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Students' Environmental Awareness and Practices: Basis for Development of Advocacy Program

ABSTRACT: *Environmental degradation has been a problem, which needs to be address to meet sustainability. It is important to consider the balance between human activity development and environmental protection requires a sharing of responsibilities that can be equated with the behaviour towards the environment and natural resources. Preservation of the environment is one of the concerns of the Philippines government through the DENR (Department of Environment and Natural Resources). However, it will be a great help if every citizens will be involved most especially the youth. There are some studies conducted about environmental preservation with different outcomes, such as modified environmental awareness scale; development of lesson exemplars; modular package on environmental awareness protection and conservation, etc. Aiming to produce an environmental advocacy program, this study was conducted to promote the environmental awareness of the students through active participation in the different environmental programs and activities through the joint effort of the participating school's organization. The descriptive method of research was used in this study, which looked into the environmental awareness and practices of the selected fourth year high school students in the Philippines. The instrument of EAS (Environmental Awareness Scale) was modified to give emphasis on the environmental problems and issues evident at present. Findings of the study were the basis for development of an environmental advocacy program.*

KEY WORDS: *Environmental Awareness; High School Students in the Philippines; Environmental Awareness Scale; Environmental Practices; Advocacy Program.*

INTRODUCTION

The youth of today must be challenged to play a big role in preserving the environment for their future needs. It is cited in chapter 25 of the Agenda 21 that it is imperative that youth from all parts of the world participate actively in all relevant levels of decision-making processes, because it affects their lives today and has implications to their future (De Boer, 2010; and Arlemalm-Hagser, 2013).

In this study, the researcher believes that by having an environmental awareness and by performing positive environmental practices, environmental sustainability can be achieved. This study aimed to answer the following questions: (1) What is the level of environmental awareness of the selected 4th year high school students?; (2) How do the students demonstrate their environmental practice at home and in school as an outcome

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of their awareness in terms of: Recycling, Tree Planting and Clean-Up Drive, Water and Energy Conservation, School's Environmental Club, Non-Use of Harmful Products, Creative Possible Solution, and Social Media Exposure; and (3) What environmental advocacy program can be developed to strengthen and deepen the environmental awareness and practices of the students?

Conceptual Framework. Environmental awareness is necessary to solve environmental problems that we are facing at present. But, this awareness will be much effective if we put it into practice. The youth are supposed to be one of the best agents of change for they will be the new generation that will inherit the wealth of the environment (Gardner & Stern, 2002; Agarwal & Nangia, 2005; and Reyes, 2009).

The perspectives of environmental education seem to be, consecutively, related to *positivism* (knowledge about the environment); *constructivism* (activities in the environment); and the *critical theory* (actions for the environment) of *education* (Robottom & Hart, 1993; Palmer & Neal, 1994; and Robottom, 2004). In order to solve environmental problems that we have, environmental practice must be looked upon.

Environmental awareness will be an effective tool in achieving sustainability, if it is concurred with positive practices towards environmental care. It is the "praxis", as defined by P. Freire (1972), which will lead to sustainability. It indicates life practice formed from both reflection and action (Freire, 1972).

The self-striving to transform the world creatively, according to an emerging vision based on its own values, actualizes itself as actualizes its vision.¹ There is a must to have not only practice, but praxis aside from having an environmental awareness; because "praxis", as P. Freire (1972) defines, it is reflection and action upon the world in order to transform it (Freire, 1972).

The conceptual paradigm of this study, as shown in figure 1, stresses that the students' environmental awareness, which is based

on the Modified Environmental Awareness Scale Instrument of J. Canarias (2005) is subdivided into two levels (Canarias, 2005). Level I consist of: (1) Knowledge of environmental concept/state of environment; and (2) Knowledge of environmental issues/problem (Canarias, 2005).

