



IDENTIFICATION OF THE ENVIRONMENTAL PERSPECTIVES and INFLUENCES of the 6th GRADE ELEMENTARY SCHOOL STUDENTS of the PUBLIC SCHOOLS of BALANGA CITY, BATAAN

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Abstract - Two color morphs of the rice bug, *Leptocorisa oratorius* (Fabricius), exist in local populations in Northern Mindanao, Philippines – one with distinct ventrolateral abdominal spots and the other without. A complete understanding of the biology of these color morphs is necessary in the formulation of management strategies against this rice pest. Thus, this study was conducted to determine differences in the shape of the head capsule between sexes and between the two color morphs of rice bugs collected from three sites. Images of the head capsule were digitized using the TPS series producing seventy Cartesian coordinates which were then analyzed using Relative Warp Analysis. Relative warp scores were subjected to Canonical Variate Analysis (CVA) and Discriminant Function Analysis (DFA). Results showed significant differences in the shapes of the head capsule between sexes and among color morphs, which are consistent among the three populations of rice bug from Pinuyak in Lala, Sta. Elena, Steeltown in Iligan City, and Maigo, Lanao del Norte. Observed variations might have resulted from adaptation to environment that amplify their fitness to the host plant. The results of the research warrant further studies into the species status of the two color morphs of rice bugs from Northern Mindanao. Likewise, a complete understanding of the biological basis of the observed differences is necessary for the effective management of this species.

INTRODUCTION

The environment is at a precarious state; the changes it is encountering threatening current ways of life. Human society in its role as “guardian” – or tenant – is left with the responsibility to care for it, keep it at a state that is livable, and to control damages caused by nurtured practices. Society, as well, and its way of life does not remain static. Alterations in the social environment impose differing requirements upon nature, and to continuously care for the environment’s state, management evolution should be necessitated. Old methods, beliefs and practices will be rendered obsolete, and new approaches have to be created and applied.

Considering the potentials of the youth and their role as custodians of the future, inculcating a culture of ecological responsibility today could lead to more effective ways to care for nature. In order to do this, however, a proper assessment of their current environmental awareness and perspectives has to be done. Also, this could help determine the capacity of the current social environment of the youth to foster environmental responsibility. The ultimate goal is to empower the youth in order for them to be

further involved in proper environmental management but without proper assessment, areas for improvement as well as the determination of the effects of different means of interventions will not be known. This could lead to careless and ineffective approaches to dealing with the issues of involving the youth in the care for nature.

Similar studies have been done in other countries but not quite in the perspective of better adapting to change. This project could set a benchmark in the country in the goals of improving how the Philippines guard its natural resources. Apart from these, it holds the potential for setting up a standard operating procedure for urbanizing municipalities and communities in order to ensure that in their progress, the environment is not forgotten.

To achieve such an end, the project aims to determine the dominant environmental perspectives, knowledge and beliefs in Grade 6 Section 1 students of the nineteen public elementary schools of Balanga City. It also involves the identification of the various influences, both interpersonal and via mass media, affecting these children’s environmental perspectives.

The data generated from the study could serve as a starting point in the development of better means to guide the youth towards a culture of environmental responsibility. Identifying what they currently know would show what more should be taught to the children about the environment. Also, knowing the most influential source of information is useful in the discovery of the best means to engage the youth further towards learning.

It follows as well that if above mentioned goals are met the improvement of the environmental management plan of Balanga City could also be achieved. And in the long run, if proven effective, a similar methodology could be used in the evaluation and creation of environmental projects of similar towns and regions throughout the country.

of information, ideas, attitudes, or emotion from one person or group to another (or others)” (Theodorson and Theodorson, 1969) and is a process that has great capacity to influence (Osgood et al, 1957). It has also been described as highly personal process, its meaning and purpose changing with the beliefs of the individuals involved. Information, then, transmitted during communication is a personal construct, not a constant element. It has been observed to differ relatively with an individual’s background, perceptiveness and even willingness to understand the ideas being translated. Accordingly, a message meant to convey flattery may be taken as offense, or a message of importance may be construed as nonsense. To identify the best means to communicate a certain message would then require the investigation and understanding of the recipient’s background. Learning the current

