



Discovering Ecological Awareness of Filipino Education Students

Genalyn P. Lualhati¹, Frances Jane A. Catibog¹, Rose Anne L. Holgado¹ & John Mark A. Liwanag¹

¹ College of Teacher Education, Batangas State University JPLPC- Malvar Campus, Batangas Province, Philippines

Correspondence: Genalyn P. Lualhati, College of Teacher Education, Batangas State University JPLPC- Malvar Campus, Batangas Province, Philippines. E-mail: genpanganiban_0301@yahoo.com, jane_catibog@yahoo.com, roseanneholgado@gmail.com, brightjm16@gmail.com

Received: October 5, 2018; Accepted: October 28, 2018; Published: October 30, 2018

Abstract

Ecological awareness is a way of thinking about the world in terms of its interdependent natural and human systems, including a consideration of the consequences of human actions and interactions within the natural context. Hence, this research determined the level of ecological awareness of Filipino education students, with the aim of strengthening their ecological awareness through enrichment activities. The input of the study was determined by employing self-made questionnaire as the principal tool for gathering data. Through appropriate statistical tools and analyses of data, the study revealed that the respondents are greatly female individuals who belonged to the bracket of middle income, reached high school level which was the parent's highest educational attainment and acquired General Weighted Average (GWA) in Natural Sciences (NS) ranging from 2.00-2.49. It also revealed that the respondents are aware when it comes to caring and practical competency. Further, it was revealed that there is no significant relationship between sex and ecological awareness while there is a significant relationship between socio-economic status, parent's highest educational attainment, GWA in NS and ecological awareness. The above-mentioned findings recommend to conduct programs that integrate caring, knowledge, and action that determine potential to enhance student's ecological awareness and promote transparency and public participation in decision-making, and access to justice in environmental matters.

Keywords: Ecological Awareness, Caring, Practical Competency, Knowledge, Filipino Education Students

1. Introduction

Since the turn of the new millennium, the world is facing different environmental issues that may harm people, societies and ecosystems. Environmental issues are the result of harmful human activities on the biophysical environment. Such issues that people are experiencing today are global warming, climate change, pollution and environmental degradation. It can be clearly seen that humans created this problem. Thus, it is a must to promote environmental awareness through environmental education to prevent this phenomenon.

In the light of promoting environmental awareness, the Commission on Higher Education amended the Republic Act No. 9512, otherwise known as the "National Environmental Awareness and Education Act of 2008" which aims to integrate environmental education in school curricula at all levels, whether public or private, including in barangay daycare, preschool, non-formal, technical vocational, professional level, indigenous learning and out-of-school youth courses or programs with the help of Department of Education (DepEd), the Commission on Higher Education (CHED), the Technical Education and Skills Development Authority (TESDA), the Department of Social Welfare and Development (DSWD), in coordination with the Department of Environment and Natural Resources (DENR), the Department of Science and Technology (DOST) and other relevant agencies. The said order also involved implementing different environmental laws that would help the human beings to be educated and aware to build a more sustainable world (The LAWPHIL Project, 2008).

Pursuant to the policy set forth in the Act, it is stated that the month of November of every year will be known as the "Environmental Awareness Month" throughout the Philippines. Also, for better training, the CHED and the TESDA include environmental education and awareness programs and activities in the National Service Training Program under Republic Act No. 9163, as part of the Civic Welfare Training Service component which required all baccalaureate degree courses and vocational courses with a curriculum of at least two years.

In line with this problem, awareness and literacy is indeed an important variable. Awareness is a human right, a tool of personal empowerment and a means for social and human development. Educational opportunities depend

on literacy. It is at the heart of basic education for all and essential for eradicating poverty, reducing child mortality, curbing population growth, achieving gender equality and ensuring sustainable development, peace, and democracy (Nordquist, 2017; UNESCO, 2010)

Literacy is indispensable to raise awareness and gather necessary grass roots participation in efforts to improve the way humans care for the planet and manage its resources. This transformation can only happen if society's most vulnerable youth and adults acquire basic literacy skills that equip them with the knowledge and confidence to improve their own lives and build more resilient communities (UNESCO, 2015). In relation to environmental issues, acquiring literacy in environment and its ecological systems serves an important purpose. The said literacy can be termed as —Ecological Literacy or —Eco-literacy Ecological literacy draws its meaning from multiple time periods and scholars (McGinn, 2014).