The knowledge of environmental concept/state of environment is regarded as the familiarity of the respondents on the facts about the ecology, latest policies, and laws about the environment; while the knowledge of environmental issues/problems is regarded as the familiarity of the respondents on the recent issues/problems, which are happening in the present which have caused the degradation of the environment (*cf* Opschoor & Turner, 1994; Valles, 2002; and Harris, 2004). The interpretation of the responses can fall under highly aware, moderately aware, slightly aware, and not aware, depending on the mean that will be gathered in each item.

Level II of the Students' Environmental Awareness consists of the following: (1) Awareness of the needs to formulate alternative solution; (2) Awareness of the need to take action in solving problems; and (3) Awareness of the need to possess a high degree of commitment and advocacy (Opschoor & Turner, 1994; Balmaceda, 2004; and Canarias, 2005).

The awareness of the needs to formulate alternative solution is regarded as the familiarity of the respondents to make a wise choice in solving the environmental problems. The awareness of the need to take action in solving problems is regarded as the praxis or the reflection and action of the respondents and on how they act upon in taking care of the environment. The awareness of the need to possess a high degree of commitment and advocacy is regarded as the familiarity of the respondents to their need to participate in the different activities and programs that will preserve the environment (Madsen, 1996; and Tietenberg, 2006).

The interpretation of the responses can fall under: *always does the task, sometimes does the task, seldom does the task, and not at all*, depending on the mean that will be gathered in each item. The environmental practices

¹As cited in "Encyclopedia of the Social and Cultural Foundations of Education, 2008". Available online at: <http://www.markfoster.net/struc/praxis.html> [accessed in Marikina City, Philippines: August 4, 2015].

