



Environmental Education and Environmental Literacy of Students in Basic Education in Partido District, Camarines Sur, Philippines

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ABSTRACT

Purpose of the Study: The primary purpose of this study was to determine how the level of curriculum integration of environmental problems and issues influence the level of knowledge and attitude of respondents.

Methodology: The study used the descriptive-quantitative research design. Primary data were gathered through a survey on the 284 SHS students enrolled in STEM track. Median and mode were used to determine the extent of integration in secondary education and the level of knowledge and attitude of the respondents on environmental problems and issues. Ordinal regression was used to determine the influence of curriculum integration on the level of knowledge and attitude of respondents.

Results and Discussion: Results showed that the respondents are well aware that air pollution is their primary local environmental problem. Curriculum Integration of environmental problems was moderate. Both the knowledge and attitude of the respondents on environmental problems were fair. Results of Spearman correlation showed significant positive relationship between Integration of EE and attitude on environmental problems ($r=0.161$, $p=0.007$). There were also significant positive relationship between attitude and knowledge on Restoration of Environment ($r=0.181$, $p=0.007$) and highly significant positive relationship between attitude and knowledge on Status of Biodiversity ($r=0.288$, $p=0.001$). Ordinal regression showed that the integration of EE had significant influence at 1.69% variation on the attitude towards environmental problems ($p=0.002$). The test further revealed that integration of EE had no significant influence to the knowledge on restoration on environment and status of biodiversity.

Originality/Novelty of the study: This study contributed knowledge on curriculum integration (CI) of environmental education in the STEM track of Senior High School. CI was found to be an important educational strategy to influence the attitude of learners. While CI did not influence the knowledge of learners, the influence on attitude is much more important because a positive attitude leads to responsible behaviors towards the environment.

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1. INTRODUCTION

The huge impact of some pressing environmental problems like global warming, ozone depletion, air and water pollution and soil degradation threaten man's existence. The best way to address these problems is to make Philippine education responsive to these challenges. Massive Environment Education for learners can

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achieve Environmental Literacy which can reverse the impact of environmental problems. There are a variety of factors that appear to affect Environmental Literacy, the most important of which are environmental knowledge, attitudes towards the environment and responsible environmental behavior [1]-[5].

Several literatures highlight Environmental Education and Environmental Literacy. People could become environmentally literate if immersed in a context of Environmental Education with the introduction of Education for Sustainable Development (EE/ESD) into school and university curricula [6]. Environmental concern and perceptions of environmental behavior are linked to environmental awareness [7]. Additionally, the human and material resources in the university show a great impact on the level of knowledge towards the environment and the positive attitude on the environment [8]. Indeed there is a great need for environmental literacy initiatives at the university to develop better appreciation, involvement, and positive thoughts to improve the quality of our environment [9].

Curriculum Integration (CI) is defined to include the subject knowledge and competencies in a topic to provide an opportunity for students acquire deeper learning on the topic as whole and subject concepts within that topic [10]. In this study, the integration of environmental issues and concerns in the Science subject of the STEM curriculum in Senior High School ensures that teachers and learners acquire substantial skills and develop positive attitudes and good behaviors in the environment. However, in terms of knowledge and behavior, key figures show that 40 percent of the teachers are confident in teaching the cognitive dimension of climate change but only 20 percent can explain well how to take action [11]. With these data, it is then important that institutions must explore ways to strengthen the curriculum, teachers, and pedagogy in teaching. To date, the Department of Education in compliance with R.A. 9512, issued DepEd Order No.52,s. 2011 on “Strengthening of Environmental Education in Public and Private Schools.”

