

Effectiveness of the Environmental Education Program in Enhancing Awareness, Comprehension, and Competence of the Middle-school Children of Bicol University

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Abstract

The study assessed the effectiveness of Environmental Education (EE) in enhancing the awareness, comprehension, and competence of middle-school children's EE skills in Bicol University College of Education Integrated Laboratory School, Daraga Albay, Philippines. The developmental-descriptive-evaluative research method was used alongside quantitative and qualitative approaches involving 36 Grade 6 pupils, 10 faculty members randomly selected, and one administrator. Results revealed that the children were slightly aware of the EE concepts, with full comprehension of EE, and moderately competent on the EE skills before the intervention. The program implementation improved the awareness, comprehension of EE concepts, and competence in EE skills. Five major themes emerged along good practices observed in the EE program implementation: instructional materials, delivery of the lesson, interaction with children, assessment of outputs, and collaboration with stakeholders. Documented good practices contributed to achieving the goal of the Environmental Education Program. It is recommended that a comprehensive EE program be developed to provide children with in-depth preparation as future responsible citizens.

Keywords: *environment, education, environmental concepts and principles, practice*

Introduction

Education is critical for promoting sustainable development and improving people's capacity to address environmental and development issues. Sustainable Development Goal 4 seeks to ensure full enjoyment of the right to education as fundamental to achieving sustainable development. This is in line with the United Nations, Scientific and Cultural Organization's (UNESCO) mandate to lead the global education 2030 agenda. Thus, an urgent need to educate humankind on conservation and sustainable uses of natural resources through environmental education has been accepted as a worldwide necessity. Environmental Education (EE) refers to the learning process that increases people's knowledge and awareness about the environment and its associated challenges. It develops the necessary skills and expertise to address the challenges and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action. It hopes to create awareness and values among humankind to improve the qualities of life and the environment. It has the power to transform lives and society (North American Association

for Environmental Education, 2020). Environmental Education is a vital tool in creating healthier and more civically engaged communities and has been the basis of many environmental initiatives.

Coherent with the principle of sustainable development and RA 9512, An Act to Promote Environmental Awareness through Environmental Education, the education sector has to do its share because the Philippines is vulnerable to climate change disasters. One of the features of RA 9512 is a collaboration between the Department of Environment and Natural Resources (DENR) and public and private academic institutions to integrate environmental education across levels in their curricula.

Environmental Education (EE) is an essential component in a child's education to develop adequate environmental knowledge and skills and adopt positive attitudes and behaviors to become environmentally literate. Environmental Education enables children to become socially responsible and conscientious decision-makers on the environment's future. Teaching

children to respect and understand the environment and its associated problems contribute to creating socially responsible individuals and enhances the overall education experience. The children are future leaders and resource users, and key players for environmental education. Thus, children must be adequately prepared for the future they will inherit (Eco Adventures, 2016).

Bicol University College of Education maintains two laboratory schools for Basic Education as Teacher Education Institution. This is a viable setting for implementing Environmental Education Program across levels. Thus, in partnership with the Department of Environment and Natural Resources, Bicol University promoted Environmental Education across levels using the agency's developed environmental materials and programs.

The study of Athman and Monroe (2001) emphasized the elements of effective environmental education programs that need to be considered for it to succeed. These were relevance to the mission of the agency, educational objectives, and learners, involvement of stakeholders in the process, empowerment of learners, accuracy and interdisciplinary in nature, and must be evaluated with the appropriate tools.

Fisman (2005) examined the effects of an urban environmental education program on children's awareness of their local biophysical environment. The study showed a significant positive effect of the program on students' awareness of the local environment and on their knowledge of environmental concepts.

Local studies on the Effectiveness of EE programs like that of Abainza (2018) and Ante (2018) revealed that respondents were aware of basic environmental issues and had a satisfactory level of competence but were more concerned with other personal nature issues. Furthermore, the participants' and observers' feedback showed that the EE program implemented was effective in preparing vulnerable populations for environmental disasters. Likewise, EE-enhanced physical science lessons effectively developed awareness and understanding of the environmental concepts and principles. Students gained positive attitudes and behaviors.

