

Environmental Protection through the “Grinning Bulilit” Project in Bacnotan, La Union, Philippines

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The growing concern about the deteriorating condition of the environment in the Philippines and even worldwide is alarming. Providing the children with environmental education at the earliest possible age could significantly help in imbuing the environmentally-oriented values in them, for example, the implementation of “Grinning Bulilit” project in elementary schools of Bacnotan, La Union, Philippines. The project implementation provided and enhanced pupils’ natural science background and experiences which are needed to make environmentally responsible decisions. The pupils were transformed from kids with low level of environmental literacy to committed and responsible citizens. The leadership skills of the BS Environmental Science students were significantly developed as they acted as facilitators/resource speakers. These altogether contributed in paving the way towards environmental protection system within the municipality.

1. Introduction

“To ensure environmental sustainability” is an essential thread that encompasses all the others. There is now a growing concern about the deteriorating condition of the environment. Rapid depletion of the country’s natural resources has pervasively continued even after the launching of environmental management initiatives in the early 1970s. With the disastrous flash flood in Ormoc City, the onslaught of landslide in Cherry Hills, the devastating catastrophe of Typhoon Yolanda, among others, it is imperative to have an internal assessment about the abuse of mother earth. Indeed, our immediate environment does not exist within a vacuum, but is affected by the larger realities nationally and globally.

The Philippine government recognises that education is crucial to the development of the Filipino. Educating the children on environmental concerns at the earliest possible age could significantly help inculcate environmentally-oriented values in them. The home, the community and the school are the basic spheres of environment education. Efforts in these spheres must be linked to create appropriate perceptions of environmental problems as well as solutions on environmental awareness.

In the elementary curriculum, pupils are taught about the environment only during their science class only during their science class. The classes are concentrated on the ecosystems with less regard to the issues and problems confronting the natural resources. The pupils’ appreciation and awareness on nature is limited. There is a need to expose their minds and have an in-depth perception of what the real situations are and how these affect them. The relevance of children’s participation to sustainable development has been an increasing realisation of the need to generate participation of vulnerable populations in the design. Implementation of projects including young people in local initiatives, can create feelings of solidarity and respect for one’s environment, for public institutions, and for public authorities that run them and serve them.

“Grinning Bulilit” project, an extension project, is envisioned to foster education program that is youth-led and focused on the environment. In its context, children (referred to as “bulilit” in Filipino) should be educated with environmental information as well as issues and concerns to enable them to initiate, implement and expand at their own level environmentally oriented projects and activities.

This project will enable the pupils to be more appreciative towards nature through the sound environmental education. Improvements in the pupil’s environmental literacy will be gauged on their active participation to activities.

2. Methodology

The “Grinning Bulilit” project is implemented as a continuing extension activity of the Institute of Environmental Studies through its allied organisation, the Young Earthsavers’ Society (YES). It is conducted in selected elementary schools within the municipality of Bacnotan, La Union. Bacnotan (Figure 1) is a municipality in La Union belonging to Ilocos Region. Schools, in coordination with its principal/head and teachers in-charge, were selected primarily based on needs assessment.

The conduct of the project is facilitated by both the faculty members and the students. The students, particularly the Bachelor of Science in Environmental Science students enrolled in ENSE 101 (Community Development and Extension Education), are tapped as resource speakers or lecturers on assigned environmental topics.

For the past five (5) years, there were six (6) elementary schools in the municipality of Bacnotan adopted in the implementation of “Grinning Bulilit” project. These include: Bacnotan Central School, Bitalag Integrated School, Cabaroan Elementary School, DMMMSU-NLUC Elementary Laboratory School, Paratong Elementary School, and Salincob Elementary School (Figure 2).



Figure 1: Map of the Philippines showing the municipality of Bacnotan

A total of 546 pupils have participated in the project (Table 1) for the last five years of project implementation. These are comprised by Grade IV, V, and V pupils and duly supervised by their respective class advisers. The participation of class officers was also requested for they can be tapped in the re-echo of the learning they have acquired.