Like other countries, Philippines is not spared from environmental problems. In fact, the country is said to be a biodiversity “hotspot” primarily because of poverty, negative activities, and increasing population. It is then important to increase the awareness of the people towards environmental protection. This project is contextualized in the Philippine setting particularly in Partido district in Camarines Sur. This study intended to determine the integration of Environmental Education in the basic education. and how the level of integration of current environmental issues and problems influence the level of knowledge and attitude of respondents. The uniqueness of this study is that the environmental literacy of Senior High School learners can reveal the extent of curriculum integration. Moreover, the respondent institutions can use Health and Science courses as a potential and aggressive medium towards an increased knowledge, positive attitude, and good behavior towards the protection and conservation of the environment.

2. RESEARCH METHOD

2.1. Type of Research Design

The study employed a Descriptive-Evaluative research design. Descriptive research design, according to Creswell, is a study that describes the characteristics of a population or phenomenon being studied. Primarily, it is used to gain an understanding of a group or phenomenon. This involves collecting data through surveys, interviews, or observation. On the other hand, Evaluation research is a form of disciplined and systematic inquiry that is carried out to arrive at an assessment or appraisal of an object, program, practice, activity, or system with the purpose of providing information that will be of use in making decisions [12].

2.2. Research Instrument

Data collection was through survey questionnaire. The level of knowledge was based on two knowledge constructs which are restoration of environment and status of biodiversity. The perception of knowledge constructs were developed based from previous studies of concurring authors [13], [8]. The curriculum integration was in terms of inclusion of environmental concepts/topics in the curriculum, availability and use of supplemental references and local-based lessons, expected outcomes like developing sense of empowerment and developing positive values connected on environment, and involvement in community service programs. Some of the modes of integration were mentioned from several studies [10], [11], [14], [15].

2.3. Locale of the study

The research was conducted in the Department of Education in Camarines Sur. Specifically, it was conducted in two Senior High Schools in Partido District offering the STEM track namely : Goa Science High School in Tagontong, Goa, Camarines Sur and San Rafael National High School in San Rafael, Tigaon, Camarines Sur.

2.4. Respondents of the study

Respondents of the study were 284 Grades 11 and 12 SHS of which 128 were from Goa Science High School and 156 were from San Rafael National High School. Primary and secondary data were gathered. Primary data were the responses from the respondents and secondary data include internet sources, studies and other literatures relevant to the study.

2.5. Data Analysis Techniques

To get the levels of integration and levels of knowledge and attitude, a 5-point scale survey questionnaire was used. Median and mode were used to determine the extent of integration in secondary education and the level of knowledge and attitude of the respondents on environmental issues and problems. Ordinal regression was used to determine the level of integration of current environmental issues and problems, and its influence on the level of knowledge and attitude of respondents. A dry run of questionnaire was conducted to eight respondents. The reliability test on the statements for knowledge and attitude was not subjected to Cronbach Alpha since most of the statements were patterned from the authors mentioned with similar studies.

3. RESULTS AND DISCUSSION

3.1. Environmental Issues and Problems in the Study Area

Table 1 shows that among the prevalent environmental issues or problems, the respondents identified air pollution, usage of plastic and its ill effects, and water pollution as the top 3 environmental issues or problems in the locality. The least problem they identified was soil degradation. This implies that the respondents, at a young age, are well aware of these three existing environmental issues and problems in their area. Specifically, the respondents consider some contributors to air pollution. They refer to the bus emissions from the local buses that transports passengers from Partido area to Naga City and back and some trucks owned by local businessmen. This perception is further strengthened by the research findings that the perceived outdoor air quality significantly correlates with the actual measured air quality with the increasing concentrations of suspended particles within specific size ranges and dust deposition [16]. The respondents of this present study must also have observed the declining health condition of people in the locality. There are impacts on the two perspectives on external air pollution and individual health status and the public awareness of environmental problems. There is a significant positive correlation between air pollution and public awareness of environmental problems. The health condition of people was found to shape the perception of environmental problems. Self-assessed health status of those below 40 years old may present psychological loss which indicates the severity of environmental problems [17]. In addition, the more satisfied the respondents are with their health means a lower severity of air pollution [18]. In this study, the respondents must have perceived the health of the people in their locality as unsatisfactory that is why they rated air pollution as the most severe environmental problem.