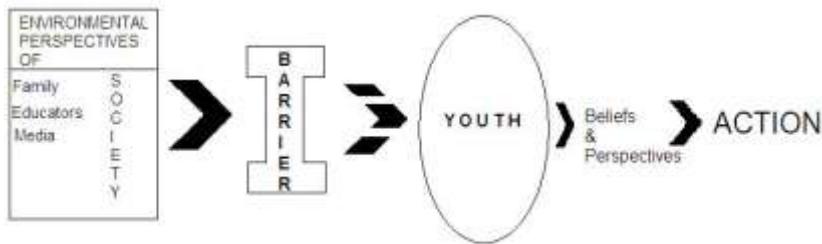


Figure 1. How the youth’s environmental beliefs and perspectives are shaped by the society they belong in, and the present communication barriers, as well as how these beliefs and perspectives become translated into action.

The study aims to identify the environmental perspectives of the youth of Balanga City as well as how the social environment of these children affects these views. Knowing how children look at the environment gauges how well their social environment is capable of fostering environmental responsibility.

Human knowledge, culture and beliefs, including how society values nature, are learned; and the process of learning is centered on communication. Communication has many definitions but one directly applicable to learning – and teaching – describes it as the “transmission

status of knowledge and beliefs of the children with regards nature would help in the formulation of projects and programs to engage the youth in the drive to protect the environment.

Communication between children and the different elements of society – their family, their school and the media – greatly shapes and possibly even defines how they regard nature. Lasswell’s simple model for communication (Figure 2.) effectively shows how these societal constituents affect the youth, and also makes it possible to predict outcomes if the sources or means of communication were changed.

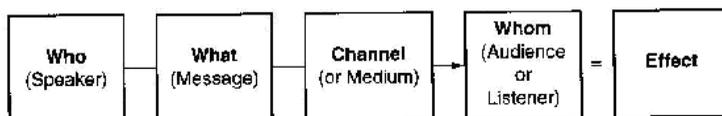


Figure 2. Lasswell’s model of communication (Severin et al, 2000).

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In this study, the effects of both interpersonal and mass communication on the youth's environmental perspectives will be evaluated, as well as the various media used for communication. Examples of interpersonal communication affecting the children's point of view with regards nature include both direct and indirect communication with family members as well as mentors in school. Mass media they may be exposed to include television programs, magazines, radio shows and even newspapers. Identifying the source of information with the greatest influence would not just provide an explanation about the youth's current environmental perspectives but could also show which media to engage in attempts to empower the youth towards responsible environmental management.

Apart from studying the various influences that formed the youth's current environmental influences, identification of communication barriers that inhibit the proper transmission of relevant information will be done. There are various kinds of physical barriers that create noise lessening the effectiveness of chosen media to transfer information such as failures in translation from one language to another (English to Filipino or vice versa), printing errors (in textbooks, newspapers and magazines), and even natural noise (traffic on street beside schools). Identification of such barriers allows for the possibility of their removal or reduction.

Socio-psychological barriers, such as stereotyping, ethnocentrism, and absent-mindedness, also exist and result to the skewing of the intent and content of the message. These barriers are sometimes rooted in the receiver's and communicator's backgrounds, making it difficult to uproot. Knowing these barriers would also improve the chances of creating the right methods of communication used in environmental programs to be implemented.

As Lasswell's model shows, communication results to an effect, the creation of beliefs and perspectives that translates into action. Examples of habits ranging from how they go about their day-to-day lives, like dealing with litter and vehicle emissions, to being involved in environmental projects such as tree planting and wildlife conservation, are rooted in these beliefs based on communication and is thus indicative of how the current society is capable of fostering a culture of environmental responsibility.

The study is grounded upon the premise that interpersonal communication and mass media shape what the children know of the environment,

and that what they know about the environment, in turn, directs how they act towards it. Determining what they know and how they act at the moment would be indicative of the influences they have encountered while pointing out the best means to communicate with the children to further empower and include them in responsible environment management.