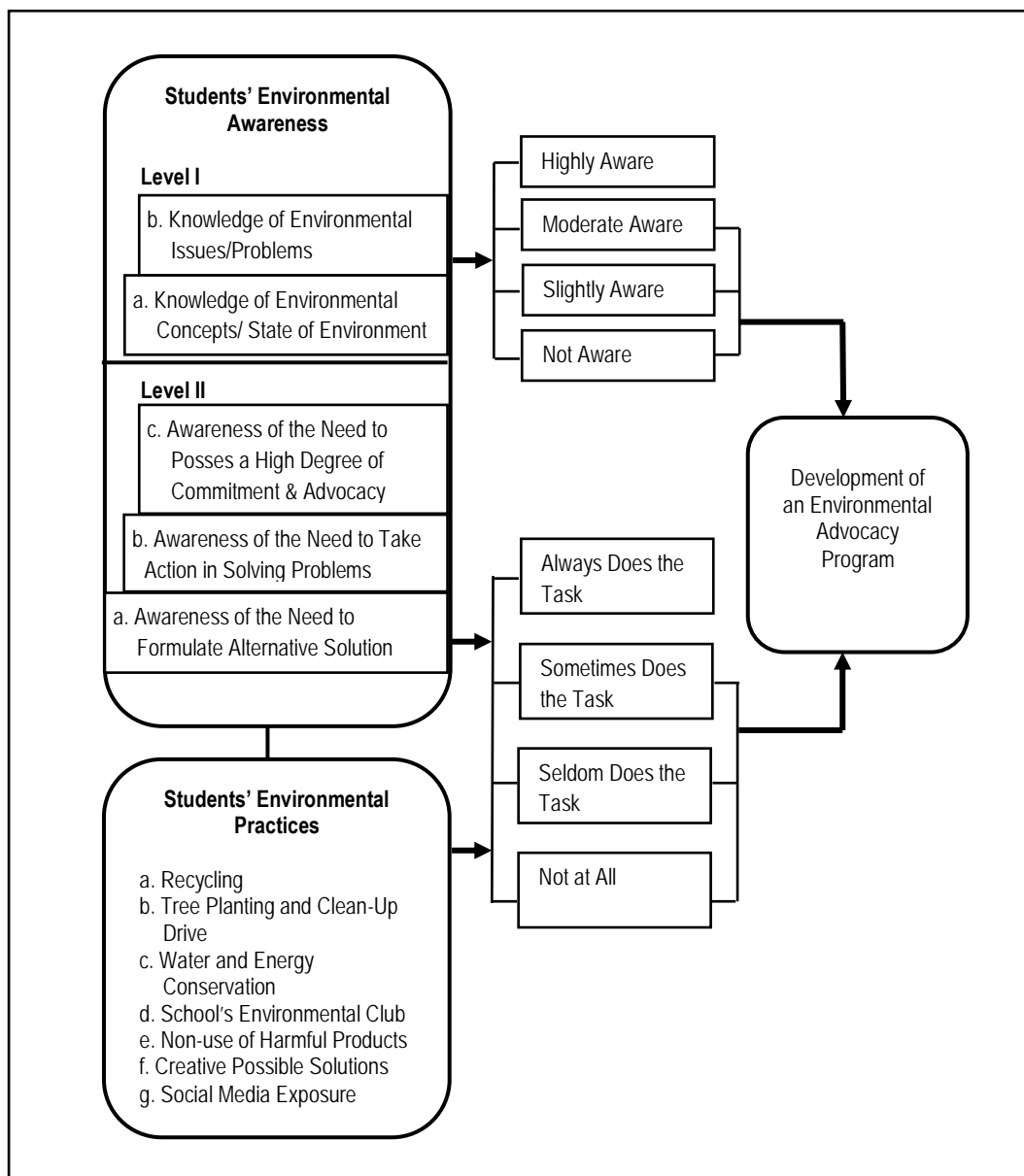


Figure 1:
Conceptual Paradigm of the Study

in this study covers: (1) recycling; (2) tree planting and clean-up drive; (3) water and energy conservation; (4) participation in school’s environmental club; (5) non-use of harmful products; (6) creative possible solution; and (7) social media environmental exposure.

The possible responses in level I, such as: *moderately aware, slightly aware, and not aware*; as well as the responses in level II, such as *sometimes does the task, seldom does the task,*

and *not at all* are connected with an arrow to another construct, which is the development of an advocacy program. The suggested activities in the EAP (Environmental Awareness Program) will be developed to help the students to deepen their environmental awareness for the responses in level I with *moderately aware, slightly aware or not aware*; and to increase their environmental practices for the responses in level II with *sometimes does the task, seldom does the task or not at all*

(Canarias, 2005; and Domingo, 2007).

In this context, D. Tilbury (1995), as cited also in J.E. Dos Santos *et al.* (2000), points out in the context of the EEP (Environmental Education Praxis), the involvement of the social actors, through responsibilities, will look for action and participation upon having an awareness, knowledge, and educative competencies (Tilbury, 1995; and Santos *et al.*, 2000).

The EAP will help the students to be more aware of the condition of our environment (Santos *et al.*, 2000; and Miranda, 2008). It will also encourage them to participate in different programs and activities that will deepen their environmental awareness and practices. The EAP is composed of ten suggested programs and activities that aim to preserve the environment and deepen their environmental awareness and practices (Barry, 1999; Santos *et al.*, 2000; and Louka, 2006).

The following are the suggested programs and activities included in the EAP: (1) Symposium of the Seven Eco-systems; (2) Facebook Environmental Group; (3) House-house Visitation for Giving Leaflets about the Environment; (4) Synchronized School Clean-Up Drive; (5) A Trip to Clean the Community; (6) Recycle Mania Competition; (7) Green Day; (8) Waste-Free Lunches; (9) Green Team; and (10) Environmental Fund Campaign through Making a Product Out of Recyclable Materials (Santos *et al.*, 2000; and Enger & Smith, 2013). Please see again figure 1.

Literature Review. L. Sharmin (2003) conducted a study about the assessment of environmental awareness of the students with primary education; and revealed that they have a better awareness about safe water, safe sanitation practice, and importance of trees. The students are poorly aware about environmental pollution, like air, water, and soil pollution; and the problem with arsenic (Sharmin, 2003).

