. It is made up of two parts. Part I dealt with the Environmental Stewardship Practices of Teachers with the following indicators: recycling, conservation, regeneration, and restoration. Five-point Likert Scale was used for Environmental Stewardship Practices. Each item was assigned to certain weights, and equivalent statements were as follows:

Table 1: Weights, and Equivalent statements

Range of Means	Level	Description
4.20 - 5.00	Very High	This means that the Environmental Stewardship Practices of Teachers are always manifested.
3.40 - 4.19	High	This means that the Environmental Stewardship Practices of Teachers are oftentimes manifested.
2.60 - 3.39	Moderate	This means that the Environmental Stewardship Practices of Teachers are sometimes manifested.
1.80 - 2.59	Low	This means that the Environmental Stewardship Practices of Teachers are rarely manifested.
1.00 - 1.79	Very Low	This means that the Environmental Stewardship Practices of Teachers are not/never manifested.

Part II is the researcher-made test of Ecoliteracy Skills of Grade Six Learners which indicated the following: knowledge, competencies, sense of place, respect for environment. To determine the level of Ecoliteracy Skills, the Five-point Likert Scale was used. Each item was assigned to certain weights, and equivalent statements were as follows:

Table 2: Weights, and Equivalent statements

Range of Means	Level	Description
4.20 - 5.00	Very High	This means that the Ecoliteracy Skills of Grade Six Learners are always manifested.
3.40 - 4.19	High	This means that the Ecoliteracy Skills of Grade Six Learners are oftentimes manifested.
2.60 - 3.39	Moderate	This means that the Ecoliteracy Skills of Grade Six Learners are sometimes manifested.
1.80 - 2.59	Low	This means that the Ecoliteracy Skills of Grade Six Learners are rarely manifested.
1.00 - 1.79	Very Low	This means that the Ecoliteracy Skills of Grade Six Learners are not/never manifested.

Research Procedure

The data were gathered through the following procedures: The researcher asked the approval of the endorsement from the dean of graduate school. A letter of permission was secured to conduct the study for the level of Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners. Upon approval, the researcher prepared the letter addressed to the Schools Division Superintendent of Davao City, District Supervisor, and Principals.

The researcher modified the questionnaire intended for each variable. The Adviser reviewed the questionnaire before it was produced for validation. Then, the researcher submitted the questionnaire to the adviser for the final version and revision. The adviser gave a go-signal to the researcher to produce the survey questionnaire adequate and clear copies were printed to avoid problems with the administration. The researcher administered the questionnaires personally to the respondents online to the schools included in the study. Upon Approval of the

school administrator, the teachers gathered and oriented about the purpose of the study. The teacher-respondents requested to answer the questionnaire honestly so that valid and reliable data will be elicited. One hundred percent (100%) of the questionnaire was retrieved. The results were collated and tabulated before they were submitted for statistical treatment. Results were analyzed and interpreted based on the purpose of the study. Health and safety protocols like social distancing, online survey floating, and retrieval of questionnaires, etc., were observed.

Data Analysis and Tools

The following statistical tools were used in the study:

Mean: This was employed to determine the level of Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners.

Pearson Product Moment Coefficient of correlation (r): This was used to determine the relationship between the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners.

Regression Analysis: This was used to determine the significant influence of Environmental Stewardship Practices of Teachers on Ecoliteracy Skills of Grade Six Learners.

RESULTS AND DISCUSSION

Introduced in this chapter are the results and discussions on the findings based on the survey questionnaire gathered from the respondent's study which is the level of Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners of Maa District, Davao City. They are analyzed, interpreted, and discussed thoroughly.

Environmental Stewardship Practices of Teachers in terms of Recycling

Shown in Table 3 is the level of Environmental Stewardship Practices of Teachers in terms of Recycling. The result is focused on the highest and lowest mean ratings of indicators which are as follow: refining and processing raw materials all of which create substantial air and water pollution (4.14), reducing the amount of waste sent to landfills and incinerators (4.10), and collecting and processing materials that would otherwise be thrown away as trash and turning them into new products (4.06).

The overall mean rating of Environmental Stewardship Practices of Teachers in terms of Recycling is 4.11 or high. This means that the level of Environmental Stewardship Practices in terms of Recycling is oftentimes manifested by the teachers. This indicates that teachers can reduce the need to collect new raw materials; and conserve natural resources and increase economic security by tapping a domestic source of materials.

