

The Relationship of Environmental Awareness in Selected Topics in Science and Academic Performance of Education Students in Bulacan State University-Bustos Campus, Philippines

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Abstract- This research was conducted to determine the relationship between the environmental awareness in selected topics in Science and academic performance of the education students, in Bulacan State University, Bustos Campus.

To assess the level of environmental awareness of the students, the 30-item environmental awareness test was used. The said test covered five topics in Science namely: Force, Work and Energy, Energy Resources, Wave Motion, Electricity and Nuclear Energy. The environmental awareness test was developed, validated and used by the researcher. The test measure three components or level of environmental awareness namely : perceptiveness, sensitivity and imagination toward the environment.

In terms of academic performance, the general average of the grade per subject multiplied to the number of units, then divide to the total number of units of the students was obtained from the Office of the Registrar of Bulacan State University, Bustos, Bulacan.

The frequency, percentage of the students in each item of the test and the mean scores in five topics in Science were computed to determine the level of environmental awareness of the students. The Pearson Product Moment Correlation was used to identify the relationship existing between the level of environmental awareness and academic performance of the third year education students, generalist major.

The overall mean score of 2.38 in the environmental awareness test signified that the level of environmental awareness of the education students, was in sensitivity level or component of environmental awareness.

The overall general average of the students was 1.77 which signified that the education students was very satisfactory in their academic performance.

The correlation coefficient of 0.31 signified that there was positive correlation between the level of environmental awareness and academic performance of the education students in Bulacan State University, Bustos Campus.

Index Terms- Academic performance, Environmental Awareness, Environmental Education, Imagination toward Environment. Perceptiveness. Sensitivity

I. INTRODUCTION

The country nowadays is faced with a great environmental problem. Unless something is done about it, the country's ecological state is just one step behind to its doom. Environmental problems are almost always the result of human kind's developmental activity. The degradation of his environment has caused hazards to the health and life. Now, the urgency in Environmental Education (EE) has been recognized due to the increasingly pressing environmental problems besetting the country and the world. Environmental Education is the process by which people develop awareness, knowledge and concern of the environment and its diverse values and processes and learn to use this understanding to preserve, conserve and utilize the environment in its sustainable manner for the benefit of present and future generations (National Environmental Education Action Plan – Volume 1). The goals and objectives of the environmental education are to create awareness, knowledge, attitudes, skills, and participation in the care of the environment. All levels and sectors of society must be involved.

Environmental awareness means having the knowledge of the fragility or vulnerability of the environment. It is also about being conversant with the interdependence involving the mankind with his immediate surroundings (www.ask.com). Environmental awareness is also the growth and development of awareness, understanding and consciousness toward the biophysical environment and its problems including human interactions and effects. Science as one of the academic subjects of Education students in Bulacan State University should be presented in real – life situations with integration of Environmental Education which will be more stimulating and encouraging to students than abstractions or mathematical formulation. By focusing on community resources, environmental needs, problems and issues, the approach will promote community and environmental consciousness or awareness in the students leading to the development of the three components of the Environmental awareness – the *PERCEPTIVENESS, SENSITIVITY and IMAGINATION TOWARD THE ENVIRONMENT* (KEINY et.al, 1985). If some science activities are oriented to environmental needs or problems, students are able to participate and adjust to community life after school. Furthermore, the approach will help to develop the environmental awareness of the students and prepare them as future scientist for environmental work. In

addition, development of environmental awareness of the students will lead to the increase of their academic performance in school.

To determine the academic performance of the third year education students, generalist major, the general average of the grade per subject multiplied to the number of units per subject, then divide to the total number of units was obtained.

II. METHODOLOGY

Subjects of the Study

The population of this study were thirty(30) third year education students, generalist major who were enrolled during first semester, school year 2012-2013 in Bulacan State University, Bustos, Bulacan.