Environmental Education in school is deemed exigent in basic education to address education priority for sustainable development. Raising environmental awareness among middle-school children and improving comprehension and competence on environmental principles may contribute to a sustainable future. Thus, this program aimed to provide EE through the children's

active involvement in various non-curricular activities. The study specifically aimed to implement and evaluate the effectiveness of an EE program in BUCE-ILS, Daraga, Albay, Philippines.

Materials and Methods

Research Design

The study used the developmental-descriptive-evaluative method in the development of the EE program for middle-school children. Developmental research focuses on designing, developing, and evaluating instructional products and processes (Richey & Klein, 2005). Likewise, it described the characteristics of the population or phenomenon being studied. Furthermore, the effectiveness of the implementation of the EE program was evaluated using a pre-test and post-test to assess children's level of awareness, comprehension, and competence in EE skills.

Research Locale and Participants

The study was conducted at Bicol University College of Education Integrated Laboratory School, Elementary Department. It involved the purposively chosen 36 Grade 6 Science Club members from among the Grade 6 pupils of Bicol University Integrated Laboratory School enrolled for School Year 2016-2017. This technique is appropriate, as confirmed by the science club advisers and head of the unit. Ten faculty members were also randomly selected, and one administrator who is the Unit Head of the laboratory school. Two (2) of the ten faculty members acted as implementers, and two (2) were observers during the actual implementation of the EE Program. These respondents were informed that they will participate in the research study and have given their consent before their study involvement.

Quantitative Instrument

A questionnaire checklist on awareness, comprehension, and competence of EE concepts was used as developed by the team to assess the respondents' level of Environmental Education. Part I of the checklist consisted of – Personal Information, Part II - Self- Competency Checklist on Awareness and Understanding of the environmental principles, and Part III- Environmental Education Test. Parts I and II were translated to Filipino by an expert to suit the level of understanding of the respondents. Part II of the instrument was used to assess pupils on their level of awareness and comprehension of

environmental education concepts. Part III assessed the level of competence on Environmental Education skills using a 15-item Multiple choice test for Grade 6 that demonstrates proper waste disposal, recognizing the importance of 3Rs, and its application to real life. The test was validated by content experts, underwent further validation by pilot testing to a group of learners, and was revised accordingly.

Qualitative Instrument. Journal entries and Focus Group Discussion (FGD) guide were used to gather qualitative data on program effectiveness. Observation and interview guides and journal writings were used to triangulate the results. The FGD guide consists of questions for pupils, teachers, and administrators, on their knowledge of environmental concepts, learning, and activities related to the environment and other home and school-based environmental practices, including significant experiences and difficulties encountered during the program implementation.

The participants in the FGD for adults include the administrator, teacher implementer, teacher observers, and science club officers for the children participants. Other faculty members of Grade 6 pupils and non-science club officers were excluded from participating.

The researchers conducted one FGD interview after the implementation of the EE program. One researcher moderated the discussion while the other researcher was present for observation and note-taking. Faculty (n=6) and children (n=6) participated in separate focus groups. After the post-program implementation, focus group responses were analyzed and coded to identify major themes. An open coding analysis was conducted by reviewing the researcher's notes, answers after every sessions' interviews, session observer's reports, and journal writings to search for common themes.

The sources of data were the following: (1) pre-test results, (2) post-test results, (3) focus group discussion, (4) student outputs, (5) journal writings, (6) observations, (7) interview, and the (8) session plans.

Data Analysis. The study used frequency count, percentage, and weighted mean to determine pupils' awareness, comprehension, and competence on environmental education concepts and skills tested using a t-test of paired two sample means. Thematic analysis was used to document the good practices at the elementary level and their contribution to the Environmental Education Program.