Table 3: Environmental Stewardship Practices of Teachers in terms of Recycling

No.	Statements	Mean	Descriptive Equivalent
1.	Collects and processes materials that would otherwise be thrown away as trash and turning them into new products	4.06	High
2.	Reduces the amount of waste sent to landfills and incinerators	4.11	High
3.	Conserves natural resources and increases economic security by tapping a domestic source of materials	4.12	High
4.	Reduces the need to collect new raw materials	4.09	High
5.	Refines and processes raw materials all of which create substantial air and water pollution	4.15	High
	Overall Mean	4.11	High

The result corresponds to the statement of Salerno *et al.* (2013), who accentuated that Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling can benefit your community and the environment. The finding is supported with the view of Self *et al.* (2010), who opined that Recycling reduces the need for extracting (mining, quarrying and logging), refining and processing raw materials all of which create substantial air and water pollution. As recycling saves energy, it also reduces greenhouse gas emissions, which helps to tackle climate change.

Conservation

Reflected in Table 4 is the level of Environmental Stewardship Practices of Teachers in terms of Conservation. The results ranged from highest to lowest mean ratings of indicators which are as follow: saving of energy by any means including energy efficiency (4.14), preserving physical quantity during transformations or reactions (4.09), and preventing natural things such as animals, plants, forests etc. from being spoiled or destroyed (4.05).

Table 4: Conservation

No.	Statements	Mean	Descriptive Equivalent
1.	saves of energy by any means including energy efficiency.	4.14	High
2.	turns lights off when not in use.	4.11	High
3.	preserves physical quantity during transformations or reactions.	4.09	High
4.	protects plants and animals, natural areas, and interesting and important structures and buildings, especially from the damaging effects of human activity.	4.07	High
5.	prevents natural things such as animals, plants, forests etc. from being spoiled or destroyed.	4.05	High
	Overall Mean	4.09	High

The overall mean rating of Environmental Stewardship Practices of Teachers in terms of Conservation is 4.09 or high. This means that the level of Environmental Stewardship Practices in terms of Conservation is oftentimes manifested by the teachers. This indicates that teachers are able to protect plants and animals, natural areas, and interesting and important structures and buildings, especially from the damaging effects of human activity; and turn lights off when not in use.

The result is in line with the idea of Appiah-Opoku (2007), who cited that conservation is the protection of plants and animals, natural areas, and interesting and important structures and buildings, especially from the damaging effects of human activity. It is also the protection of natural things such as animals, plants, forests etc, to prevent them from being spoiled or destroyed. This is congruent to the view of Worrell and Appleby (2000), who opined that conservation is a careful preservation and protection of something especially, planned management of a natural resource to prevent exploitation, destruction, or neglect water conservation wildlife conservation. Further, conservation is the preservation of a physical quantity during transformations or reactions.

Regeneration

Displayed in Table 5 is the level of Environmental Stewardship Practices of Teachers in terms of Regeneration. The results logically arranged from highest to lowest mean ratings of indicators which are as follow: showing the ability of an ecosystem to recover from damage (4.09), recovering from minor disturbances (4.06), and demonstrating resilience, adapting and recreating landscapes where wildlife and people can thrive (4.01).

Table 5: Regeneration

No.	Statements	Mean	Descriptive Equivalent
1.	shows the ability of an ecosystem to recover from damage.	4.09	High
2.	rebuilds biodiversity and supports communities.	4.07	High
3.	demonstrates resilience, adapts and recreates landscapes where wildlife and people can thrive.	4.01	High
4.	recovers from minor disturbances.	4.06	High
5.	ensures renewal, restoration and tissue growth that makes genomes, cells, organisms, and ecosystems resilient to natural fluctuations or events that cause of disturbance or damage.	4.04	High
	Overall Mean	4.05	High

The overall mean rating of Environmental Stewardship Practices of Teachers in terms of Regeneration is 4.05 or high. This means that the level of Environmental Stewardship Practices in terms of Regeneration is oftentimes manifested by the teachers. This indicates that teacher is able to ensure renewal, restoration and tissue growth that makes genomes, cells, organisms, and ecosystems resilient to natural fluctuations or events that cause of disturbance or damage; and rebuild biodiversity and support communities.