E. Garcia (1997) has developed a scale to measure environmental awareness of college freshmen at the PNU (Philippine Normal University). One of his recommendations is that the instrument may be used for subsequent research directions on environmental awareness. Further studies on

environmental awareness, which include other variables, were also recommended (Garcia, 1997). The instrument of EAS (Environmental Awareness Scale) by E. Garcia (1997) was modified by J. Canarias (2005).

In his study, J. Canarias measured the environmental awareness level of the selected second year high school students, which served as basis for development of lesson exemplars for teachers. His findings revealed that the modified environmental awareness scale may be used as a valid and reliable instrument in assessing the level of environmental awareness of his population (Canarias, 2005). The last three items, in which the students were rated low, were included in the development of lesson exemplars for teachers.

The study done by J. Ato (2002) noted that there is a correlation between students' knowledge and awareness, but none between knowledge and practices, and awareness and practices. She recommended that teachers and administrators should emphasize reuse, recycle, and refuse; and making of compost pits as good practices towards environmental care or as friendly practices. Likewise, teachers should integrate more the value of advocacy for the environment in their subjects and teach students specific strategies for advocacy (Ato, 2002).

Different environmental practices were given attention in the present study, which is also discussed in other studies. Some of these studies were done by A. Gallardo (2008) and J. Norris (2013). The data gathered by A. Gallardo (2008), in her study, imply low levels of implementation of segregation/collection, transportation, and storing waste was deduced from unanimous reactions among administration, the faculty members, and the students (Gallardo (2008). As cited in the study made by J. Norris (2013), the practices of students in terms of waste management practice is highest in terms of cleaning for improper waste disposal, immediately turning off faucets after using tap water for water conservation, and energy use and saving energy for energy conservation (Norris, 2013).

The present study relates with the aforementioned studies by J. Ato (2002);

A. Gallardo (2008); and J. Norris (2013), in the sense that their study focused on the correlation of the environmental awareness and their participants' practices. Moreover, the study done by J. Ato (2002), for example, relates with the present study, because the researcher recommended that reuse, recycle, and refuse as being part of a good practice was also be looked into (Ato, 2002). The environmental practices cited by A. Gallardo (2008) and J. Norris (2013), in their studies, also correlate with the present study, because almost the same practices were also discussed by the researcher (Gallardo, 2008; and Norris, 2013).

The deterioration of the global environment is such that it has reached a scale that encompasses the vital life support systems of the biosphere. Scientists, educators, and policymakers, who have studied the environmental problems facing the world today, believe that the threat to the environment is extremely serious; and the majority agree that immediate action is needed (Snow & Benford, 1992; Guzman *et al.*, 2000).

Studies about environmental problems and environmental issues were also done in relation to environmental education. The study of M. Mani (2006), for example, revealed that in the Province of Romblon, Philippines, forest ecosystem ranked first on the seriousness of problems followed by coastal resources, fresh water system, land mineral, and human resources. In the distribution of local environmental problems, forest denudation was perceived as the number one problem followed by degradation of coral colonies, garbage, pollution, and poverty (Mani, 2006).

The study done by Z. San Felipe (2003) revealed that students have high level of awareness on environmental issues on forest resources, air, and general environmental issues; but they have moderate level of awareness on environmental issues on water resources. One of her recommendations was the exposure of the students to print and broadcast media to increase their awareness on environmental issues (Felipe, 2003).

The study of Z. San Felipe (2003) and

M. Mani (2006), whose studies focused on the environmental problems and issues, related with the present study (Felipe, 2003; and Mani, 2006). However, the present study encourages the use of social media, particularly Facebook, in strengthening the environmental awareness of the students compared to the study of Z. San Felipe, which focused on print and broadcast media (Felipe, 2003).