Results and Discussion

Environmental Education Program for the Children

Setting standards is essential for a quality environmental education program. In the Philippine context, the development of the environmental education program adheres to the standard of RA 9512, which directs the school to develop and conduct an educational program across levels. In response to this mandate, a workshop organized by the research program leader was conducted to develop an EE program. The EE program was presented, critiqued, and improved with assistance from DENR experts, BU researchers, and stakeholders. There were 10 session plans developed that discussed the seven environmental principles, namely: (1) natures know best, (2) all forms of life are equally important, (3) everything is connected to everything else, (4) everything changes, (5) everything must go somewhere, (6) ours is finite earth, and (7) nature is beautiful, and we are stewards of God's creation.

The implementation of the EE program consisted of 5 objectives, namely: (1) disseminate the basics of environmental education, (2) organize a group of pupils to lead the promotion of environmental awareness in school, (3) create an anti-littering campaign on the school campus, (4) use the 3Rs in waste management, and (5) show appreciation of environmental stewardship. These have related activity, person/s involved, time frame, and output. There was flexibility, and detailed activities were planned together with stakeholders. Likewise, researchers did numerous meetings and consultations with the school head, faculty members, and middle-school children's Science Club officers about the EE Program.

The program's implementation was conducted for 10 sessions through the Science club organization twice a week from 4:00-5:30 pm at BUCE-ILS elementary department. The group was handled by a Teacher-implementer provided with researcher-made session plans, DENR materials, and adopted rubrics to assess pupils' performance. An observer was present in each session.

Throughout the 10 sessions, the discussions of the 7EE Principles were divided among the first 4 sessions. After a 30-min lecture-discussion for every session, the pupils worked to create an output or product. Moreover, children wrote journals related to their learning and experiences.

The subsequent sessions (sessions 5-10) were devoted to the club's organization, anti-littering

campaign, discussion of RA9003, and hands-on activity on the application of the 3Rs. Interesting and engaging activities were demonstrated in the output through collage, poem thru bookmarks, jingle, poster and slogan making; organizing green warriors club; planning action plan; doing campaign involving all children of the school and faculty concerned, recycling materials, exhibiting outputs through culminating activity in the form of exhibits and program, and cleanest classroom contests. The culminating activity was participated by the entire elementary school department led by the school head. The developed environmental program conforms to Athman and Monroe (2001), evident of most of the elements of effective environmental education programs.

Effectiveness of Implementation of the EE Project for Middle-school Children

Prior to the intervention, children were slightly aware of the 7 environment principles on 15 environmental statements. Table 1 reveals an increase of 20.56 % on the correct responses of the middle-school children's awareness after the intervention. It means that by allowing pupils to perform varied tasks as an application of discussed principles during the intervention, they could connect their experiences to the environment's concepts and principles and see how these are related. In turn, they appreciate the importance of the Environmental Education program as manifested by enhancing their awareness after the intervention. The pupils became moderately aware as compared to slightly aware before the intervention. This is supported by Hassan and co-researchers (2009) when they said that the aspect of consciousness along with the knowledge, understanding, the change of attitude, and physical participation is vital to students in developing their high awareness towards the environmental aspect, and directly apply the values in their lives. The results suggest that the children developed an awareness of the different environmental principles after the discussions of the concepts and hands-on activities. The varied performance tasks coupled with other tasks such as the anti-littering campaign and creating the Green warriors club enhanced pupils' awareness of the environment concepts. These environmental behaviors and related factors affect the program (Tung *et al.*, 2002).

Meanwhile, Table 2 results showed a positive increase in their pre-test and post-test results, although the post-test increase is not substantial, ranging from 3.63 to 3.75. Both the pre-test and post-test results are interpreted as I know and understand it well. However, looking at Table 4 on the t-test result would show

that the gain in the mean scores between the pre-test (10.17) and post-test (13.08) is significant. These results show that the EE program effectively enhanced the comprehension of environmental education of middle-school children. These were confirmed by the children's sample answers during the FGD when they were asked, "What environmental concepts/principles do you recall most easily? Why?". The journal entries can be used to describe the change in comprehension on environmental education concepts such as these: "*It was really sad when I found out that the earth is slowly dying because of the doing of man*"; "*I have experienced excitement and happiness because many projects were examples of reducing wastes, it helps mother earth.*"

Table 3 presents a comparison of the pre-test and post-test results in the 15-item multiple-choice type of test that measures the level of competence on environmental education skills and principles of middle-school children. After the implementation of the project, 97.22% of the pupils became highly competent as revealed by the post-test.