The result matches the view of Álvarez-Romero *et al.* (2011), who observed that regeneration is the ability of an ecosystem specifically, the environment and its living population to recover from damage. By regenerating all of these landscapes, both biodiversity and communities can benefit. However, doing this effectively takes a careful combination of scientific understanding and community consultation and participation. This is congruent to the statement of Callaghan (2019), who noted that Regeneration is a long-term process that can take a

generation to come to fruition. To be successful involves understanding the methods that work for each type of landscape, regenerating a mangrove forest works very differently to regenerating a lake.

Restoration

Shown in Table 6 is the level of Environmental Stewardship Practices of Teachers in terms of Restoration. The presentation focused on the highest, middle, and lowest mean ratings of indicators which are as follow: assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed (4.07), repairing sites in nature whose biological communities and ecosystems have been degraded or destroyed. (4.03), and seeking to return to an earlier state or to another state that is closely related to one unaltered by human activities (4.01).

Table 6: Restoration

No.	Statements	Mean	Descriptive Equivalent
1.	assists the recovery of an ecosystem that has been degraded, damaged, or destroyed.	4.07	High
2.	recreates, initiates, or accelerates the recovery of an ecosystem that has been disturbed.	4.02	High
3.	repairs sites in nature whose biological communities and ecosystems have been degraded or destroyed.	4.03	High
4.	repairs the damage of human activities have caused to natural ecosystems	4.04	High
5.	seeks to return to an earlier state or to another	4.01	High
	Overall Mean	4.03	High

The overall mean rating of Environmental Stewardship Practices of Teachers in terms of Restoration is 4.03 or high. This means that the level of Environmental Stewardship Practices in terms of Restoration is oftentimes manifested by the teachers. This indicates that teachers are able to repair the damage human activities that have caused to natural ecosystems; and recreate, initiate, or accelerate the recovery of an ecosystem that has been disturbed.

The finding matches-up with the ideas of Ban *et al.* (2013), who expounded that Ecological restoration focuses on repairing the damage human activities have caused to natural ecosystems and seeks to return them to an earlier state or to another state that is closely related to one unaltered by human activities. Ecological restoration is distinguished from the practice of conservation, which is primarily concerned with preventing further losses to ecosystems. This corresponds to the viewpoint of Asah *et al.* (2012), who elucidated that ecological restoration is the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed. Ecological restoration aims to recreate, initiate, or accelerate the recovery of an ecosystem that has been disturbed. Disturbances are environmental changes that alter ecosystem structure and function.

Summary of Environmental Stewardship Practices of Teachers

Reflected in Table 7 is the Summary of Environmental Stewardship Practices of Teachers in terms of recycling, conservation, regeneration, and restoration. The mean ratings of these indicators are as follows: recycling (4.11), conservation (4.09), regeneration (4.05), and restoration (4.03). The overall mean rating of Environmental Stewardship Practices of Teachers in terms of recycling, conservation, regeneration, and restoration is 4.07 or high. This means that the level of Environmental Stewardship Practices of Teachers in terms of recycling, conservation, regeneration, and restoration is oftentimes observed by the teachers. This implies that the teachers are able to refine and process raw materials all of which create substantial air and water pollution; save of energy by any means including energy efficiency; show the abity of an ecosystem to recover from damage; and assist the recovery of an ecosystem that has been degraded, damaged, or destroyed.

Table 7: Summary of Environmental Stewardship Practices of Teachers

No.	Statements	Mean	Descriptive Equivalent
1.	Recycling	4.11	High
2.	Conservation	4.09	High
3.	Regenration	4.05	High
4.	Restoration	4.03	High
Overall Mean		4.07	High

The result is similar to the view of Lavoie (2014), who cited that environmental stewardship is the responsible management of human activity affecting the natural environment to ensure the conservation and preservation of natural resources and values for the sake of future generations of human and other life on the planet, together with the acceptance of significant answerability for environment. This is aligned with the statement of Lelenicz and Simoni (2019), who posited that environmental stewardship means taking responsibility for our choices. The responsibility for environmental quality should be shared by all those whose actions affect the environment.

Overall, the findings suggest that environmental stewardship was frequently reported by the participating teachers. These results provide a descriptive basis for examining whether the teachers' reported practices are associated with the ecoliteracy skills reported by their Grade Six learners.

Ecoliteracy Skills of Grade Six Learners in terms of Knowledge

Flaunted in Table 8 is the level of Ecoliteracy Skills of Grade Six Learners in terms of Knowledge. The results ranged from highest to lowest mean ratings of indicators which are as follows: understanding the natural system that makes life on earth possible. (4.11), developing empathy for all forms of life (4.03), and comprehending the principles of organization of ecological communities, collaboration, and using these principles for creating sustainable human communities (4.01).