The second observable environmental problem for the respondents was plastics that are thrown anywhere specifically in public places and in some water bodies that cause the pollution. There are negative impacts of plastics both on the environment and health of people. When plastics degrade in fine particles, they easily spread in air, water, and soil and impacts the terrestrial and aquatic animals. They experience ingestion, entangling, ulcers, low reproduction, and oxidative stress. Microplastics affect human health through cardiovascular diseases, chronic kidney disease, birth defects, cancer, and other diseases [19]. The third environmental problem perceived by the respondents was water pollution. Water pollution can be as dangerous as air pollution. Water pollution processes can be biological, physical, and by dumping solid and liquid waste into waters of rivers, lakes and seas [20]. As practiced by some locals, they throw both biodegradable and non biodegradable wastes and these are harmful to the environment and health of people.

Awareness seems to be the key in solving environmental issues and problems. People can progress to be able to solve the problems. First, they must acquire awareness of the consequences of the interactions between humans and nature. Second, they must develop a deep sense of concern to prevent negative environmental consequences. Third, they must understand the implications both, historical and future, of human and nature interactions through thinking and decision-making skills. And fourth, apply their understandings to reduce negative environmental consequences [21].

Table 1. Environmental issues/problems in Partido area

Environmental issue/problem	Frequency	Rank
Air pollution	277	1
Plastic usage and its ill effects	271	2
Water pollution	270	3
Overpopulation	264	4
Global warming and ozone depletion	262	5.5
Improper solid waste disposal at school and at home	262	5.5
Deforestation and urbanization	260	7
Destruction of wildlife habitats	251	8
Vehicular emissions	238	9.5
Harm caused by oil spills	238	9.5
Depletion of biodiversity	194	11
Soil degradation	192	12

3.2. Level of Integration of Current Environmental Issues and Problems in the Basic Education Curriculum

The curriculum integration was studied in terms of inclusion of environmental concepts/topics in the curriculum, availability and use of supplemental references and local-based lessons, expected outcomes like developing sense of empowerment and developing positive values connected on environment, and involvement in community service programs. Some of the modes of integration were mentioned from several studies [10], [11], [14], [15]. The mode or modal value of a data set is the most frequently occurring value. It is a measure of central tendency that shows the most popular and most common response of the respondents. Table 2 shows that from the modal responses on mode of integration of environmental education in the curriculum, the frequently occurring value were on statements “Develop the sense of empowerment to become environmentally sensitive” and “Environmental issues are part of the tests and other forms of assessments” with 33.8 and 34.5 interpreted as Moderately Integrated. The statement on “There is a supplemental reference on environment being used” was least with 38.0 interpreted as Fairly Integrated.

Results imply that the schools recognize the current environmental issues and problems and they had integrated them in the lessons. The teachers also included them in the assessments to test the knowledge gained by the students every after lesson. This must have resulted to the respondents appreciating the environment and acting as stewards, and feeling empowered to protect their environment from being destroyed due to irresponsible behaviors of people. Interestingly, from the indicators of integration, the presence of supplemental reference was rated fairly integrated. This implies the need to develop specific and locally developed supplemental references for the students to appreciate the curriculum integration and to develop positive behaviors. The students can better relate and empathize with environmental problems if these are presented in the local contexts.

Several studies showed the importance of introducing locally developed supplemental reference for an effective curriculum integration. Providing environmental education to Grade 8 learners to appreciate their relationship with the environment for an increased environmental awareness in developing a sustainable future was found effective [14]. Results showed that the developed Local-Based Lessons on Environmental Education integrated to STEM lessons has increased the environmental awareness of the learners. Therefore, developing local-based lessons were found effective. Similarly, there is an impact of Environmental Education activities on environmental awareness and visual expressions among young learners. Primary students with environmental education, draw pictures enthusiastically reflecting environmental awareness. They gained awareness towards environment, empathized with nature, and drew highly aesthetically appreciated pictures [22].