Based on the researches reviewed by the researcher, she gained insights on different environmental problems and practices as revealed in almost similar studies that have been undertaken. The researcher were able to come up with a study that will focus not only on awareness, but also on students' environmental practices as basis for developing an advocacy program, which the other researchers were not able to focus in the studies that they have done.

As cited in the *Journal of Information Policy*, the concept of "advocacy" goes well beyond the notion of advocating for championing, or supporting a specific viewpoint, or cause (*cf* Brown, 2000; and Obar, Zube & Lampe, 2011). Often applied in the political concept, the term suggests a systematic effort by specific actors, who aim to further to achieve specific policy or goals (Obar, Zube & Lampe, 2011).

The term "environmental advocacy" refers to a wide variety of careers, avocations, and activities. It includes work in certain forms of environmental law and environmental policy, careers with mainstream environmental groups, and participation in radical activist groups.² Advocacy program is a must in the school level. "Greening" a school does not mean simply planting trees or keeping the campus clean. More than that, it means making the school an environmentally sustainable community, where concern for the environment is reflected in every operation, whether academic or administrative. The greening process may also be extended to include outreach work for adjacent communities and advocacy in local and

²See, for example, "Environmental Advocacy". Available online at: <http://www.uwosh.edu/home> [accessed in Marikina City, Philippines: October 13, 2013].

national environmental issues (Soriano, 1995; Brown, 2000; and Ofreneo, 2012).

There are several studies done in the Philippines, which aim to have an environmental advocacy program. One of it is the study done by N. Paringit (2012), which cited that in order for the private companies which are manufacturing and selling "green" products, the researcher suggested to make their products more visible in the eye of the consumers, such as making commercials, brochures, paraphernalia's, billboards, having a documentation of the products that they are selling and seeking for a help from the government to promote and support advocacy (Paringit, 2012).

The present study relates with the study done by N. Paringit (2012), because it intends to develop an advocacy program after the level of awareness of the respondents are measured. In the study done by J. Canarias (2005), his developed lesson exemplars for teachers answered the need of the teachers for resource materials in teaching second year high school students in doing the tasks of formulating solution, taking action and possessing a high degree of commitment, and advocacy on environmental conservation and protection (Canarias, 2005).

The present study is almost similar to the present study considering that the instrument used is a modification of the instrument used by J. Canarias (2005), yet it is somewhat different in the year level of the respondents, in which the fourth year level high school was used instead of the second year level high school, which was used by J. Canarias (2005) in his study.

As cited in the study made by E. Moralda (2003), her respondents' environmental practices level can be used in coming up with interesting and varied programs of action and involvement for the resolution of problems, and issues related to the preservation of the integrity of creation (Moralda, 2003). This study correlates with the present study, because one of its goals is to develop an advocacy program based on the level of awareness of the respondents.

The study done by E. Garcia (1997) made use of an environmental awareness scale

instrument, which aimed to measure the level of awareness of the need of possessing a high degree of commitment, and advocacy to the environment which is in the part II level of the instrument (Garcia, 1997). The same environmental awareness scale was modified by J. Canarias (2005) in his study, which was be also used in the present study with some modification in order to include the environmental problems and issues at present, and to suit the level of the chosen respondents in the study, which makes it different from the two aforementioned studies (Canarias, 2005).

The present study is distinguished from the studies reviewed above in the sense that attempted to come up with an advocacy program based on the level of environmental awareness and practices of the respondents.