The results in Table 4 further confirmed this gained mean score of 2.91. Moreover, the t-test results showed a significant level of competence in EE skills. There was a statistically significant difference between the mean scores of the pre-test and post-test for the comprehension of EE concepts ($t(35) = 8.91, p < .05$) and competence on EE skills ($t(35) = 10.37, p < .05$). It means that the EE program rendered a positive effect on middle-school children. As a demonstration of understanding of good practice continues, students' environmental competence (Mirzayeva, 2020) broadens and deepens.

Furthermore, when pupils were asked the question during the focused group discussion conducted by the researchers about "*Which activities related to the environment do you like best? Why?*" One of the answers was, "*Anti-littering campaign is an eye-opener activity for all the ILS pupils. This activity made the ILS pupils aware of what's happening to our environment and what they can do in their little way in protecting our environment by proper disposal of the garbage and reducing the waste in their respective classroom/home.*" The effect of the intervention may be further shown in terms of the mean gain between the pre-test and post-test for comprehension of EE concepts and competence on EE skills.

The change in the pupils' scores in the post-test over the pre-test represents a substantial value that can be attributed to the intervention. The result showed that the mean gain for the comprehension of EE concepts and

Table 1. Middle-school Children's Level of Awareness in the Pretest and Posttest on Environmental Concepts and Principles, Self-Assessment

Statements Related to the 7 Environmental Principles	Pre-test			Post-test		
	F of correct answers	%	Interpretation	F of correct answers	%	Interpretation
1. Nature has its mechanism to maintain balance, such as in the conduciveness of environment for growth and reproduction and feeding relationship between and among organisms	9	25.00	Very Little Aware	21	58.33	Moderately Aware
2. Practices such as the use of chemical pesticides, use of crude oil, burning of wastes go against the natural processes and lead to an ecological backlash	19	52.78	Moderately Aware	23	63.89	Moderately Aware
3. Unlovely, wriggly, and troublesome creatures such as earthworms, snakes, spiders, and others are a necessary part of nature.	13	36.11	Slightly Aware	24	66.67	Moderately Aware
4. Both big and small creatures have invaluable roles in the ecosystem, and therefore in human life.	16	44.44	Slightly Aware	19	52.78	Moderately Aware
5. Deforestation in the mountains may adversely affect the lowlands through erosions, floods, and drought because all components of the ecosystem are linked to each other.	13	36.11	Slightly Aware	19	52.78	Moderately Aware
6. Organisms are linked to another through feeding, to the environment, and the environment is also affected by the organisms living in it, including the humans through their actions and practices	8	22.22	Slightly Aware	20	55.56	Moderately Aware
7. Although organisms evolve through time through mutation, chemicals like pesticides induce insect mutations which go against the natural checks and balances.	13	36.11	Slightly Aware	20	55.56	Moderately Aware
8. Flora and fauna and the environment change with the seasons.	9	25.00	Not Aware	18	50.00	Slightly Aware
9. Wastes thrown away and disappear do not cease to exist; they are dispersed in the atmosphere or remain in the ecosystem in another form, whether in useful or hazardous form.	13	36.11	Slightly Aware	19	52.78	Moderately Aware

Table 1 (Continuation). Middle-school Children's Level of Awareness in the Pretest and Posttest on Environmental Concepts and Principles, Self-Assessment