REVIEW OF RELATED LITERATURE

The Youth and Responsibility

Church and Katigbak (2000), in their paper Trait Psychology in the Philippines, center on the establishment of five trait concepts that can be observed in Filipinos. These concepts attempt to explain their hierarchies in relationships and the subtleties that rule different Filipino relationships. Here the authors mention how children are often the most cared for members of the family but they possess the least authority. The greatest portion of family resources is often used in providing for the children but they are also given the least responsibility. The difficulty with this situation is that it causes the tendency to experience difficulty in transitioning to an adult frame of mind; limiting the ability and enthusiasm to act, react and participate in current issues wherein there is a necessity to be involved.

This trait in Filipinos, though, is currently experiencing change due to the increasing events of labor migration (Battistella and Conaco, 1998). Although its negative effects have been studied in detail, positive effects have also recently been observed in family units left by overseas Filipino workers. The partial or complete absence of parent figures in the home force children to assume roles of responsibility, making them better adapted to more conscientious positions in the future and to participate in different issues in the Philippine society. Also, the exposure to other cultures such a situation makes possible expands the dimensions of learning and influence the children enjoy, making them more predisposed to be aware of international issues.

The Youth and the Environment

In the country, RA 9003 or the Ecological Solid Waste Management Act of the Philippines, Section 17-I mandates the proper education of the youth and the public of proper means to dispose of the waste materials they produce. It requires the Department of Education (DepEd) and the Commission on Higher Education (CHED) to include in the curriculum of

primary, secondary and tertiary students lessons on proper solid waste management. The mandate allows the maximal dissemination of ecologically-responsible practices to children and promotes their heightened participation.

The Youth and their Influences

The Philippines' primary school curriculum is monitored by the Department of Education (DepEd). They hold a more stringent control over public schools, and their programs are adapted at a more expeditious pace in these institutions. DepEd currently has two Department Orders (DO) closely related to the promulgation of responsible environmental habits. DO No. 57 (1976) designates the formation of an action committee that will assist in the necessary changes required by the so-called Green Revolution that will focus elementary agricultural programs to become more focused and effective in teaching ecologically-friendly planting practices to the youth. On the other hand, the establishment of the YES (Youth for Environment in Schools) Organization was brought about by the latest DO of DepEd related with the environment, DO No. 72 (2003). It compels all the schools under its wing to play host to their own local versions of the Yes organization, a co-curricular group focused on organizing various events that "safeguard, protect, and conserve the environment for future generations."

Since 2010, DepEd has released three Department Memorandums (DM) related to the environment. DM No. 276 (2010) mandates the inclusion of lessons in the curriculum connected with Climate Change and Risk Reduction Management and Environmental Education. DM No. 32 (2010), on the other hand, is a directive for schools to observe and include programs to help celebrate national and international environmental events. While DM No. 62 (2010) encourages students of DepEd accredited schools to participate in the 8th Youth for Environment Summer (YES) Camp.

The Youth and the Methodologies Used for Studying their Views

Considering the limitations in term of expression, as well as the higher chance of impressionability of children, methodologies for the studying of children's beliefs and views often differ from the usual techniques used for studies based on an adult population. In terms of studying the environmental awareness of children, a myriad of techniques have been documented. Surveys are often simplified and phrased in such that the

children would not feel as if they will be penalized for voicing their opinions or for giving the "wrong" answers. Avoidance of questions that sound and appear like exam or quiz questions is a frequent recommendation. Alternative means have then been formulated such as the use of games, stimuli (pictures, music, etc.) and even the use of drawings as a means to define the environment.

Traditional written surveys have been used effectively for acquiring the environmental awareness from primary and secondary school students (Hicks and Holden, 2007, Tuncer *et al*, 2007, Hacking *et al*, 2007, Fien *et al*, 2002, Littledyke, 2004). Survey questionnaires are often simplified, ranging from ten to forty-five questions long. Recommendations emphasize on avoiding questions that could possibly lead the children to feel that what they're doing is a form of test where they have to perform well (Hacking *et al*, 2007). Alternative means of acquiring data involve oral interviews, more suitable for a younger study population (Hacking *et al*, 2007, Hicks and Holden, 2007), and even the use of seeking answers from children through the encouragement of drawings (Shepardson *et al*, 2007).