METHODS

The descriptive method of research was used in this study, which looked into the environmental awareness and practices of the selected fourth year students (Sevilla *et al.*, 1984; Babbie, 1999; and Denzin & Lincoln, 2003). The instrument of EAS (Environmental Awareness Scale) by J. Canarias (2005) was modified to give emphasis on the environmental problems and issues evident at present (Canarias, 2005). It was administered to two hundred sixty-two (262) out of seven hundred sixty-two (762) randomly selected fourth year high school students of Santa Elena High School in Marikina City, the Philippines, for School Year 2013-2014, by using the Slovin's formula with 5% margin of error.³

Statistical mean were gathered for each items in the EAS and interpretations were given (Calderon & Gonzales, 1993; Robottom & Hart, 1993; and Bailey, 2008). For level I of the Environmental Awareness Scale: *Highly Aware* for weighted mean of 2.50-3.00; *Moderately Aware* for 1.50-2.49; *Slightly Aware* for 0.50-1.49; and *Not Aware* for 0.00-1.49. For level II of the Environmental Awareness Scale: *Always Does the Task* for weighted mean

³See "Slovin's Formula: What is it and When do I use it?". Available online at: <http://www.statisticshowto.com/how-to-use-slovins-formula/> [accessed in Marikina City, Philippines: August 4, 2015].

of 2.50-3.00; *Sometimes Does the Task* for 1.50-2.49; *Seldom Does the Task* for 0.50-1.49; and *Not at All* for 0.00-1.49.

RESULTS AND DISCUSSION

The level of environmental awareness of the selected 4th year high school students. Based from the data gathered from the instrument, the over-all weighted mean was 1.73, which signifies that the respondents were *Moderately Aware* of the knowledge of environmental/state of the environment, which was revealed in sub-test I. It was supported by the result of the over-all weighted mean of sub-test II, which gathered 1.80 signifies that the respondents were *Moderately Aware* of the knowledge of environmental issues/problems (cf Codeniera, 2003; and Canarias, 2005).

The over-all weighted mean of sub-test I and II of level I, which were gathered based from the responses in the modified EAS (Environmental Awareness Scale) were very close with each other with only 0.07 difference which proves that the respondents were *Moderately Aware* of the environmental concepts included in the instrument (cf Canarias, 2005; and Domingo, 2007).

The students' participation in environmental programs, based from the data gathered from the instrument, revealed that:

First, Recycling. An over-all weighted mean of 1.98 was computed, which signifies that the respondents *Sometimes Do the Task*. The EAS (Environmental Awareness Scale) items pertaining to this activity include: using recycled materials in submitting projects in school instead of buying new one like folder and wrapper; things that can still be used are given to others instead of throwing or putting it in the storage; using leftover foods in compost pit; segregating things that can be sell in the junkshop or can be recycled; and discussing environmental matters like waste segregation and recycling in the family (cf Ray, 1999; Southwood, 1999; and Mukherjee, 2012).

Second, Tree Planting and Clean-Up Drive. An over-all weighted mean of 1.32 was computed, which signifies that the respondents *Seldom Do the Task*. The responses about tree planting and clean-up drive is

consists of five items, in which it focused on the following: to draw, write, and think of alternative solutions to the environmental problems in the community; participating in tree planting program to reduce air pollution; having self-initiative in keeping the surroundings clean by picking-up the trashes; participating in building a community garden; and participating in clean-up drive (cf Cohen, 1993; Bachelet *et al.*, 2001; and Betts, 2007).

Third, Water and Energy Conservation. An over-all weighted mean of 2.15 was computed, which signifies that the respondents *Sometimes Do the Task* related under these activities. The responses about water and energy conservation is consists of four items, in which it focused on the following: avoid wasting water by using glass, when brushing teeth and using basin when washing the dishes; turning-off the lights and electric fan inside the classroom if not in used; using solar flashlight and calculator; and supporting local programs on conservation through conserving electricity at home and in school (cf Everts *et al.*, 1996; Fontanilla, 2003; Primack, 2004; Raven *et al.*, 2010; and Desa *et al.*, 2013).

Fourth, School's Environmental Club. An over-all weighted mean of 1.39 was computed, which signifies that the respondents *Seldom Do the Task* of participating in this activity. The responses about SEC (School's Environmental Club) is consists of three items, in which it focused on the following: joining environmental organization in the school which aims to protect the environment like the YES-O Club; persuading schools, churches, and libraries to conduct a talk about the environment; and having the initiative to keep the surroundings clean inside and outside the classroom without being told or seen (cf Power, 2009; and Alexander & Britto, 2013).