Statements Related to the 7 Environmental Principles	Pre-test			Post-test		
	F of correct answers	%	Interpretation	F of correct answers	%	Interpretation
10. Classification of wastes facilitates their proper disposal and minimizes the entry of toxic substances in the ecosystem but does not eliminate wastes from the ecosystem.	14	38.89	Slightly Aware	21	58.33	Moderately Aware
11. Population growth, polluting technologies, and consumerist lifestyle contribute to the depletion of the earth's limited resources.	14	38.89	Slightly Aware	19	52.78	Moderately Aware
12. Although renewable resources can be replenished, the rate of consumption or exploitation should be balanced to the rate of replenishment.	9	25	Not Aware	20	55.56	Moderately Aware
13. Humans cannot live without nature so they should not destroy or ravage it but rather take it off.	12	33.33	Slightly Aware	20	55.56	Moderately Aware
14. All faiths, whether religious or tribal beliefs, teach that everyone should respect all life and the order of nature and reject those that degrade the environment and human condition.	10	27.78	Slightly Aware	19	52.78	Moderately Aware
15. Humans as beings gifted with reason and free will have dominion over all creatures and are capable of using these creations responsibly to their advantage.	19	52.78	Moderately Aware	20	55.56	Moderately Aware
Overall	12.73	35.37	Slightly Aware	20.13	55.93	Moderately Aware

Rating Scale: 1-25=Not Aware 26-50=Slightly Aware 51-75=Moderately Aware 76-100=Highly Aware

competence in EE skills indicated improvement due to the project.

By allowing pupils to participate in doing performance tasks, such as making a collage, poem thru bookmarks, jingle making, poster and slogan making, organizing green warriors club, planning action plan, doing the campaign, recycling materials, exhibiting outputs through culminating activity, they were able to connect their experiences to the environmental concepts in the lesson such that they were able to see how they are related. In turn, they learned about the 7EE principles. This was demonstrated in their journal writings.

I am so happy because I learned so many different things in every session, and we enjoyed the different kinds of activities that we had done.

I have learned so many things about nature, recycling, its causes, and effect. I learned about taking care of mother earth because everything is important and has an end. Recycling made me realize that I shouldn't spend too much on stuff that I may already have.

During the focus group discussion with the children, they could readily recall/recite the 7EE principles. When asked which activities were related to the environment

Table 2. Middle-school Children's Level of Comprehension in the Pre-test and Post-test on Environmental Concepts and Principles, Self-Assessment

Statements Related to the 7 Environmental Principles	Pre-test		Post-test	
	Weighted Mean	Interpretation	Weighted Mean	Interpretation
1. Nature has its mechanism to maintain balance, such as in the conduciveness of environment for growth and reproduction and feeding relationship between and among organisms	3.42	I know this well	3.78	I know and understand this very well
2. Practices such as the use of chemical pesticides, use of crude oil, burning of wastes go against the natural processes and lead to an ecological backlash	3.86	I know and understand this very well	3.92	I know and understand this very well
3. Unlovely, wriggly and troublesome creatures such as earthworms, snakes, spiders, and others are a necessary part of nature.	3.86	I know and understand this very well	3.92	I know and understand this very well
4. Both big and small creatures have invaluable roles in the ecosystem, and therefore in human life.	3.50	I know and understand this very well	3.75	I know and understand this very well
5. Deforestation in the mountains may adversely affect the lowlands through erosions, floods, and drought because all components of the ecosystem are linked to each other.	3.44	I know this well	3.53	I know and understand this very well
6. Organisms are linked to another through feeding, to the environment, and the environment is also affected by the organisms living in it, including the humans through their actions and practices	3.81	I know and understand this very well	3.86	I know and understand this very well
7. Although organisms evolve through time through mutation, chemicals like pesticides induce insect mutations which go against the natural checks and balances.	3.81	I know and understand this very well	3.81	I know and understand this very well
8. Flora and fauna and the environment change with the seasons.	3.53	I know and understand this very well	3.83	I know and understand this very well
9. Wastes that are thrown away and disappear do not cease to exist, they are dispersed in the atmosphere or remain in the ecosystem in another form, whether in useful or hazardous form.	3.78	I know and understand this very well	3.81	I know and understand this very well
10. Classification of wastes facilitates their proper disposal and minimizes the entry of toxic substances in the ecosystem, but does not eliminate wastes from the ecosystem.	3.36	I know this well	3.44	I know this well
11. Population growth, polluting technologies, and consumerist lifestyle contribute to the depletion of the earth's limited resources.	3.44	I know this well	3.44	I know this well
12. Although renewable resources can be replenished, the rate of consumption or exploitation should be balanced to the rate of replenishment.	3.36	I know this well	3.58	I know and understand this very well