In Bruyere's (2008) analysis of definitions of ecological literacy, he identifies that although varied definitions of ecological literacy exist, commonalities run through the literature. The similarities boil down to three components; cognitive, affective, and behavioral which must fuse to make an ecologically literate person (Bruyere, 2008). Each of these three components is emphasized or implied in different definitions. In some definitions knowledge is the primary emphasis while in others people's actions are weighted higher than people's knowledge. For the purpose of this study, the areas of ecological literacy are considered of equal importance, and a person must have knowledge. They must feel a connection to the issues, and they must exhibit sustainable behaviors. Knowledge alone is not enough to constitute ecological literacy.

Further, another components of ecological literacy are caring (Affective), knowledge (Cognitive), and practical competency (Behavioral). Caring gauges a person's level of compassion for environmental protection and social justice. A caring person, in this context, feels a desire to and responsible for reducing their personal and communal impact on ecological systems. This section is reflective of a person's mindset, not actions. Knowledge represents an understanding of ecological principals and humans' interactions with their built and natural environments.

Moreover, according to Cherrett, as cited by McGinn (2014), a person needs to be aware of his environment, as this is the foundation and starting point of literacy. Nowadays, knowledge is no longer limited to extensive memorization of concepts, but raised awareness is a prerequisite for a successful learning. An ecologically aware person would have an understanding of imperative ecological concepts such as ecosystem succession, energy flow, materials cycling, ecological adaptation, food webs, carrying capacity, and species diversity. Further, they are mindful of actions that they can be taken to build sustainable and health communities.

With the importance of honing ecological aware person prior to producing literate populace that this study had conceptualized. The researchers, who are Science educators, can use the findings of this study to be more effective molders of civic-minded youth, who have good sense of humanity to take good actions towards the environment. Lastly, this may also aid them in becoming more engaged and actively involved in promoting care and action for the environment to entail progress and awareness to the world where everyone lives in.

Objectives of the Study

This study determined the level of ecological awareness of Filipino education students at BatStateU JPLPC – Malvar, with an end view of formulating enrichment activities to strengthen their ecological awareness. Specifically, the study sought the respondents' profile in terms of sex, socio-economic status, parent's highest educational attainment, and General Weighted Average (GWA) in Natural Science. Further, this determined the assessments on the level of ecological awareness in terms of caring and practical competency. Lastly, significant relationship of the profile and their assessed level of ecological awareness was sought.

2. Materials and Methods

2.1 Research Design

This study used of descriptive method of research. This type of research according to Calmorin as cited by Fababaer et.al (2013), is a scientific method which focuses at the present condition for the purpose of the new truth. It is a research that is valuable in providing facts on which scientific judgment may be based on essential knowledge about the nature of objects and persons for closer observation into the practices behaviors, methods and procedures. In this endeavor, the researchers believed that through descriptive method, they could determine the level of ecological awareness and the profile of Filipino education students at BatStateU JPLPC - Malvar.

2.2 Subject of the Study

The respondents of this study are the 111 sophomore education students at BatStateU JPLPC - Malvar who were officially enrolled during the academic year 2016-2017, and who had successfully finished and passed Natural Science courses.

2.3 Instrumentation

In gathering the instrument, the researchers used a researcher-made questionnaire that is composed of two parts. The first part focused on the profile of the respondents in terms of sex, socio-economic status, parent 's highest educational attainment and GWA in Natural Science while the last part dealt with the respondents' level of ecological awareness in terms of caring and practical competency.