Instruments

The 35-item Environmental awareness test was used by the researcher to determine the level of environmental awareness of the third year education students, generalist major. The said test was developed, validated and used by the researcher. The test covered five topics in Science namely: Force, Work and Energy, Energy Resources, Wave Motion, Electricity and Nuclear

Energy. The stems of the test were in situation form followed by a question. Three options concerning the three components of environmental awareness were prepared for each item. All first options deal with perceptiveness, all second options deal with sensitivity and all third options deal with imagination toward the environment.

Statistical Treatment

The data collated were treated with the following statistics : the frequency, percentage of the population, mean scores to describe the level of environmental awareness of the third year education students, generalist major. The general average was computed by multiplying the final grade per subject to the number of units then divide to the total number of units. The Pearson Product Moment Correlation was used to determine the relationship between the level of environmental awareness and academic performance of the third year education students, generalist major.

Presentation and Interpretation of data

The following tables show the Level of Environmental Awareness of the third year Education students, Generalist major in the selected topics in Science:

Table 1

TOPIC	COMPONENT						Total
	Perceptiveness		Sensitivity		Imagination Towards Environmental		
	f	%	f	%	f	%	
I. Force, Work, and Energy							
Items (5)							
13	1	3%	0	0%	29	97%	30
14	0	0%	1	3%	29	97%	30
17	1	3%	23	77%	6	20%	30
23	0	0%	9	30%	21	70%	30
26	1	3%	5	17%	24	80%	30
Mean	-	2.71					

Topic I was about Force, Work and Energy. It was about gaining energy conservation information through seminars, proper use of heat energy and use of simple machines like can opener. The obtained mean score of **2.71** in the topic of Force, Work and Energy signified that the third year education students, generalist major were sensitive to what is happening to their environment.

Table 2

TOPIC	COMPONENT						Total
	Perceptiveness		Sensitivity		Imagination Towards Environmental		
	f	%	f	%	f	%	
II. Energy Resources							
Items (10)							
5	0	0%	29	97%	1	3%	30
6	0	0%	30	100%	0	0%	30
9	2	7%	26	87%	2	7%	30

15	0	0%	1	3%	29	97%	30
19	26	87%	3	10%	1	3%	30
20	1	3%	27	90%	2	7%	30
28	2	7%	18	60%	10	33%	30
29	0	0%	24	80%	6	20%	30
31	0	0%	8	27%	22	73%	30
32	1	3%	6	20%	23	77%	30
Mean	-	2.21					

Topic II was about Energy Resources. It includes ten items in the Environmental awareness test. These items were about the effects of hair spray in the environment, smoke belching, effects of poultry and piggery to the environment, proper use of water, oil and banana leaves as ways of conservation, information about solar collector device, effects of smoking, burning garbages and cutting of trees in the environment. Some items were about water and waste management. In the school, under the National

Service Training Program (NSTP) of the students, lectures and seminars about water and waste management were given emphasis, and these were some of the reasons why the education students were imaginative to their environment in some items.

The obtained mean score of **2.21** signified the third year education students, generalist major are sensitive about energy resources, problems related to energy use and measures in taking care of the environment.

Table 3

TOPIC	COMPONENT						Total
	Perceptiveness		Sensitivity		Imagination Towards Environmental		
	f	%	f	%	f	%	
III. Wave Motion							
Items (10)							
2	2	7%	0	0%	28	93%	30
4	0	0%	29	97%	1	3%	30
7	0	0%	30	100%	0	0%	30
8	0	0%	30	100%	0	0%	30
11	18	60%	12	40%	0	0%	30
12	0	0%	1	3%	29	97%	30
21	2	7%	26	87%	2	7%	30
24	2	7%	23	77%	5	17%	30
33	3	10%	7	23%	20	67%	30
34	1	3%	6	20%	23	77%	30
Mean	-	2.26					

Topic III, the Wave Motion includes ten items in the Environmental Awareness test. It was about the sound and water pollution, effects of using pesticides and insecticides in plants, stereo ban implementation and zero-waste management. One program of the barangays nowadays is the zero-waste management. Also as mentioned above this program is included in the National Service Training Program (NSTP) subject of the

students. There were experts who conducted seminars and competitions about this program. The researcher believed that this program helped in gaining highest environmental awareness on the part of the third year education students.