Table 2 (Continuation). Middle-school Children's Level of Comprehension in the Pre-test and Post-test on Environmental Concepts and Principles, Self-Assessment

Statements Related to the 7 Environmental Principles	Pre-test		Post-test	
	Weighted Mean	Interpretation	Weighted Mean	Interpretation
13. Humans cannot live without nature, so they should not destroy or ravage it but rather take it off.	3.86	I know and understand this very well	3.92	I know and understand this very well
14. All faiths, whether religious or tribal beliefs, teach that everyone should respect all life and the order of nature and reject those that degrade the environment and human condition.	3.78	I know and understand this very well	3.83	I know and understand this very well
15. Humans as beings gifted with reason and free will have dominion over all creatures and are capable of using these creations responsibly to their advantage.	3.58	I know and understand this very well	3.86	I know and understand this very well
Overall	3.63	I know and understand this very well	3.75	I know and understand this very well

Rating Scale: 1.00-1.49 = I do not know this yet, 1.50-2.49 = I know this partly, 2.50-3.49 = I know this well, 3.50-4.00 = I know and understand this very well

Table 3. Pre-test and post-test performance on environmental education skills

Range of Scores	Pre-test		Posttest		Description
	f	%	f	%	
12-15	10	27.78	35	97.22	Highly Competent
8-11	23	63.89	1	2.78	Competent
4-7	2	5.56	0	0.00	Moderately Competent
0-3	1	2.78	0	0.00	Less Competent
Total	N=36	100	N=36	100	

Table 4. Mean gain for Comprehension EE Concepts and Competence on EE Skills.

Indicators	No. of items	Pre-test	Post-test	Mean Gain
		Mean Score	Mean Score	
Comprehension of EE concepts	15	5.31	8.39	3.08
Competence in EE skills	15	10.17	13.08	2.91

they liked best, they pointed out the culminating activity, anti-littering campaign, and exhibit. Their reasons include being able to provide information to others, show their hard work and efforts, able to express their ideas d). able to showcase what they have learned. Active involvement of the students, faculty, and staff in practical activities relating to environmental concerns can develop better understanding and skills, increase awareness and values that are crucial for attaining the broader goal of sustainable development.

Good Practices and its Contribution to the Environment Education Program

Good practices facilitate learning and bring advantage in developing and enhancing the awareness and comprehension of environmental concepts and environmental skills. Based on the observer's notes, interview, and FGD results with the stakeholders, five major themes emerged along the good practices observed in the implementation of the EE program. These are on instructional materials, delivery of the lesson, interaction with the pupils, the assessment of the outputs and the collaboration with stakeholders.

The availability of the instructional materials, DENR EE materials, and session plans greatly helped facilitate smooth discussion of the implementer in understanding EE concepts, enhancing the competence on EE skills,