Participatory lecture-discussion was utilised as a primary means of conveying environmental information to the children with the aid of skills demonstrations, film viewing and games. PowerPoint Presentation on environmental topic was prepared and used for the discussion. The topics usually discussed in the project are listed in Table 2, describing its coverage and objectives. Other environmental topics are discussed based on the needs and applicability in the schools.

For greater appreciation, outside activities were carried out with the assistance of barangay officials. This taught and familiarised the pupils in engaging in environmentally sustainable practices.

To determine the environmental literacy of the pupils on the identified topics, pre and post-tests were given to them. Feedbacks from the pupils, teachers, student-teachers, the Institute and the families of the pupils were also considered.



Figure 2: Map of Bacnotan, La Union showing the schools adopted for the “Grinning Bullit” project

Table 1: Number of pupil-participants from adopted schools

Schools	No. of Pupil-Participants
Bacnotan Central School	188
Bitalag Integrated School	109
Cabaroan Elementary School	81
DMMMSU-NLUC Elementary Laboratory School	71
Paratong Elementary School	69
Salincob Elementary School	28
TOTAL	546

Table 2: “Grinning Bullit” project topics

Lecture Topics	Description	Objectives
Disaster Preparedness	Disasters and its risks, risk reduction through preparedness	Enable participants to develop preparedness especially on the onset of a disaster
Environmental Pollution	Causes and effects of pollution in the air, water and land; solutions	Discourage the activities and use of materials that causes pollution
Global Warming and Climate Change	Causes and effects of global warming and climate change, including the mitigation measures	Encourage to resort into environmentally-sustainable practices
Ozone Science	Causes and effects of ozone depletion	Discourage the use of and practices that emits ozone depleting substances
Waste Management	Classification of solid wastes, proper disposal practices	Encourage waste minimisation and other proper disposal practices

3. Results and Discussion

3.1 Areas of Learning

As can be gleaned from Table 3, all the adopted schools were taught with the topic on Disaster Preparedness and Waste Management. Philippines is prone to disasters such as typhoon and earthquake. The preparedness of each one even the pupils are important for their safety. On the other hand, the problem on wastes is nationwide, thus the discussion on this topic is important. Pupils were taught how to classify their wastes and encourage waste segregation and composting of biodegradables. In addition, the provisions of Republic Act No. 9003 (Ecological Solid Waste Management) were conveyed especially the prohibited acts pertaining solid wastes such as burning. Burning contributes to pollution and greenhouse gas emissions (Miller and Spoolman, 2011).

Table 3: Topics discussed in each adopted school

Schools	Topics Discussed
Bacnotan Central School	Disaster Preparedness, Environmental Pollution, Global Warming & Climate Change, Waste Management
Bitalag Integrated School	Disaster Preparedness, Environmental Pollution, Global Warming & Climate Change, Waste Management, Water Conservation
Cabaroan Elementary School	Disaster Preparedness, Global Warming & Climate Change, Ozone Science, Waste Management
DMMMSU-NLUC Elementary Laboratory School	Disaster Preparedness, Global Warming & Climate Change, Ozone Science, Waste Management
Paratong Elementary School	Disaster Preparedness, Mangrove Resource Management, Waste Management
Salincob Elementary School	Disaster Preparedness, Global Warming & Climate Change, Waste Management

The topic on Global Warming and Climate Change was majorly discussed, which were 5 out of 6 of the adopted schools. This topic is considered as a global issue, thus, the participation of everyone is important. The change is unprecedented and has been induced by humankind's carbon-heavy lifestyle—only a massive and immediate reversal in this can halt the heating up of the planet (Yarrow, 2009).

Certain topics were discussed in line to environmental celebration for a specific month. The topic on Disaster Preparedness/Disaster Risk Reduction and Management is discussed every July which is the Disaster Consciousness Month; Ozone Science is discussed during the Ozone Month, which is September; and Climate Change is discussed every November, which is the Climate Change Consciousness Month. Other topics were discussed based on need and applicability. In Paratong Elementary School, Mangrove Resource Management was discussed in consonance to its location which is near the coastal/estuarine areas.