2.4 Data Collection Procedure

This study started through seeking permission from the concerned authorities to utilize the sophomore education students as respondents. After securing the necessary documents, the researchers asked for the list of the students who were officially enrolled in the department. From the list, the target respondents were determined. The revised copy of the questionnaire was prepared, reproduced and administered to the target respondents. The researchers personally distributed and retrieved the questionnaires. The responses were tallied, tabulated, analyzed and interpreted.

3. Results and Discussions

This chapter covers the presentation, analysis and interpretation of the data gathered regarding the study. The data were tabulated accurately and justified to provide an in depth analysis and interpretation. It was also arranged sequentially in a manner that coincides with the organization of the problems posed in the study.

Table 1. Percentage distribution of the respondents' profile

Profile Variables	Frequency	Percentage
Sex		
Male	20	18
Female	91	82
Socio-Economic Status		
High Income (P37,000.00 above)	6	5
Middle Income (P10,000.00- P37,000.00)	71	64
Low Income (P9,999.00 and below)	34	31
Parent's Highest Educational Attainment		
Master	2	2
College	45	40
High School	60	54
Elementary	4	4
General Weighted Average (GWA) in Natural Science		
1.50-1.99	36	32
2.00-2.49	71	64
2.50-3.00	4	4

As Table 1 revealed, majority of the respondents are female with a GWA in NS falling under 2.00-2.49; with regards to parent's highest educational attainment, the highest attainment is high school and the socio-economic status is middle income.

Table 2. Respondents' Ecological Awareness in Terms of Caring

Item Statements	Mean	Standard Deviation	Verbal Interpretation
As an Education student, I ...			
1. reduce the negative impact I make in the environment by following rules and regulations in my community.	3.41	0.56	Agree
2. consider teaching others important for them to know how to take care of the environment.	3.47	0.64	Agree
3. approach people who litter in public places calmly.	3.11	0.74	Agree
4. avoid wasting resources such as food, water, energy and etc.	3.59	0.61	Strongly Agree
5. take good care of the plants and manage to make it grow.	3.38	0.69	Agree

6. refrain from burning wastes especially plastics to avoid pollution.	3.50	0.64	Agree
7. believe that environment awareness must be emphasized in schools as early as possible.	3.78	0.43	Strongly Agree
8. reduce the use of plastic by bringing eco bag when I go to the market.	3.50	0.71	Agree
9. support advocacies and campaigns which aim to take care of the environment.	3.47	0.69	Agree
10. promote care for the environment by being a volunteer.	3.62	0.59	Strongly Agree
Overall	3.48	0.63	Aware

Table 2 shows that the respondents were ecologically aware (3.48) with regards to caring. This implies that students are conscious on how to take good care of the environment. In the study of Anijaobi-Idem (2015), they suggested that adequate measures should be put in place where environmental awareness is sustained in the secondary schools in Calabar metropolis. This does not only increase the principal and teacher’s awareness about environmental issues, but also to sensitize the students on this matter.

Table 3. Respondents’ Ecological Awareness in Terms of Practical Competency

Item Statements	Mean	Standard Deviation	Verbal Interpretation
As an Education student, I ...			
1. join in organizations that works on environmental concerns.	2.75	0.68	Sometimes
2. carry with me things that can be recycled until I find a recycling bin.	2.88	0.74	Slightly Agree
3. separate recyclable items from items that go to the landfill.	3.16	0.69	Slightly Agree
4. join cleanliness campaign in school or community.	3.05	0.62	Slightly Agree
5. turn off the light when I leave a room.	3.74	0.48	Agree
6. turn off the faucet when not in use.	3.80	0.46	Agree
7. consume reusable water bottle and coffee cup.	3.32	0.66	Slightly Agree
8. make sure that I am informed about local, state, national, or global issues related to the environment by watching the news and surfing the internet.	3.18	0.65	Slightly Agree
9. advocate water conservation to save our planet Earth.	3.33	0.65	Slightly Agree
10. ensure that my environment is clean by not littering.	3.45	0.60	Slightly Agree
Overall	3.27	0.62	Aware

It can be seen from the table that the respondents were aware on practical competency (3.27). This signifies that they are mindful of the value of active involvement in activities and programs concerning the environment. This is justified by Verma (2016), which pointed out that youth continues to be involved in implementing environmental projects, and the experience they have gained qualifies them for increased participation in decision-making about environmental policies.