There is a limited body of information that can be used in the study of environmental perspectives of children with regards the environment. This, however, should not be considered as a hindrance but a challenge to create more. The current study attempts to become a point of reference for similar studies that need to be done in the Philippines to help pursue a more relevant and effective means to manage the natural heritage and resources provided by the country's environment.

METHODS AND PROCEDURES

Sampling

As of 2000, children ages ten to fourteen years of age comprise 6% of the total population of Balanga City. According to the Department of Education, since 2004 10,242 students are enrolled in the nineteen public schools of Balanga City (Table 1). The chosen sample population included all the Section I Grade 6 students of the nineteen public schools of Balanga City. This is to ensure that all schools with the same DepEd-mandated curriculum will have representation. In the country, public schools still experience the bulk of enrollees. Based on the DepEd Factsheet of 2009, of 13,686,643 enrollees for School Year (SY) 2008-2009, 12,574,506 enrolled in public elementary schools. Also,

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Table 1. List of the public schools of Balanga City as registered with the Department of Education and their populations (as of SY 2004-2005).

SCHOOL	Baranggay	Population
Balanga Elementary School	Talisay	2,674
M. Delos Reyes Memorial Elementary School	Puerto Rivas	749
M. Delos Reyos Memorial Elementary School – PRI	Puerto Rivas - Draga	58
M.P. Cuaderno Sr. Elementary School	Sibacan	245
Tortugas Elementary School	Tortugas	320
Tuyo Elementary School	Tuyo	369
Bagong Silang Elementary School	Bagong Silang	401
Bani Public School	Cataning	32
Baryo Central Elementary School	Central	519
Cabog-Cabog Elementary School	Cabog-cabog	260
Cataning Elementary School	Cataning	1,158
Cupang Elementary School	Cupang Proper	1,511
Cupang Elementary School - CNPS	Cupang North	0
E. Bernabe Elementary School	Dangcol	202
G.L. David Memorial School	Tuyo	197
Our Lady of Lourdes Elementary School	Munting Batangas	258
T. Camacho Sr. Elementary School	Camacho	485
Tanato Public School	Tanato	79
Tenejero Elementary School	Tenejero	905

Source: Department of Education [URL]

<http://www.deped.gov.ph/public/public.asp?sec=&pageno=1&keyword=&sort=&iwant2=®...>

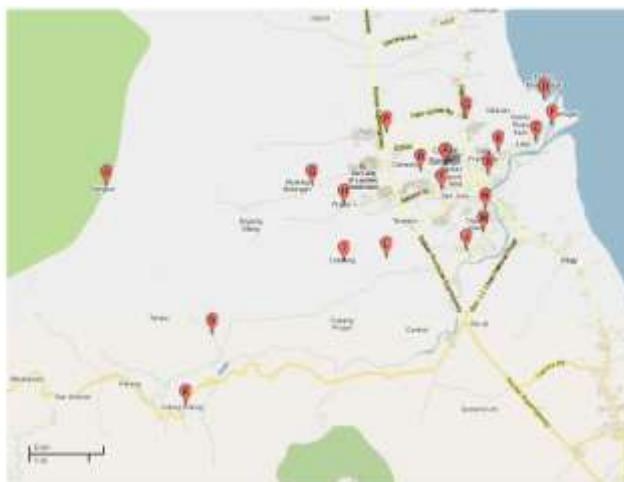


Figure 3. Map of Balanga City with the marked locations of the schools under study.

A – Balanga City Hall, B – Balanga Elementary School, C - M. Delos Reyes Memorial Elementary School, D - M. Delos Reyes Memorial Elementary School – PRI, E - M.P. Cuaderno Sr. Elementary School, F - Tortugas Elementary School, G - Tuyo Elementary School, H - Bagong Silang Elementary School, I - Bani Public School, J - Baryo Central Elementary School, K - Cabog-Cabog Elementary School, L - Cataning Elementary School, M - Cupang Elementary School, N - Cupang Elementary School - CNPS, O - E. Bernabe Elementary School, P - G.L. David Memorial School, Q - Our Lady of Lourdes Elementary School, R - T. Camacho Sr. Elementary School, S - Tanato Public School, and T – Tenejero Elementary School. Source: Google Maps. [URL] <http://www.googlemaps.com>

monitored implementation of the various recommendations of the Department of Education and the local government compared to private institutions.