Table 8: Ecoliteracy Skills of Grade Six Learners in terms of Knowledge

No.	Statements	Mean	Descriptive Equivalent
1.	understands the natural system that makes life on earth possible.	4.11	High
2.	comprehends the principles of organization of ecological communities, collaboration, and using these principles for creating sustainable human communities.	4.01	High
3.	develops empathy for all forms of life.	4.03	High
4.	embraces sustainability as a community.	4.02	High
5.	understands how nature sustains life.	4.05	High
	Overall Mean	4.04	High

The overall mean rating of Ecoliteracy Skills of Grade Six Learners in terms of Knowledge is 4.04 or high. This means that the level of Ecoliteracy Skills in terms of Knowledge is oftentimes manifested by the grade six learners. This indicates that grade six learners can embrace sustainability as a community practice; and understand how nature sustains life.

Competencies

Displayed in Table 9 is the level of Ecoliteracy Skills of Grade Six Learners in terms of Competencies. The results logically arranged from highest to lowest mean ratings of indicators which are as follow: understanding the basic principles of a connected nature and how to live accordingly (4.15), believing that all forms of life are important (4.10), and making responsible decisions that considers individuals' relationships to natural system, communities and future generations (4.03).

Table 9: Comptencies

No.	Statements	Mean	Descriptive Equivalent
1.	Shows concerns to nature because everything is connected to everything else.	4.11	High
2.	Believes that all forms of life are important.	4.10	High
3.	Demonstrates cultivation of emotional and social intelligence as its foundation and expands this foundation to integrate ecological intelligence.	4.07	High
4.	Makes responsible decisions that considers individuals' relationships to natural system, communities and future generations.	4.03	High
5.	Understand the basic principles of a connected nature and how to live accordingly.	4.15	High
	Overall Mean	4.09	High

The overall mean rating of Ecoliteracy Skills of Grade Six Learners in terms of Competencies is 4.09 or high. This means that the level of Ecoliteracy Skills in terms of Competencies is oftentimes manifested by the grade six learners. This indicates that grade six learner can demonstrate cultivation of emotional and social intelligence as its foundation and expand this foundation to integrate ecological intelligence; and show concerns to nature because everything is connected to everything else. The result is similar to the view of Marzano and Kendall (2007), who explicated that consisting of cognitive skills (rather than knowledge), it includes of a variety of pragmatic abilities and manners of thinking, including scientific reasoning, practical ethics and sociopolitical skills, the latter of which will vary considerably across cultures. As these are skills, they all require practice and mental development when nurtured; they contribute to the ability to make reasonable decisions regarding complex, ill-structured problems, which environmental issues usually are. The finding is also similar to the statement of Mepham (2000), who elucidated that incorporating modern research on cognition. The competencies domain also includes self-regulated learning, which encompasses metacognition, motivation, and strategic action. From an ecological perspective, self-regulated learners might be considered cognitively adaptable; they are able to respond to changes.

Sense of Place

Flaunted in Table 10 is the level of Ecoliteracy Skills of Grade Six Learners in terms of Sense of Place. The result focused on the highest, middle, and lowest mean ratings of indicators which are as follow: showing awareness of environmental connections and issues (4.07), capturing some of the elements that influence how individuals live and think about our environments, both local and global. (4.03), and demonstrating environmental sensitivity (3.97).

The overall mean rating of Ecoliteracy Skills of Grade Six Learners in terms of Sense of Place is 4.02 or high. This means that the level of Ecoliteracy Skills in terms of Sense of Place is oftentimes manifested by the grade six learners. This indicates that grade six learners are able to connect to the environment in a positive way; and provide something essential on a global as well as local scale to protect a community from global changes.

Table 10: Sense of Place

No.	Statements	Mean	Descriptive Equivalent
1.	captures some of the elements that influence how we live and think about our environments, both local and global.	4.02	High
2.	shows awareness of environmental connections and issues.	4.07	High
3.	provides something essential on a global as well as local scale to protect a community from global changes.	4.05	High
4.	connects to environment in a positive way.	3.99	High
5.	demonstrates environmental sensitivity.	3.97	High
	Overall Mean	4.02	High

The result matches the view of Rickinson *et al.* (2009), who underscored that sense of place relates to our perceived impact upon the places we live. The key aspect of essential ecoliteracy is the realization that people can have positive impacts. This kind of empowerment is critical at the individual and community level. This is also congruent to the statement of Pike *et al.* (2008), who underscored that sense of place captures some of the elements that influence how we live and think about our environments, both local and global. It includes a basic awareness of environmental connections and issues something essential now on a global as well as local scale, as even the best local knowledge will not protect a community from global changes.