Table 5. Summarized Good Practices noted by Stakeholders and Teacher Observer

Area	Teacher Observer/Stakeholders
Instructional Materials	<ul style="list-style-type: none"> Used instructional videos and PowerPoint presentations made the 7 EE principles clearer and more understandable. Video developed by the BU-College of Science facilitated the understanding of concepts and captured the pupils' interest. Availability of the IMs facilitate the implementation of the EE program Various ICT materials such as PPT, videos, and electronic versions of DENR EE materials facilitate the EE program's implementation. Session plans developed by the researchers facilitated the discussion of EE concepts.
Delivery of the Lesson	<ul style="list-style-type: none"> The teacher has a mastery of the EE concepts/principle and provided real-life examples. Teacher-implementers' preparedness and mastery of the lesson on EE concepts help facilitate the pupils' teaching-learning process along with environmental education. The teacher unlocks unfamiliar words for a better understanding of the EE concepts. Provided guide questions before letting the pupils watch the video about the ozone layer. Explained the concepts/principles thoroughly. The teacher-implementer used varied multi-media materials and strategies which encourage pupils' active learning. The EE concept/principle is processed through authentic assessment tasks. Utilized concrete examples to widen pupils' understanding of the EE concepts. The teacher-implementer encouraged pupils to use raw/ natural materials, used and recycled materials to make outputs.
Engagement of the children in various activities	<ul style="list-style-type: none"> The activity let the pupils collaborate and let them appreciate the importance of each organism in our environment. Group activity made the session more meaningful for the pupils. Enthusiasm among the pupils is seen while doing the activity. Each pupil is involved in making the product. The pupils are very eager to accomplish their tasks on time. Cooperation among the pupils can be seen as they do the tasks. The activity on the Anti-littering campaign promotes awareness about the environment through symposium motivated pupils to perform their responsibilities. Science and Math club members organized themselves (Green Warriors Club) to show commitment to the EE advocacy of Bicol University. Culminating activity and exhibit showcase pupils' outputs.
Assessment	<ul style="list-style-type: none"> The collage activity helped the pupils see every organism's importance and realize that all forms of organisms are essential. The jingle/poem-making activity boosted the creativity of the pupils. The activity allowed the pupils to express their thoughts about proper waste management and the management of limited resources. The activity encouraged the pupils to be more creative. Authentic assessment includes journal writing and rubrics to assess pupils' output, such as collage, poster, slogan, poem, and jingle, to address pupils' diversity. Translation of the assessment tool/test written in English to the Filipino language
Collaboration with the stakeholder	<ul style="list-style-type: none"> Science and Math Club was used to promote EE Program. Reducing materials using proper waste management. The school-wide Classroom Zero Waste Contest was conducted for maximum pupils' and teachers' participation to ensure the EE program's better implementation. An action plan was prepared by the officers of the Green Warriors Club in collaboration with the teacher advisers to sustain the implementation of the EE program.

including implementing the program. The teacher-implementer played an important role in implementing the program. Mastery of the lesson and the EE concepts, using varied activities, instructional materials, and the authentic assessment made the teaching-learning process easy for the children, including the use of different strategies in teaching the 7 EE principles with the aid of varied multimedia materials developed.

Connection to nature is an important predictor of environmentally responsible behavior (Frantz & Meyer 2014; Gosling & Williams, 2010). Using natural materials like leaves and flowers made the children appreciate the beauty of natural materials. Utilizing concrete examples widened the understanding of the concepts and contextualized the learning process.

Engagement of the children during the activities is another observed good practice. Group activity allowed collaboration and cooperation making them enthusiastic in performing tasks. The outputs were exhibited during the culminating activity. Anti-littering campaign activity motivated pupils to recognize their role in fulfilling their responsibilities in promoting environmental education.

The implementation of the EE program through the Science and Math Club yielded active participation of the children, faculty, and administrators. They observed that elementary teachers and administrator are actively involved in the EE activities, which motivated active participation, particularly in the Zero Waste Classroom Contest facilitated by the Green Warriors Club to show commitment to the EE advocacy of Bicol University. Educated people are obliged to educate others on the adverse effect of the environment (Sola, 2014). It is said that caring for the environment will not require one to become an environmental activist but create awareness of one's environment. Sola (2014) stated that an educated public could be one of the most powerful weapons in the world's battle against harming the environment.

Conclusion and Recommendations

The study concluded that children had enhanced the awareness, comprehension, and competence on Environmental concepts and skills after implementing the environmental education program. Strong support from all sectors is needed to implement an EE program. This study recommends that a comprehensive school-wide sustainable environmental education program, incorporating the developed Environmental Education program, be provided to children with in-depth

preparation as future responsible citizens.

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