Grade 6 students were chosen since they have gone through all the steps and lessons in previous elementary levels giving them full exposure to the academic environmental program of their schools. Also, their age and the consequent longer contact with academic preparation give them greater eloquence in expressing their views and opinions. Section I students, although do not constitute the majority of the population, were picked as representatives given that they represent the best case scenario as they are allowed to experience a more advanced curriculum as well as more exposure to external opportunities for learning such as contests and seminars. All of the students for each chosen section were surveyed regardless of their population size.

Homeroom faculty of the chosen sections was also interviewed. This was to allow for representation of each school to account for modifications to the ascribed programs and curriculum by the National and Regional Offices of the Department of Education. The Regional Office of the Department of Education will also be consulted with regards the standardized curriculum and the recommended programs for the children that specifically target environmental issues.

Instrumentation

A 10-question survey for the children was used as a means to create a comprehensive view of their environmental awareness. The questions were multiple-choice but included options for the children to put inputs that may not be found in the choices provided. The questionnaire also included queries regarding the children's definition of the environment as well as the various components that make it up. It also contained queries relating environmental resources to their daily life, and environmental responsibility. A moral evaluation of various actions they perform that they believe have an effect on the environment was included as well. Questions regarding where and who informs and influences them with regards green issues and practices were present.

The questionnaire included a portion to aid in the determination of background information of the children that may affect their environmental perspectives, such as presence of

immediate family members that work abroad and therefore relay environmental practices of the foreign country in which he resides in as well as other experiences that provided the children contact with foreign and alternative influences (Appendix A).

An interview questionnaire was also used for the homeroom faculty of the nineteen schools studied. Questions are designed to identify which subjects tackle environmental issues and how they are taught. It also asks the various rules and regulations as well as projects the school provides that foster environmental responsibility. Inquiries on means of implementation, monitoring and enforcement of environmental practices within campus will also be present. (Appendix B).

Data Collection

Data were collected during the homeroom period of the students with the surveillance of the corresponding faculty. The students were given a 5-minute orientation about the purpose of the survey while 30 minutes was allotted for the answering of the survey.

While the students were answering the survey, their homeroom advisers also answered the questionnaire designed to determine the standard curriculum about the environment they implement. Each school was represented by the homeroom faculty of the chosen section.

Data Analysis

Data acquired were primarily qualitative. Tabulation and qualitative analysis were done to interpret results and create a dissertation of the predominant views available in the students and the different moral stances of the children regarding various habits that affect the environment. Parts of the data related to the determination of environmental influences were processed via coding into a matrix in order to interpret quantitatively. This includes parts related to the external environmental influences of the children.

RESULTS

Study population

The total respondents for the study were six hundred and ninety-two (692) students, all coming from the Section I of the Grade VI classes of the nineteen public schools of Balanga City. Of the nineteen schools, Cupang Elementary School with fifty-six students had the largest representation (8%) while M. Delos Reyes Memorial Elementary School – PRI had the smallest (2%). The students had ages ranging

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Table 2. Summary of personal information gathered from respondents.

Sample population	692
Age (Range)	11 – 15 years old
Average age	12
Place of birth	95% from Balanga City 4% from neighboring towns within Bataan (Abucay, Pilar, Orion, Dinalupihan, Bagac) 1% from other provinces in the Philippines (Cavite, Manila, Davao del Norte)
Current Hometown	99% from Balanga City 1% from neighboring towns within Bataan (Abucay, Pilar, Orion)
Percent of population with relatives abroad	21%
Percent of responding population with the following relatives abroad:	
Parent, Sibling	54%
Aunts, Uncles, Cousins, etc.	46%
Percent that has never been out of the country	99%

from 11 to 15 years old with a mean value of 12 years. The sample population had 21% of its members with relatives working overseas, most being from their immediate family. Ninety-nine percent (99%) of the population have never been outside the Philippines. Ninety-five percent (95%) of the population also have Balanga City as their birthplace.

microscopic, the artificial and the natural. Less than 17% of the population considered all eleven parts of the environment. Majority considered only the following as environmental components: plants, animals, bodies of water, bodies of land, the air, the atmosphere and insects. It is observable that the aforementioned choices are those considered as part of the “natural” world

Table 3. Percentage of students who believed the given elements comprise the environment.