Respect for Environment

Displayed in Table 11 is the level of Ecoliteracy Skills of Grade Six Learners in terms of Respect for Environment. The results logically arranged from highest to lowest mean ratings of indicators which are as follow: elucidating the importance of recycling (4.09), incorporating the importance of biological and cultural diversity (4.05), and campaigning reduce, reuse and recycle activities (4.02).

The overall mean rating of Ecoliteracy Skills of Grade Six Learners in terms of Respect for Environment is 4.05 or high. This means that the level of Ecoliteracy Skills in terms of Respect for Environment is oftentimes manifested by the grade six learners. This indicates that grade six learners are able to control plastic waste and assign to plant trees; and use cleaner products or recycling what individuals use.

The finding is similar to the statement of Zeidler and Nichols (2009), who cited that respect for others ethical, and one that incorporates the importance of biological and cultural diversity. The quality of life that essential ecoliteracy is based upon is not just one individual; it applies to other individuals, other communities, other cultures and other species.

Table 11: Respect for Environment

No.	Statements	Mean	Descriptive Equivalent
1.	Incorporates the importance of biological and cultural diversity	4.05	High
2.	Campaigns reduce, reuse, and recycle activities.	4.02	High
3.	Uses cleaner products or recycling what individuals use.	4.07	High
4.	Elucidates the importance of recycling	4.09	High
5.	Controls plastic waste and assigns to plant trees.	4.04	High
	Overall Mean	4.05	High

Summary of Ecoliteracy Skills of Grade Six Learners

Flaunted in Table 12 is the summary on the level of Ecoliteracy Skills of Grade Six Learners with the following indicators: knowledge, competencies, sense of place, respect for environment. The mean ratings of these indicators are as follows: knowledge (4.04), competencies (4.09), sense of place (4.02), and respect for environment (4.05).

The overall mean rating of Ecoliteracy Skills of Grade Six Learners with the following indicators: knowledge, competencies, sense of place, respect for environment is 4.05 or high. This means that the level of Ecoliteracy Skills of Grade Six Learners with the following indicators: knowledge, competencies, sense of place, respect for environment is oftentimes observed by the grade six learners. This implies that the grades six learners are able to understand the natural system that make life on earth possible; understand the basic principles of a connected nature and how to live accordingly; show awareness of environmental connections and issues; and elucidate the importance of recycling.

Table 12: Summary of Ecoliteracy Skills of Grade Six Learners

No.	Statements	Mean	Descriptive Equivalent
1.	Knowledge	4.04	High
2.	Comptencies	4.09	High
3.	Sense of place	4.02	High
4.	Respect for Environment	4.05	High
Overall Mean		4.05	High

The finding corresponds to the standpoint of BC Hydro (2013), who noted that environmental stewardship means as the responsible use including conservation of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species, as well as of private needs, and accepts significant answerability to society. Also, supported by the view of Payne (2003), who explained that ecoliteracy is highly important to be applied in teaching-learning activity. The students would not have a sensitive awareness, feelings, and desires to protect the earth from natural damage or environmental crises if ecoliteration teaching does not exist. Although the environmental crisis is a very dangerous problem. It may seem impossible to imagine that a technologically advanced society could choose to destroy itself, but that is what we are now in the process of life.

The Significance on the Relationship Between Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners

Presented in Table 13 is the significant relationship between the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners with an overall computed r-value of .816 and a high degree of correlation. Since the p-value of 0.00 is less than the 0.05 level of significance, this indicates the null hypothesis is rejected, and it could be stated therefore that there is a significant relationship between Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners. This implies that teachers who have a high level on Environmental Stewardship Practices would also increase the Ecoliteracy Skills of Grade Six Learners.

The finding matches up the statement of BC Hydro (2013), who posited that environmental stewardship means as the responsible use including conservation) of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species, as well as of private needs, and accepts significant answerability to society. The finding is also in lined with the statement of Johnson and Mappin (2005), who signified that if teachers want their learners to have an awareness of the environment, they should have to demonstrate the responsible use and protection of the natural environment through conservation and

sustainable practices. The more the teachers demonstrate the stewardship of our environment, the more the learners imbibe the skills of being an ecoliterate individuals.