The obtained mean score of **2.26** shows that the third year education students, generalist major were at sensitive level in the topic of wave motion.

Table 4

TOPIC	COMPONENT						Total
	Perceptiveness		Sensitivity		Imagination Towards Environmental		
	f	%	f	%	F	%	
IV. Electricity							
Items (5)							
1	0	0%	28	93%	2	7%	30
16	1	3%	19	63%	10	33%	30
22	4	13%	4	13%	22	73%	30
30	0	0%	2	7%	28	93%	30
35	2	7%	18	60%	10	33%	30
Mean	-	2.43					

Table 4 covers the topic of Electricity. These were about electricity conservation and sound energy, the use of generator and electricity consumption with the use of flat iron. The obtained mean score of **2.43** signified that the third year

education students were at sensitive level of environmental awareness in the topic of electricity.

Table 5

TOPIC	COMPONENT						Total
	Perceptiveness		Sensitivity		Imagination Towards Environmental		
	f	%	f	%	f	%	
V. Nuclear Energy							
Items (5)							
3	27	90%	3	10%	0	0%	30
10	2	7%	4	13%	24	80%	30
18	3	10%	8	27%	19	63%	30
25	0	0%	1	3%	29	97%	30
27	0	0%	28	93%	2	7%	30
Mean	-	2.28					

It was about the danger brought by firecrackers especially during new year. Since it was a practice to light firecrackers during new year's eve, most people were not satisfied in just watching others lighting firecrackers, they buy and used it. They ignored the dangers it might bring not only to the health but also to the environment. These items were also about the use of chemicals sprayed in vegetables, radiation emitted by television and effects of x-ray in the human body. The mean score of **2.28**

shows that the third year education students were sensitive to what is happening to their environment about nuclear energy.

The overall mean score of the students in five selected topics in Science was **2.38**. Since the rate of two(2) was given to **sensitivity level or component of environmental awareness**, it shows that the environmental awareness of the third year education students, generalist major in selected topics in science is Sensitivity.

Table 6 - Distribution of respondents in their academic performance

SCORES	FREQUENCY	%	INTERPRETATION
1.0-1.49	2	6.67%	Outstanding
1.50-1.99	27	90.00%	Very Satisfactory
2.0-2.49	1	3.33%	Satisfactory
2.50-3.0	0	0	Poor
4.0	0	0	Conditional
5.0	0	0	Fail
Total	30	100%	

It shows that 6.67% of the students were outstanding in their academic performance, 90% were very satisfactory and 3.33% were satisfactory. No student was poor, conditional and failed in academic performance. The mean score of 1.77 signified that the education students were **very satisfactory** in their academic performance.

their academic performance . As the environmental awareness of the students were developed and increased, their academic performance were likewise increased and enhanced.

Table 7-Correlation Value Between Environmental Awareness and Science Achievement of the Third Education Students

VARIABLES	ENVIRONMENTAL AWARENESS
ACADEMIC PERFORMANCE	0.31

From the correlation value of 0.31, it shows that there is positive correlation between the environmental awareness and academic performance of the education students in Bulacan State University in Bustos Campus. It means that if the students are environmentally aware, it leads also to the enhancement or increase in their academic performance. Somehow, if the correlation of the variables is low, other factors might be responsible for such small correlation. Although the students already taken up the subject of Ecology during their second year of study, the age, socio-economic status, guidance records of the students, the upbringing and environmental awareness background of the family could affect the environmental awareness of the students. These variables may contribute to factors responsible for moderately small positive correlation.

III. CONCLUSIONS

From the findings cited. the environmental awareness of the third year education students, generalist major was associated to

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