Overall, through these topics, the role of the citizens, including children, is emphasised in addressing environmental issues and concerns. Through environmental education, pupils became environmentally conscious. Environmental education allows them to explore environmental issues and engage in problem solving to improve the environment (Environmental Protection Agency, 2017). The potentials of students-lecturers were brought out and have developed their leadership and communication skills.

3.2 Activities Conducted

Lecture discussions were conducted in all the adopted schools. Enhancement activities were done by involving the pupil-participants (Table 4) in coordination and with the assistance of school heads and barangay officials. Their participations can develop their sense of responsibility towards environmental protection.

Bacnotan Central School is located near the town proper of the municipality, which is considered populated. In relation to waste management, their conduct of roadside clean up not only contributed to the cleanliness of the town, but have inculcated in the pupils the sense of responsibility in managing their wastes. These wastes can clog canals and increase the probability of flooding.

The demonstrations on First Aid Application to pupils of Bitalag Integrated School and Cabaroan Elementary School have provided them the skills especially on emergency situations. Students who demonstrated First Aid Application have undergone training under Disaster Risk Reduction and Management Council of San Juan, La Union. This training ensures correct method demonstration

The conduct of tree planting and mangrove planting by pupils of DMMMSU Elementary Laboratory School and Paratong Elementary School familiarised them on the role of these trees on ecosystem. This can help them develop sense of responsibility and commitment to protect these resources.

The demonstration on composting to pupils of Salincob Elementary School provided them skills in managing biodegradable wastes. This lessened the problem on wastes, where biodegradables can be utilised as compost to fertilise their plants.

Conducting environmental education, especially with an outdoor learning component, helps children understand scientific concepts more easily (Yildirim and Akamca, 2017).

Table 4: Activities conducted in the adopted schools

Schools	Enhancement Activities Conducted	Output
Bacnotan Central School	Roadside Clean Up	1,200 meters road distance cleaned
Bitalag Integrated School	First Aid Application Demonstration	Skill on Disaster Preparedness
Cabaroan Elementary School	First Aid Application Demonstration	Skill on Disaster Preparedness
DMMMSU-NLUC Elementary Laboratory School	Tree Planting	150 mahogany seedlings planted
Paratong Elementary School	Mangrove Planting	200 propagules planted
Salincob Elementary School	Demonstration on Composting	Skill on Composting

3.3 Evaluation of Environmental Literacy

As revealed in their pre-test and post-test (Table 5), the top three topics that posted the highest percentage difference on pre-test and post-test were topics on Ozone Science (53.23 %), Disaster Preparedness (50.22 %), and Waste Management (40.02 %). This denotes that the conduct of “Grinning Bulilit” project has helped the pupils increase their environmental literacy. The gain in environmental literacy among pupils can promote actions that lead to environmental protection within the municipality of Bacnotan.

Table 5: Average scores in the pre-test and post test

Test (10 items)	Topics						
	Disaster Preparedness	Environmental Pollution	Global Warming & Climate Change	Mangrove Resource Management	Ozone Science	Waste Management	Water Conservation
Pre-test	4.51	6.02	6.17	5.32	4.20	5.56	7.43
Post-test	9.06	9.23	9.24	8.83	8.98	9.27	9.32
Difference	4.55	3.21	3.07	3.51	4.78	3.71	1.89
Percentage Difference	50.22	34.78	33.23	39.75	53.23	40.02	20.28

3.4 Project Impacts

Environmental education at the early childhood level has the potential for greatly enhancing the development of the young child. It is designed to foster positive attitudes and values about the world of nature and a sense of responsibility toward the natural environment. At the same time, it has the potential for developing an environmentally concerned citizenry that will relate to the earth in a more harmonious way than that of the present generation (Wilson, 1994).