Table 5. Relationship between the Respondents’ Profile and their Assessed Ecological Awareness

Variables	Computed χ^2	p Value	Decision (H ₀)	Interpretation
Sex and Ecological Awareness	4.064	0.255	Accept	Not Significant
Socio-economic Status and Ecological Awareness	15.158	0.019	Reject	Significant
Parent’s Highest Educational Attainment and Ecological Awareness	25.596	0.002	Reject	Significant
GWA in Natural Science and Ecological Awareness	40.586	0.000	Reject	Significant

The table revealed that there is no significant relationship between sex and ecological awareness while there is a significant relationship between socio-economic status, parent’s highest educational attainment, GWA in NS and ecological awareness. This implies that students’ sex has no bearing on their awareness on ecology. It is worth noting that all students are cognizant of their role on environmental conservation and preservation.

Table 6. Suggested Enrichment Activities to Strengthen Ecological Awareness among the Filipino Education Students

Areas of Concern	Objectives	Strategies/ Activities	Person/s Involved	Target Date	Expected Outcome/ Output
Caring	To inculcate care/concern for the environment among students	Engagement to volunteer works that promote care for the environment can entail progress and awareness to the environment where we live in.	Community, Associate Dean, Head and Coordinators of Extension Services, Faculty Members, Education Students, Student Organizations	September 2017	Filipino education students are able to connect and become passionate to take care of the environment.
Practical Competency	To strengthen students’ involvement in conserving the environment	Active involvement to organizations and campaigns that work on environmental concerns can be an initial step towards change and sustainability.	Community, Associate Dean, Head and Coordinators of Extension Services, Faculty Members, Education Students, Student Organizations	October 2017	Filipino education students are highly aware and responsible to take an action towards sustainability.
Ecological Concepts and issues	To strengthen students’ awareness on environmental concepts and issues.	Attending to symposiums and seminars regarding environment-related matters which can increase persons’ knowledge and understanding about ecological balance and processes.	Community, Associate Dean, Head and Coordinators of Extension Services, Faculty Members, Education Students, Student Organizations	December 2017	Filipino education students are knowledgeable and can understand ecological concepts.

Table 6 shows the suggested enrichment activities together with its objectives and expected outcomes. The strategies enumerated were believed to strengthen the ecological awareness among the Filipino education students.

4. Conclusions and Recommendations

Majority of the respondents were female with a GWA in NS falling under 2.00-2.49; with regards to parent’s highest educational attainment, the highest attainment was high school and the socio-economic status was middle income. It was also concluded that the respondents were ecologically aware in terms of caring and practical competency. Moreover, there is no significant relationship between sex and ecological awareness while there is a significant relationship between socio-economic status, parent’s highest educational attainment, GWA in NS and ecological awareness.

The findings of the study afforded the researchers in drawing various suggested activities which may strengthen the ecological awareness of Filipino education students at BatStateU JPLPC - Malvar. The campus may provide and conduct activities such as clean-up drives for students to be reminded about the importance of not littering in maintaining the cleanliness of the environment. On the other hand, college educators may present video clips and documentaries showing the alarming environmental issues that the world’s facing today to give awareness which may encourage the students to join in organizations that work on environmental concerns. The activities suggested may be considered by the concerned authorities for maximum implementation and actualization. Lastly, a follow-up study may be conducted considering other variables.