ELEMENT	% of Sample Population
Plants	95
Animals	93
Bacteria and viruses	36
Bodies of water	87
Bodies of land	88
Air	56
Atmosphere	51
Man-made things	34
Pollutants	28
Insects	53
Garbage	34

Definition of the environment

The students were given eleven options to include in their definition of the environment (Appendix A), that comprise the biotic and abiotic factors of the environment, the visible and the

whereas other components that are artificial, or man-made, such as buildings, garbage, and pollution are less popular. Other components that are also considered naturally-occurring but not as

easily seen, such as microorganisms and insects, were also mostly ignored.

Valuation of the environment

Valuation of the environment was assessed by asking the children what resources are acquired from the environment. They were given six possible answers for this question (Appendix A). Only eighteen percent (18%) recognizes that all six have the environment as their source. Food, oxygen, shelter and materials for building are the top four answers. Recreation was at the bottom with 22% (Table 4).

of re-using materials and segregation of garbage. One of those in the third rank was the practice of producing garbage, the highest placer for practices considered by the majority as detrimental to the environment. The respondents also provided interesting commentary when they could not choose the moral polarity of each option. There were instances wherein respondents considered a practice as both good and bad, such as the use of plastics, as well as producing garbage.

The respondents were also asked regarding reasons for the practice of actions that

Table 4. Percentage of students who believed the given materials are acquired from the environment.

ELEMENT	% of Sample Population
Food	99
Water	82
Shelter	86
Materials for building	86
Oxygen	95
Recreation	22

Knowledge of current environmental problems

The population's top choice was air pollution followed closely by global warming, though about five percent (5%) of the respondents reiterated that climate change was significant environmental problem not covered by the provided choices (Table 5).

they believe results to negative effects on the environment. Majority of the students mentioned laziness as well as negligence, pointing to the fact that awareness do not necessarily result to action. Modernization is also blamed, due to its exacerbation of natural tendencies towards idleness. Some also pointed out that people had a tendency of not caring at all for nature, resulting to actions that lead to its degradation. Lack of

Table 5. Percentage of students who believed the given problems are current environmental issues.

ELEMENT	% of Sample Population
Air pollution	84
Water pollution	72
Land pollution	72
Deforestation	75
Global warming	80
Extinction	63
Others:	Climate change – 5 Flooding – 0.5

Actions believed to affect the environment

In response to queries regarding their actions affecting the environment, most of the students admitted to have been able to plant trees (99%) and all but three believe this to have had a positive effect on the environment (Table 6). Ranking second on the survey were the practices

awareness as well as information were pointed as the culprit. Respondents also fault ecologically harmful practices to their lack of discipline as well as force of habit. Disturbingly, however, some did mention that such actions made them happy. Others pointed their fingers to parental influence, such as the practice of *pagsisiga* (burning of trash)

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Table 6. Percentage of students who practiced the given actions and their stance regarding whether these actions have a positive or negative effect towards the environment.

ACTIONS	% of Sample Population		
	Did Action	Thought it was Good for the Environment	Thought it was Bad for the Environment
Producing garbage.	96	8	92
Doing garbage segregation	97	92	8
Littering	86	4	96
Recycling	95	97	3
Re-using	97	97	3
Using styrofoam materials	92	13	87
Using plastic materials	95	5	95
Planting trees and plants	99	99.6	0.4
Riding frequently in cars, jeeps and tricycles to school	93	6	94
Conserving electricity	93	99	1
Conserving water	89	99.5	0.5

and the impracticity of garbage segregation, and the absence of needed infrastructure to practice ecologically sound habits, like properly labeled trash cans and the like.