Table 2. Modes of Integration of Environmental Education in the School Curriculum

Mode of Integration	% (n = 284)					Modal Responses
	1	2	3	4	5	
Curriculum was modified to include local environmental issues and problems	0.4	5.3	29.9	29.9	35.2	5
Ecological concepts and relationships are taught	1.1	3.5	24.6	34.2	35.9	5
There are opportunities to develop environmental sensitivity	0.4	3.9	22.5	43.7	29.2	4
Develop a value system connected to environment	0.4	7.0	23.2	35.9	33.5	4
Develop the sense of empowerment to become environmentally sensitive	1.8	7.4	28.9	33.8	26.4	4
Local environmental issues were provided and discussed	1.8	5.6	18.0	37.3	37.0	4
Teaching approaches used are suited for environmental concepts	1.1	2.8	28.2	32.7	34.9	5
Activities in the class include environmental issue analysis and investigations	0.7	5.3	25.7	35.2	32.7	4
Environmental issues are part of the tests and other forms of assessments	0.4	8.8	31.0	34.5	24.3	4
There are supplemental materials on environment used in the class	0	7.7	38.0	31.0	21.1	3
Students are involved in community service programs related to environment	3.5	8.5	20.1	26.8	40.8	5

5-Highly Integrated, 4-Moderately Integrated, 3-Fairly Integrated, 2-Less Integrated, 1-Not Integrated

Moreover, many literatures strengthen the idea that integrating a specific topic in the curriculum improves the content knowledge of teachers. The present study is on integrating environmental education in the curriculum. A significant literature on curriculum integration was the study among Finnish student teachers. It found out that the teaching experience or expertise of the Finnish teachers in several subjects did not correlate with their readiness to integrate topics between subjects but rather it is the subject matter and its potential to be integrated that determines the success of curriculum integration. Environmental Education in this present study can be easily integrated because other than there are many modes to integrate it in STEM subjects in Senior High School, environmental issues and problems are visible and the teachers and learners can relate to it [23].

It was mentioned that there are seven major categories of a teacher's knowledge base, as follows: 1.) content knowledge, 2.) general pedagogical knowledge, 3.) curriculum knowledge, 4.) pedagogical content knowledge, 5.) knowledge of learners and their characteristics, 6.) knowledge of educational contexts, and 7.) knowledge of educational ends, purposes and values [23], [24]. Another category was further added which is the teacher's ability to integrate pedagogical knowledge on the topics appropriate for integration in various subjects. This demonstrates the importance of the teachers' strong knowledge base in curriculum integration. Several researchers stress that curriculum integration is a good alternative for structuring the curriculum where it will be integrated and it provides the preliminary knowledge of what they are about to teach [25].

3.3. Level of Knowledge of the Respondents on Environmental Issues

The study further dealt with the identifying the level of knowledge of the respondents on various environmental issues. The level of knowledge of the respondents were along two constructs – knowledge on restoration of environment and knowledge on status of biodiversity.

Data on table 3 revealed that along the restoration of environment, almost all of the respondents have enough knowledge on environmental issues and concerns. Of the 284 respondents 80 have least knowledge on “Severe flooding in the late 1980s and early 1990s was not caused by illegal logging” and “The practice of kaingin does not affect the soil quality”. Further, only 87 respondents know that “Burning waste is prohibited”. This implies that most respondents are not aware that illegal logging, kaingin, and burning wastes are practices that are destructive to nature. They must not be aware that in 1980s to 1990s, illegal logging and kaingin used to be the problems in Mt. Isarog Natural Park. Being residents of the municipality of Goa, some of the respondents live at the slopes or peripheries of Mt. Isarog Natural Park. It might also be that within their households, they practice burning of wastes instead of segregating the degradable from non-biodegradable.