Table 13: Significance on the Relationship Between Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners

Variables	X	Y	R-value	Degree of Correlation	P-value		Decision
					computed	a = 0.05	
Environmental Stewardship Practices of Teachers	4.07		0.816	High Correlation	0.017	Significance	Rejected
Ecoliteracy Skills of Grade Six Learners		4.05					

**Correlation is significant at the 0.05 level (2-tailed).*
***Correlation is significant at the 0.01 level (2-tailed).*
All computed r-value are higher than the critical value of 0.045 at .05 alpha
The null hypothesis is rejected

The Domains of Environmental Stewardship Practices of Teachers which significantly Influence Ecoliteracy Skills of Grade Six Learners

Presented in the table 14 is the significance influence of Environmental Stewardship Practices of Teachers on Ecoliteracy Skills of Grade Six Learners in Public Elementary Schools with an overall computed F-value of 31.39 with a computed p-value of .001 at alpha 0.05 level of significance in this study. Since the overall computed is less than the 0.05 level of significance, the null hypothesis is rejected. It could be stated therefore, that the domains of Environmental Stewardship Practices of Teachers such as recycling (p=.004), conservation (p=.002), regeneration (p=.005), and restoration (p=.006) significantly influence to the Ecoliteracy Skills of Grade Six Learners in Public Elementary Schools. This indicates that the Environmental Stewardship Practices of Teachers have a great impact on the Ecoliteracy Skills of Grade Six Learners.

Table 14: The Domains of Environmental Stewardship Practices of Teachers which significantly Influence Ecoliteracy Skills of Grade Six Learners

Model	Sum of Squares	Degrees of Freedom	Mean Square	F	Sig.
Regression	12.48	3			
Residual	19.53	138	4.126	31.39	.001
Total	32.01	141	0.137		
Coefficient	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
Recycling	0.268	0.118	0.262	2.561	0.004
Conservation	0.251	0.117	0.231	2.547	0.002
Regeneration	0.242	0.115	0.245	2.559	0.005
Restoration	0.239	0.114	0.258	2.535	0.006

The result is similar to the view of Hager (2015), who contended that to foster the intelligence that describes one's awareness and ability to act in harmony with nature; it should be emanated first in the level of teachers. Teachers should flaunt responsibility for environmental quality shared by all those whose actions affect the environment. This is also aligned with the opinion of Hui (2014), who expressed that environmentally intelligent concept needs to be grown in elementary school students to ensure the sustainability of life. The students would not have sensitive awareness, feelings, and desires to protect the earth from natural damage or environmental crises if ecoliteration teaching does not exist. Through ecology teaching students are expected to be able to realize, feel, and act to protect the earth. Student actions that have ecological intelligence can be seen from their habits. For the teaching of ecoliteracy to be effective, teachers should be environmental stewards as well.

CONCLUSION

The findings showed that teachers from the seven selected schools in Maa District, Division of Davao City,

demonstrated a high level of environmental stewardship practices. Similarly, Grade Six learners showed a high level of ecoliteracy skills. The results also revealed a significant relationship between teachers' environmental stewardship practices and learners' ecoliteracy skills. Furthermore, teachers' environmental stewardship practices significantly influenced the development of ecoliteracy skills among Grade Six learners.

Recommendations

This chapter displayed the conclusions and recommendations drawn out by the researcher after the analysis and interpretation of the findings had been made.

It is recommended in this study that the Environmental Stewardship Practices of Teachers in terms of recycling, conservation, regeneration, and restoration should be reinforced and reached a very high level. The Department of Education may develop a plan and conduct training that will enrich the Environmental Stewardship Practices of Teachers.

It is commended in this study that the Ecoliteracy Skills of Grade Six Learners in terms of knowledge, competencies, sense of place, and respect for environment should be enhanced by the learners and should be improved by them mainly on the portion of gray areas which are collecting and processing materials that would otherwise be thrown away as trash and turning them into new products; preventing natural things such as animals, plants, forests etc. from being spoiled or destroyed; demonstrating resilience, adapting and recreating landscapes where wildlife and people can thrive; and seeking to return to an earlier state or to another state that is closely related to one unaltered by human activities. It is mentioned in this study that the Environmental Stewardship Practices of Teachers and Ecoliteracy Skills of Grade Six Learners in the low result areas should be kept an eye by the teachers to encourage learners to reach a high level.