Perceived consequences of the destruction of the environment

In response to queries regarding signs showing that the environment is suffering from destruction, the students' first choice was the transformation to a warmer climate (Table 7). This was closely followed flooding, and the occurrences of black outs or brown outs. The results are tabulated below:

Actions believed to be able to restore the environment

More than half of the respondents (65%) believed that planting trees was an effective means to help restore the environment. The other suggestions can be subdivided into three sets of activities: (1) Proper solid waste management, (2) conservation of natural resources and (3) repair of environmental conditions through pro-active campaigns. The first set of actions included proper waste segregation as well as the halting of littering and

Table 7. Percentage of students who considers the given occurrences as signs of environmental damage.

OCCURRENCE	% of Sample Population
Flooding	92
Spreading of disease	83
Food shortage	86
Lack of water supply	86
Warmer climate	93
Blackouts	88
Fuel shortage	83

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improper dumping of garbage (i.e. In bodies of water, in sidewalks, etc.). Mentioned as well was re-using and recycling of materials to limit the amount of waste products produced by the community. Activities focused on conservation, on the other hand, involved the use of natural resources such as water, fuel and electricity. Suggestions range from limiting of shower time to the collection of rainwater for watering plants and other household clean-up activities to the unplugging of electronics to the use of bicycles and the practice of walking. For the third set of actions, suggestions included environmental campaigns, coastal clean-up activities, and banning of activities such as illegal logging and dynamite fishing.

Allotment of responsibility for the environment

Ninety-eight percent (98%) of the respondents believed that everyone must be responsible for the care of the environment (Table 8). One respondent, to emphasize his point, even

Sources of information about the environment

The two primary sources of information concerning the environment of the respondents were their school and television news programs (Table 9). More than a quarter of the respondents claim to learn about environmental management from all of their subjects, but the majority point towards their Science and Health subjects as their primary source of information. Other subjects mentioned were *Hekasi* (Philippine Geography, History and Civics), Character Education, English and Math. As for television, majority reported having learned about environmental issues from local news programs such as TV Patrol and 24 Oras. Some also mentioned *Aksyon Balita*, and morning news programs like *Unang Hirit* and *Umagang Kay Ganda*. Seventy-six percent of respondents also credit other local television shows for their knowledge about the environment such as *Matanglawin*, *Kap's Amazing Stories*, and *Born to Be Wild*. Others also mentioned special

Table 8. Percentage of students who considers the cited groups as responsible for the care of the environment.

GROUPS	% of Sample Population
Government	21
Big companies	1
Parents	19
Schools	12
Everyone	98

added an additional option that says “Me!”, and checked it. Those who refuse to admit full responsibility pointed towards the government, their parents and their schools as those who bear responsibility for the environment.

documentaries such as *An Anatomy of a Disaster*, and *Signos*. Youth-oriented shows such as *Batibot* and *Going Bulilit* were cited as well. International cable channels and programs like National Geographic and Discovery were also included in the list.

Table 9. Percentage of students who claims to acquire majority of their information regarding the environment from the given media.

SOURCE OF INFORMATION	% of Study Population	Mentioned Programs
School	97	All subjects Primarily in Science and Health
News on TV	95	Local news channels - TV Patrol, 24 Oras
Other TV shows	62	Local TV shows - <i>Matanglawin</i> , <i>Kap's Amazing Stories</i> International Cable Channels - Discovery, National Geographic
Radio	58	Local FM channels - WRR 101.9 FM, LS 97.1 FM
Newspapers	70	Local broadsheets - Philippine Daily Inquirer, Manila Bulletin Local tabloids - <i>Abante</i> , <i>Bulgar</i>
Magazines	12	Children-oriented local magazines - <i>Masigasig</i> , <i>Batobalani</i> Local Franchise of International children and teen magazines - <i>Seventeen</i> , <i>K-Zone</i>
Internet	12	Search engines - Google, Yahoo Social networking sites - Facebook, Twitter Wikipedia.org
At home	65	

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Other significant sources of influence included local broadsheets like the Philippine Daily Inquirer and Manila Bulletin, and tabloids like Abante. Local radio programs received moderate mention and included WRR 101.9 FM and LS 97.1 FM. Credited least were magazines (19%) and the internet (10%).