References

Akan, U. (2014). The Influence of Parents’ Educational Background and Study Facilities on Academic Performance among Secondary School Students. *Academia*, 1, 7-8. Retrieved from https://www.Academia.Edu/7678232/The_Influence_Of_Parents_Educational_Backgroundandstudy_Facilit

ies_On_Academic_Performance_Among_Secondaryschoolstudents

- Anijaobi-Idem, F. N., Ukata, B. N., & Bisong, N. N. (2015). Environmental Awareness and School Sanitation in Calabar Metropolis of Cross Rivers State, Nigeria. *Journal of Education and Practice*, 6(4). Retrieved from <https://files.eric.ed.gov/fulltext/EJ1083753.pdf>
- Asmal, K. (2000). Norms and Standards for Educators. *Government Gazette*, 82. Retrieved from <http://www.up2speed.co.za/Legislation/NORMS%20AND%20STANDARDS%20FOR%20>
- Balgopal, M. M., Wallace, A. M. (2009). Decisions and Dilemmas: Using Writing to Learn Activities to Increase Ecological Literacy. *Journal of Environmental Education*, 40(3), 13-26. <https://doi.org/10.3200/JOEE.40.3.13-26>
- Borden, D. S. (2007). Collegiate ecological literacy requirements: A case study of Western State College of Colorado. *Research Gate*, pp. 2-53. Retrieved from https://www.researchgate.net/publication/36710480_Collegiate_ecological_literacy_requirements_A_case_study_of_Western_State_College_of_Colorado
- Bruyere, B. L. (2008). The Effects of Environmental Education on Ecological Literacy of First Year College Students. *Journal of Natural Resources & Life Sciences Education*, 37, 20-26.
- Buctot, B., Obrando, M., & Silverino, L. (2012). Level of Awareness on Ecological Problems of Second Year Students at Lumbang National High School. (Unpublished Thesis) BatStateU JPLPC-Malvar Campus, Malvar, Batangas.
- Burchett, J. H. (2015). Environmental Literacy and its Implications for Effective Public Policy Formation. *Baker Scholar Projects*, pp. 35. Retrieved from http://trace.tennessee.edu/utk_bakerschol/27
- Chand, S. (2016). Incentives Types: Financial and Non-Financial Incentives Explained. *Your Article Library*. Retrieved from <http://www.yourarticlelibrary.com/hrm/incentives/incentives>
- Datinguino, M., Delos Reyes, R., & Godoy, R. (2007). Environmental Practices of Grade VI Pupils Banaba East Elementary School. (Unpublished Thesis) BatStateU Main Campus, Batangas City.
- Davidson, M. F. (2010). Ecological Literacy Evaluation of the University of Iceland Faculty, Students, and Staff; Implications for a University Sustainability Policy. (Master's Thesis) *Department of Earth Sciences, University of Iceland*, pp. 149. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.831.1518&rep=rep1&type=pdf>
- DeK
ay, M. (n.d.). Systems Thinking as the Basis for an Ecological Design Education. *Systems Ecodesign*, pp. 1. Retrieved from http://web.utk.edu/~arch/Research_Outreach/scholarship/dekay/pdf/Systems_Thinking.pdf
- Ecological Literacy (2016, May). Draft Global Issues Pilot. Retrieved from <https://www.slideshare.net/enriccalvet/ecological-literacy-Educational-Review>, 66, 377-397. <https://doi.org/10.1080/00131911.2013.780009> EDUCATORS.pdf
- Fababaer, K. G. F., et al. (2013). Level of Awareness and Participation in the Environmental Code Program of Grade VI Pupils at Alangilan Central School. (Unpublished Thesis) BatStateU JPLPC-Malvar Campus, Malvar, Batangas.
- Finnie, R., & Mueller, R. E. (2008). The Effects of Family Income, Parental Education and Other Background Factors on Access to Post-Secondary Education in Canada. Canadian Education Project. <https://doi.org/10.2139/ssrn.2256114>
- Guerrero, L. I., & Jordan, M. A. (2007). Environmental Awareness and Involvement of Students at Mabini High School. (Unpublished Thesis) BatStateU JPLPC-Malvar Campus, Malvar, Batangas.
- Gutierrez, J. A. (2012). Ecological Concerns and Environmental Education Issues: Bases for Curricular and Co-Curricular Initiatives. (Unpublished Thesis) BatStateU Main Campus, Batangas City.
- Hanemann, U. (2015). Transforming Our World Literacy for Sustainable Development. UNESCO Institute for Lifelong Learning, pp. 4. Retrieved from <https://files.eric.ed.gov/fulltext/ED564012.pdf>
- Henriques, G. (2013). What is Knowledge? A Brief Primer: A basic review of how Philosophers Approach Knowledge. *Psychology Today*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2248287/>
- Ilao, C. M., et al. (2010). Global Warming: Threat to Human life. (Unpublished Thesis) BatStateU Main Campus, Batangas City.