It is recommended in this study that Ecoliteracy Skills of Grade Six Learners in terms of knowledge, competencies, sense of place, and respect for environment should be escalated to a very high level. Therefore, it is recommended that the Environmental Stewardship Practices of Teachers should be more developed because this has an impact on the Ecoliteracy Skills of Grade Six Learners. Further study may be conducted on the other variables that may affect the Ecoliteracy Skills of Grade Six Learners in the region.

Acknowledgements

The author is very grateful to GOD ALMIGHTY for without His graces and blessings this study would not have been possible.

It is a genuine pleasure to express my deep sense of thanks and gratitude to my mentor and guide Dr. Maricel O. Noquiao. Her dedication and keen interest above all her overwhelming attitude to help her students had been solely and mainly responsible for completing my work. Her timely advice, meticulous scrutiny, scholarly advice and scientific approach have helped me to a very great extent to accomplish this task.

I thank profusely Dr. Reynaldo M. Guillena, CESO V-Davao City Schools Division Superintendent, Ami Lyne Rose S. Yurong, EdD, Principal II of Kabacan Elementary School, Dr. Mel Joy B, Barral, PhD., Principal I of Maa Central Elementary School, Yummy B. Decena, Principal III of SIR Elementary School for allowing and helping me in the conduct of my study. I can barely express my gratefulness to the panel of examiners headed by Pablo F. Busquit, PhD., and members who manifested their distinguished skills and talent in their own field as seen in their way of correction and ideas shared to improve my study;

My deepest gratitude to the respondents for all their full participation and cooperation that make them a big part to this success; And lastly, it is my privileged to thank my family for their undying love, encouragement, support and for inspiring me to face and accomplish the challenge positively. I am always grateful to be surrounded by these people who never fail to support me all the way to this journey.

REFERENCES

Álvarez-Romero, J. G., Pressey, R. L., Ban, N. C., Vance-Borland, K., Willer, C., Klein, C. J., & Gaines, S. D.(2011). Integrated land-sea conservation planning: The missing links. Annual Review of Ecology, *Evolution, and Systematics, 42*, 381–409. https://doi.org/10.1146/annurev-ecolsys-102209-144702

Appiah-Opoku, S. (2007). Indigenous beliefs and environmental stewardship: A rural Ghana experience. *Journal of Cultural Geography, 24*(2), 79–98. https://doi.org/10.1080/08873630709478212

Asah, S. T., & Blahna, D. J. (2012). Motivational functionalism and urban conservation stewardship: Implications for volunteer involvement. *Conservation Letters, 5*(6), 470–477. https://doi.org/10.1111/j.1755-263X.2012.00263.x

Ayers, A. L., & Kittinger, J. N. (2014). Emergence of co-management governance for Hawai'i coral reef fisheries. *Global Environmental Change, 28*, 251–262. https://doi.org/10.1016/j.gloenvcha.2014.07.006

Ban, N. C., Mills, M., Tam, J., Hicks, C. C., Klain, S., Stoeckl, N., Bottrill, M. C., Levine, J., Pressey, R. L., Satterfield, T., & Chan, K. M. A. (2013). A social–ecological approach to conservation planning: Embedding social considerations. *Frontiers in Ecology and the Environment, 11*(4), 194–202. https://doi.org/10.1890/110205

BC Hydro. (2013, November 1). *BC Ferries saves energy, from lighting to radiant heat in tollbooths*. https://www.bchydro.com/news/conservation/2013/bc-ferries-saves-energy.html

Center for Ecoliteracy. (n.d.). *Education for sustainability competencies*. https://www.ecoliteracy.org/education/competencies.html

Coyle, K. (2005). *Environmental literacy in America: What ten*

years of NEETF/Roper research and related studies say about environmental literacy in the U.S. National Environmental Education & Training Foundation.

Diamond, J. M. (2005). *Collapse: How societies choose to fail or succeed*. Viking.

Garcia, M. N. Z., & Cobar-Garcia, M. R. V. (2016, October 2). *Need for environmental literacy. The Philippine Daily Inquirer*, A16.

Hager, M. (2015, January 30). *How B.C.'s ski resorts are coping with global warming's threat to their existence*. The Globe and Mail. https://www.theglobeandmail.com/news/british-columbia/how-bcs-ski-resorts-are-coping-with-global-warming/article22731538/

Johnson, E. A., & Mappin, M. J. (2005). *Environmental education and advocacy: Changing perspectives of ecology and education*. Cambridge University Press.