Based from the feedbacks of the pupils and teachers, the “Grinning Bulilit” project has helped in the adoption of children of different environmental management initiatives. The project does not benefit only the school but also the pupils’ respective home. The adoption of practices that promotes environmental protection has increased. In relation to their increased environmental literacy, pupils were able to translate this literacy into actions.

In relation to the topic on Waste Management discussed, which is one of the top three topics that posted the highest gain in terms of pupils’ environmental literacy, its noted that all adopted schools have started practicing waste segregation and recycling (Table 4). Recycling contributes in decreased use of matter and energy resources and reduces pollution and natural capital degradation (Miller and Spoolman, 2011). Increase in recycling target has significantly affected the decrease in waste management cost (Tan et. al, 2015).

Composting is practiced in Salincob Elementary School. These activities have supported the “Zero Waste Program” of the municipality aiming to reduce wastes for landfill disposal to zero. These schools were categorised both child-friendly and eco-friendly schools.

Table 6: Best practices in the adopted schools

Schools	Best Practices
Bacnotan Central School	waste segregation, recycling
Bitalag Integrated School	waste segregation, recycling
Cabaroan Elementary School	waste segregation, recycling
DMMMSU-NLUC Elementary Laboratory School	waste segregation, composting, recycling, regulated plastic use, tree parenting
Paratong Elementary School	waste segregation, recycling
Salincob Elementary School	waste segregation, composting, recycling

The Don Mariano Marcos Memorial State University-North La Union Campus (DMMMSU-NLUC), which is the main institution of DMMMSU-NLUC Elementary Laboratory School, was awarded the regional winner in the “Search for Most Sustainable and Eco-friendly School” in 2013 and bagged fourth place in the national level. The conduct of the project has contributed in this achievement as it promotes environmental protection even to kids. The school has adopted a regulation on plastic use wherein plastics are banned every Wednesday and Friday within the campus. To date, the fast food centre has totally banned the use of plastic. Foods can be taken out through their own lunch boxes or through microwavable containers for an additional cost. This would encourage constituents to provide their own containers, lessening the generation of plastic wastes. Further, annual tree planting with parenting is catered by the school aimed to attain a greener and cleaner environment. To date, the school is once again a national contender for the “2017 Search for Most Sustainable and Eco-friendly School.”

Promoting environmental awareness and practices like campaigns is considered a strong effort especially if done by other agencies/institutions. The strong leadership is one of the success factors for schools to participate in and organise green activities (Wong et. al, 2017).

4. Conclusion

The involvement of everyone, even the children, is of significance. Educating the children on environmental issues and concerns will likely develop a sense of responsibility in them to take part towards environmental protection. This will not only benefit themselves but everyone that is on this Earth.

The conduct of “Grinning Bulilit” project has contributed in the environmental protection in the municipality of Bacnotan, La Union. Through environmental education, pupils’ environmental literacy had increased, which enables them to translate these knowledge and awareness into environmentally sustainable practices.

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References

- Environmental Protection Agency, 2017, What is environmental education <www.epa.gov/education/what-environmental-education> accessed 08.10.2017.
- Miller G.T.Jr., Spoolman S., 2011, Introduction to environmental science, Pasig, Philippines, 578, 584.
- Tan S.T., Ho W.S., Haslenda H., Lim J.S., 2015, Waste management pinch analysis (WAMPA) with economic assessment, Chemical Engineering Transactions, 45, 145-150.
- Wilson, R. A., 1994, At the early childhood level, Day care and early education, 22, 23-25.
- Wong W.Y., Phang F.A., Ho C.S., Musa A.N., 2017, Sustainable and Low Carbon Practices at Schools in Iskandar Malaysia, Chemical Engineering Transactions, 56, 313-318.
- Yarrow J., 2009, Eco-LOGICAL! London, United Kingdom.
- Yildirim G., Akamca G.O., 2017, The effect of outdoor learning activities on the development of preschool children, South African Journal of Education, 37, 1-10.