Fifth, Non-Use of Harmful Products. An over-all weighted mean of 1.94 was computed, which signifies that the respondents *Sometimes Do the Task* under this activity. The responses about non-use of harmful products is consists of four items, in which it focused on the following: avoidance of the use of plastic by bringing eco bag;

avoiding the use of non-biodegradable with harmful content products, like Styrofoam; avoiding the use of soap with more than 0.5% of phosphate; and not using products with toxic ingredients, like Styrofoam, hairsprays, and paint which is made up of oil (*cf* Ball, 2002; and Sengölge & Vincenten, 2013).

Sixth, Creative Possible Solution. An over-all weighted mean of 1.82 signifies that the respondents *Sometimes Do the Task* regarding this activity. The responses about CPS (Creative Possible Solution) is consists of four items, in which it focused on the following: the need to formulate alternative solutions to avoid the things that will destroy the environment; weighing the advantages and disadvantages of harmful practices to the environment; judging what is useful or not in the environment; thinking of ways to protect the environment and to preserve the natural resources; and focusing on the cause of environmental problem through analyzing and acting on how to avoid it (*cf* Cadio, 2009; and Brandon & Lombardi, 2011).

Seventh, Social Media Exposure. An over-all weighted mean of 1.57, which signifies that the respondents *Sometimes Do the Task*. The responses about SME (Social Media Exposure) is consists of four items, in which it focused on the following: having self-awareness through research about the environmental issues here and around the world through reading and watching news; helping the media to spread the environmental news through sharing and liking posts in Facebook; having an interest in reading posts in the social media which is about the condition of the environment in order to have awareness and do the right thing to protect the environment; and writing letter to publication to bring environmental concerns to light (*cf* Shrum, 2009; Vega *et al.*, 2009; and Vonderer & Kinnally, 2012).

CONCLUSION

Based on the findings of the study, the following conclusions are hereby drawn that the selected fourth year high school students manifested moderate awareness on the different concepts, issues, and problems of the environment. As an outcome of their

awareness, students sometimes do the tasks, which pertain to recycling, water and energy conservation, non-use of harmful products, creative possible solution, and social media exposure. However, they seldom do the tasks of tree-planting, clean-up drive, and participating to school's environmental club.

The items in the EAS (Environmental Awareness Scale) with a low mean result with an interpretation of slightly aware under level I; and sometimes does the task as well as seldom does the task in level II were the bases in developing an EAP (Environmental Advocacy Program).

It is recommended that the teachers should strengthen the integration of environmental concepts, principles, and practices in various subjects in the high school level. The school should institutionalize different environmental programs and projects for students as well as the teachers to actively participate in. Environmental programs and projects in the school and likewise in the community should be sustained through adequate funding, support of the teachers, and active participation of various student organizations.

The extent of students' and teachers' knowledge about the environmental concepts can also be measured and compared with their environmental practices. The students' observation in the community's environmental activities might be included to further elaborate the environmental practices not only in school and at home. An in-depth study to explore other factors that hinder the students in actively participating in environmental care can also be done for further research.⁴

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⁴*Statement:* This paper was summary of my Master's Thesis at the PNU (Philippine Normal University), in which I have graduated last April 2015. I am confident that this is not a product of plagiarism, because it passed through the Plagiarism Detector, which was one of the requirements of the PNU. Rest assured that my paper is not yet published in any journal.

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(Source: <http://www.philstar.com/good-news>, 9/10/2015)

The selected fourth year high school students in the Philippines manifested moderate awareness on the different concepts, issues, and problems of the environment. As an outcome of their awareness, students sometimes do the tasks, which pertain to recycling, water and energy conservation, non-use of harmful products, creative possible solution, and social media exposure. However, they seldom do the tasks of tree-planting, clean-up drive, and participating to school's environmental club.