Table 3. Level of Knowledge of Respondents along Restoration of Environment

Restoration of Environment	% Correct Answer (n=284)
As we are moving on to modernization, we need to focus on preserving nature	100
The vehicular emissions, once released to the atmosphere, cause global climate change	96
Severe flooding in the late 1980s and early 1990s was not caused by illegal logging	80
The practice of kaingin does not affect the soil quality	80
Plants and animals need to be cared for because they naturally increase their population	94
Loss of trees in the mountains and heavy rains do not cause landslide	93
Toxic substances damage the environment	98
Burning of waste is prohibited	87

228-284 -High; 171-227 – Moderate; 115-170; Slightly Moderate; 59-114-Fair; 1-57-Poor

Along status of biodiversity, the 284 respondents have sufficient knowledge on 4 statements, but only 86 know the “Adopting sustainable and climate-friendly practices is not a way of protecting biodiversity”, only 85 know “Philippines has a continues destruction of resources that leads to about 700 threatened species”, only 77 know that “Philippines is one of the 18 mega countries with 2/3 of the earth's biodiversity and between 70-80% of world's plant and animal species”, and only 74 know that “Philippines is a biodiversity ‘hotspot’ because of poverty, negative activities, and increasing population”.

The responses imply that majority of the respondents knew little on protecting our biodiversity and Philippines as biodiversity hotspot because of our negative prevailing conditions. They are not also aware of some factual data on biodiversity and the extent of threatened species in our country. These factual data can best be included in the locally developed supplemental references.

To help improve the quality of environment, there must be strong environmental literacy initiatives at the university level. The study that assessed the levels of environmental knowledge and attitudes, found that almost 40% of the respondents were unaware about the environment, while less than half were unwilling to protect endangered species, unwilling to change their lifestyle for protecting environment, unconcerned by

other's land use, and consider runoff of water and global warming as exaggeration. The awareness level was 61.5%, while the attitude towards environmental protection was found lower at 50% [26].

Table 4. Level of Knowledge of Respondents along Status of Biodiversity

Status of Biodiversity	% Correct Answer (n=284)
Biodiversity of life on earth is the foundation of human existence	96
Loss of biodiversity does not threaten the benefits of nature	95
Loss of biodiversity is a result of man's negative activities and behavior	91
Adopting sustainable and climate-friendly practices is not a way of protecting biodiversity	86
Philippines is one of the 18 mega countries with 2/3 of the earth's biodiversity and between 70-80% of the world's plant and animal species	77
Philippine is a biodiversity "hotspot" primarily because of poverty, negative activities, and increasing population	74
Activities like poaching, hunting, illegal logging, kaingin, and collecting of plants are some negative activities that decrease the biodiversity	92
Philippines has a continues destruction of resources that leads to about 700 threatened species	85

228-284 -High; 171-227 – Moderate; 115-170; Slightly Moderate; 59-114-Fair; 1-57-Poor

3.4. Attitude of Respondents on Environmental Issues

Apart from the level of knowledge, the level of attitude on environmental issues and concerns was likewise determined in this study. Modal responses for attitude showed that the frequently occurring value were on indicators or statements on "Planting crops that deplete nitrogen causes soil degradation" and "Using public transport than private cars prevent global warming and ozone emissions" at 45.4 and 32.0, respectively at 3 interpreted as Somewhat Agree.

Three of the frequently occurring value were on indicators or statements "Human beings are superior and they rule over the rest of nature", 31; "Factories can openly emit their fumes in the air", 31; and "Throwing any waste on the river is the most convenient way to manage garbage" with 85.2; interpreted as Strongly Disagree.

Results imply that in terms of attitude, the respondents somewhat believe that soil degradation is caused by nitrogen depleting crops and more cars on the road contribute greatly to global warming. Respondents strongly disagree with the idea that men are superior and can rule over nature, factories can openly let go of their fumes in the air and they can throw wastes in the river

Positive attitude towards environment can be better reinforced through good practices. While environmental education has been integrated in the school curriculum, still there is a need for practical oriented approaches to develop sustainable practices such as tree planting, vermicomposting of wastes at school grounds, and alternative for the use of plastics. Other activities may be developing green gardens, nature walks, and terrace gardening [27].