Jordan, R., Singer, F., Vaughan, J., & Berkowitz, A. (2009). What should every citizen know about ecology? *Frontiers in Ecology and the Environment, 7*(9), 495–500. https://doi.org/10.1890/070113

Krathwohl, D. R. (1992). *Methods of educational and social science research: An integrated approach*. Longman.

Lavoie, J. (2014, October 31). *Jumbo Glacier Resort threatens grizzlies*. Troy Media. https://www.troymedia.com/2014/10/31/jumbo-glacier-resort-threatens-grizzlies/

Marzano, R. J., & Kendall, J. S. (2007). *The new taxonomy of educational objectives*. Corwin Press.

Mepham, B. (2000). A framework for the ethical analysis of novel foods: The ethical matrix. *Journal of Agricultural and Environmental Ethics, 12*(2), 165–176. https://doi.org/10.1023/A:1009542714497

Mueller, M. P. (2009). Educational reflections on the "ecological crisis": Ecojustice, environmentalism, and sustainability. *Science & Education, 18*(8), 1031–1056. https://doi.org/10.1007/s11191-008-9179-X

O'Callaghan, P. (2006, October 6). *The greening of tourist accommodation on Salt Spring Island*. The Partnership for Water Sustainability in British Columbia. https://waterbucket.ca/wuc/2006/10/06/the- greening-of-tourist-accommodation-on-salt-spring-island/

Orr, D. W. (1992). *Ecological literacy: Education and the transition to a postmodern world*. State University of New York Press.

Payne, P. (2003). The technics of environmental education. *Environmental Education Research, 9*(4), 525–541. https://doi.org/10.1080/1350462032000126140

Pike, C., Minkow, D., Weiner, H., & Herr, M. (2008). *Re: Green: The ecological roadmap*. Earthjustice.

Ratcliffe, M., & Grace, M. (2003). *Science education for citizenship: Teaching socio-scientific issues*. Open University Press.

Rickinson, M., Lundholm, C., & Hopwood, N. (2009). *Environmental learning: Insights from research into the student experience*. Springer. https://doi.org/10.1007/978-90-481-2956-0

Robinson, M. (2014, October 2). *For Vancouver restaurants, it's not easy being green*. The Vancouver Sun. http://www.vancouversun.com/business/Vancouver+restaurants+easy+being+green/10257218/story.html

Salerno, F., Viviano, G., Manfredi, E. C., Caroli, P., Thakuri, S., & Tartari, G. (2013). Multiple carrying capacities from a management-oriented perspective to operationalize sustainable tourism in protected areas. *Journal of Environmental Management, 128*, 116–125. https://doi.org/10.1016/j.jenvman.2013.04.043

Self, R. M., Self, D. R., & Bell-Haynes, J. (2010). Marketing tourism in the Galapagos Islands: Ecotourism or greenwashing? *International Business & Economics Research Journal, 9*(6). https://doi.org/10.19030/iber.v9i6.590

Stables, A., & Bishop, K. (2001). Weak and strong conceptions of environmental literacy: Implications for environmental education. *Environmental Education Research, 7*(1), 89–97.https://doi.org/10.1080/13504620125643

Supera, M. A. (2019). *District MANCOM for all school heads* [Meeting/management document]. Department of Education, District of Baguio, Davao City, Region XI, Philippines.

Uhl, C. (2003). *Developing ecological consciousness: Paths to a sustainable future*. Rowman & Littlefield.

Williams, P. W., & Ponsford, I. F. (2009). Confronting tourism's environmental paradox: Transitioning for sustainable tourism. *Futures, 41*(6), 396–404. https://doi.org/10.1016/j.futures.2008.11.019

Wong, P. P. (2008). Environmental impacts of tourism. *In A. A. Lew, C. M. Hall, & A. M. Williams (Eds.), A companion to tourism* (pp. 450–461). Blackwell Publishing. https://doi.org/10.1002/9780470752272.ch36

Worrell, R., & Appleby, M. C. (2000). Stewardship of natural resources: Definition, ethical and practical aspects. *Journal of Agricultural and Environmental Ethics, 12*(3), 263–277. https://doi.org/10.1023/A:1009534214698

Zeidler, D. L., & Nichols, B. H. (2009). Socioscientific issues: Theory and practice. *Journal of Elementary Science Education, 21*(2), 49–58. https://doi.org/10.1007/BF03173684