- Lebo, III, N. F. (2012). Toward Ecological Literacy: A Permaculture Approach to Junior Secondary Science. *Australian Journal of Environmental Education*, 29(2), 241-242. <https://doi.org/10.1017/aee.2014.9>
- McBride, B. B. (2011). Essential Elements of Ecological Literacy and the Pathways to Achieve It: Perspectives of Ecologists. Theses, Dissertations, & Professional Papers. 380. Retrieved from <https://scholarworks.umt.edu/etd/380>
- McGinn, A. E. (2014). Quantifying and Understanding Ecological Literacy: A Study of First Year Students at Liberal Arts Institutions. Dickinson College Honors Theses, paper 169. Retrieved from https://scholar.dickinson.edu/student_honors/169
- Mohammed, K. H., Atagana, H. I., & Edawoke, Y. (2014). The Difference between Male and Female Students' Self-Efficacy, Academic Engagement and Academic Achievement in Biology among Grade Ten Students in South Wollo Zone Schools in Ethiopia. *Mediterranean Journal of Social Sciences*, 5(23), 804-813. <https://doi.org/10.5901/mjss.2014.v5n23p804>
- Nordquist, R. (2017, October 07). Defining Literacy Meaning and Importance Evolve Over Time. Retrieved from <https://www.thoughtco.com/what-is-literacy-1691249>
- Republic Act No. 9512/ The LAWPHiL Project Arellano Law Foundation. (n.d.). Retrieved from https://www.lawphil.net/statutes/repacts/ra2008/ra_9512_2008.html
- Reyes, J. A. L. (2014). Environmental Attitudes and Behaviors in the Philippines. *Journal of Educational and Social Research*, 4(6). <https://doi.org/10.5901/jesr.2014.v4n6p87>
- Roy, P. (2016). A comparative study on Environmental Awareness between Primary and Secondary School Teachers. *International Journal of Research in Economics and Social Sciences (IJRESS)*, 6(12), 255-259. Retrieved from <http://euroasiapub.org/wp-content/uploads/2017/01/24ESSDec-4419-1.pdf>
- Stanger, N. R. G. (2007). Youth and Environmental Art: The Effects of the Island School on Ecological Literacy. *Academia.edu*, pp. ii.
- Sterling, E. P. (2015). A Shifting Paradigm: Teachers' Beliefs and Methods For Fostering Ecological Literacy in Two Public Charter Schools. University of Alaska Scholar Works, pp. 2. Retrieved from [https://scholarworks.alaska.edu/xmlui/bitstream/handle/11122/5760/Sterling_uaf_0006N_10313.pdf?sequence=1&typesfinancial-andnon-financialincentives explained/35360/](https://scholarworks.alaska.edu/xmlui/bitstream/handle/11122/5760/Sterling_uaf_0006N_10313.pdf?sequence=1&typesfinancial-andnon-financialincentives%20explained/35360/)
- Verma, P. (2016). Youth Participation in Environment Protection. *World Pulse*. Retrieved from <https://www.worldpulse.com/en/community/users/priya-verma/posts/65057>
- Weiner, S. J., & Auster, S. (2007). From Empathy to Caring: Defining the Ideal Approach to a Healing Relationship. *Yale Journal of Biology and Medicine*, 80(3), 123-130.
- Wilder, S. (2013). Effects of Parental Involvement on Academic Achievement: A Metasynthesis.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).