Table 5. Level of Attitude of Respondents on Environment Issues and Problems

Indicator	1	2	3	4	5	Modal Responses
Human beings are superior and they rule over the rest of nature	31	12.3	9.5	13.7	30.6	1
Planting crops that deplete nitrogen causes soil degradation	7.7	14.1	45.4	17.6	10.9	3
Deforestation causes landslide	2.5	1.8	4.9	19.7	70.1	5
Use of plastics is harmful to the environment	2.8	4.6	9.2	19.7	63.0	5
Wildlife habitats must be preserved to increase the population of animals	1.8	3.2	10.2	21.2	61.6	5
Man must plant more trees	2.5	0.7	3.2	8.5	83.8	5
Using public transport than private cars prevent global warming and ozone emissions	11.6	12.7	32.0	21.8	20.1	3
Oil spills harm the rivers and the seas	5.6	3.5	4.9	19.4	65.1	5
Solid waste disposal must be practiced at school and at	2.5	1.4	3.2	7.0	85.6	5

home						
Factories can openly emit their fumes in the air	31	2.3	9.5	13.7	30.6	1
Throwing any waste on the river is the most convenient way to manage garbage	85.2	6.0	2.1	2.5	3.9	1
Vehicular emissions produces carbon dioxide that cause climate change	5.6	4.2	12.0	29.9	45.8	5

5- Strongly agree, 4-agree, 3-somewhat agree, 2-Disagree, 1-Strongly disagree

3.5. Influence of Level of Integration of Current Environmental Issues and Problems on the Level of Knowledge and Attitude of Respondents

Results of Spearman correlation show significant positive relationship between Integration of EE and attitude on environmental issues and problems ($r=0.161$, $p=0.007$). There are also significant positive relationship between attitude and knowledge on Restoration of Environment ($r=0.181$, $p=0.007$) and highly significant positive relationship between attitude and knowledge on Status of Biodiversity ($r=0.288$, $p=0.001$).

Unlike the findings in Nigeria [8], there was little or no relationship between the knowledge and the attitude of the students towards the environment. In a similar study in Malaysia [28] where Environmental Education is found across school curriculums, findings showed a significant but weak relationship between awareness and knowledge on environmental issues while there was high relationship observed between awareness and attitudes among respondents. This showed a negligible relationship between knowledge and attitude among students about environment. The study concluded that a high level of awareness and knowledge plus positive attitude of students may come have been achieved from the families of respondents, teachers, media, private reading and school curriculums regarding the environment that increases the environmental view among students as well as overall in the society. Further, the students' self-efficacy and environmental knowledge were linked in the study which showed that the teacher-participants lacked environmental knowledge and self-efficacy beliefs related to environmental education, despite their strong environmental attitudes, concerns, and perceptions [19].

The studies mentioned imply that the knowledge the students towards the environment does not heavily influence their attitude towards Environmental Education. In the present study, it can be inferred that knowledge of the students on environment influences their attitude towards environmental issues and problems. And this study shows the very logical connection between knowledge gained and attitude towards the environment.

The results of regression further shows that the integration of EE had significantly contributed to the attitude towards environmental issues and problems ($p=0.002$). Specifically, 1.69% (Mc Fadden $R^2=0.0169$) of the variation in the attitude was contributed by the integration of EE (or 1.69% variation in the attitude was attributed to the integration of EE). The test further reveals that integration of EE had no significant influence or did not contribute to the knowledge on restoration on environment and status of biodiversity.

The integration of Environmental Education in curriculum through developing that sense of empowerment among students to be environmentally sensitive and by including the environmental issues and problems in the assessment had significant influence or greatly contributed to their positive attitude by 1.69%. On the other hand, what is interesting in the result is that the integration did not, in any way, significantly influence or greatly contributed to their knowledge on restoration on environment and status of biodiversity.

The data imply that there must have been other factors why despite the integration of Environmental Education in the curriculum, it did not significantly influence or greatly contributed to their knowledge. It can be inferred that several factors must have contributed to this result. It could be possible that the respondents have low appreciation on nature and they are passive every time environmental lessons are taken up in the class. It can also mean that they need interesting and localized supplementary materials on environment so that they can relate with the local problems and issues. It can further mean that teachers need to introduce new teaching approaches on environmental issues and problems. Learners are always amazed with new and innovative approaches in teaching and learning. An innovative approach in curriculum integration [15], resulted to an increased knowledge of learners. It introduced varied teaching methodologies like cooperative learning, authentic assessment, and reflection. In this innovative approach, it used integrated themes in a multi-disciplinary concepts, hold team teaching or in a single classroom setting and use of sequential, thematic units of study or independent activities. These activities develop the capacity of students to associate with their own community through genuine learning experiences.

Other literatures support the findings. A study Edsand and Broich [29] investigated the extent of environmental education (EE) at school on the variation in environmental literacy of 15-year-olds. Similar to this study, it found a weak evidence that environmental education can promote a higher level of environmental awareness. Authors further claimed that environmental education is never a magic bullet in promoting environmental literacy among students. They cited probable factors such as socio-economic status, stronger

student science abilities, parent characteristics, and a few school-level characteristics such as quality of education resources and school ownership whether public or private.

The result however among High school students show significant differences in both knowledge gain and attitudes of students with an increase of 22% after they completed the environmental science course [30]. This was even more evident in the favorable environmental attitudes of the students. A significant correlation between pretest knowledge scores and pretest attitude scores and between posttest knowledge scores and posttest attitude scores were noted. In both cases, students having higher knowledge scores had more favorable environmental attitudes compared with students with lower knowledge scores.

4. CONCLUSION

After a thorough analysis of the results, the study concludes that the respondents are well aware of their local environmental issues and problems on air pollution, rampant use of plastics and its ill effects, and water pollution. The mode of integration of environmental issues and problems in the curriculum is moderate. Curriculum integration were on developing the sense of empowerment among students to become environmentally sensitive, and making environmental issues part of the tests and other forms of assessments in the class. Both the knowledge and attitude of the respondents on environmental issues and problems are fair. Respondents were fairly knowledgeable on restoration of environment on severe flooding in the late 1980s and early 1990s was not caused by illegal logging, the practice of kaingin does not affect the soil quality, and burning waste is prohibited. On the status of biodiversity, respondents have fair knowledge on adopting sustainable and climate-friendly practices is not a way of protecting biodiversity, Philippines has a continues destruction of resources that leads to about 700 threatened species, Philippines is one of the 18 mega countries with 2/3 of the earth's biodiversity and between 70-80% of world's plant and animal species, and Philippines is a biodiversity 'hotspot' because of poverty, negative activities, and increasing population. Respondents had fair attitude on human beings are superior and they rule over the rest of nature, factories can openly emit their fumes in the air, and throwing any waste on the river is the most convenient way to manage garbage. The study also concludes that there is a significant positive relationship between integration of environmental education and attitude on environmental issues and problems, and between attitude and knowledge. And there is a highly significant positive relationship between attitude and knowledge. It is also concluded that the integration of environmental education has significant influence or significantly contribute to the attitude towards environmental issues and problems. On the other hand, the integration has no significant influence or does not contribute to the knowledge on restoration on environment and status of biodiversity. This study recommends 1.) a review of the teaching approaches to be used in teaching environment issues and problems, and 2.) a further study be made to determine possible factors that might affect the influence of integration of environmental education to the knowledge of the learners. This would be significant because a higher influence would mean a higher and positive behavior towards the environment.

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