Disappointingly, only slightly more than half of the students claim that their own family units are also reliable sources of information about the environment and proper environmental habits. The respondents' teachers echo this concern and even mentions that the greatest difficulty in environmental education is the lack of follow-through at home.

DISCUSSION

Predominant views about the environment

Results show that majority of the students consider the environment as mostly having natural components, with only few (less than 50%) considering anything manmade, from structures to pollutants, as part of it. This is consistent with the results drawn from the studies of Chan (1996) of the middleschool students in Hongkong as well as that of Littledyke (2004). Both authors point out the increased importance ascribed by their study population towards "natural" things. For the specific case of the students of Balanga City, the rural set-up they have could be part of the causality of the current scenario. The traditional beliefs of the people of Balanga City, and Bataan in general, include recommendations of behavior bordering on reverence towards various elements of natural world such as certain species of trees, bodies of water, soil formations that result to the preservation and care based on mythology. No such veneration is given to man-made aspects of the environment. This form of behavior is not unique to the region but links rural environments throughout the globe (Cary, 1993). Another possible cause for the results are perceptions brought about by classroom definitions of the environment from their educators. Based on interviews done with the advisers of the students, the common definition of the environment is it being the summation of both living and nonliving things that surround an organism that allows for its growth and development. Emphases are given on its effects on human life, being the source of natural resources. Such descriptions put the environment in a positive light and emphasize its importance but do nothing to differentiate it from

what is usually referred to as "nature". Based on the interviews done with the faculty-in-charge, majority of them lack significant knowledge of environmental concepts and are unaware of their own ignorance. A review of literature (Nagra, 2010, Cutter, 2001, Dillon, 1997, Fang, 1996) shows that this problem has already been identified more than a decade ago and has not yet been answered up to now showing how prioritization in environmental management plans and campaigns could be misplaced. Any success requires a proper understanding of the environment, a goal that cannot be achieved if the educators themselves are not prepared properly.

The described outlook of children under study also alienates even the other natural aspects of the environment that do not have an obvious or directly positive effect on human existence, such as viruses, bacteria, and their popular carriers, insects. Such a discriminating view on the environment prevents the formation of a more proactive attitude towards environmental management in an urbanized set-up. Being surrounded by man-made creations, attending for the environment can then be ignored or delayed since those that should be cared for are not immediately seen. Such a way of thinking results to greater difficulty in integrating ecologically-responsible practices with daily life.

Majority of the respondents were aware of how reliant their needs are to the environment, and which of their practices worsen its condition, but basing on their suggested solutions, most still think helping the environment entails going out of their way, and daily routine, to perform an isolated act. They are, more often than not, actions advocated only occasionally via school or community projects (i.e. Anti-littering campaigns, Tree planting, etc.) There is in fact no sense of urgency from the children, with almost all believing that the world can still be repaired once it has been destroyed. Only one response claims that destruction should be prevented instead, for once it has occurred it cannot be restored. Such an attitude, according to Petegem and Blicck (2006) may be caused by the limited options allowed to children brought about the constrained amount of responsibility delegated towards them. Also, the prevalent behavior shaped by capitalism and economic individualism prevent the inculcation of environmental accountability to daily routines (Shafer, 2006).

Primary influences regarding environmental information and care

Currently, the respondents are physically dependent on their guardians for their well-being, and are mentally and emotionally open to their persuasions. As they are in the process of forming habits, beliefs and ideals, they are at a critical point in development wherein the influences they encounter might dictate their permanent attitudes in life. Moral development of children at this age, even towards environmental issues, is facilitated by the observed habits and practices of the individuals they hold in high regard, such as their parents, educators and media idols (Petegem, 2004). It is interesting then that at an early age most of their excuses point towards laziness and irresponsibility, characteristics that are not being praised or advocated in any of their academic subjects. Some even claim the absence of choice, which in the Filipino context is not unexpected. Though well-protected and cared for, children are often not given alternatives to what they can or cannot do (Church and Katigbak, 2000). For example, in respect to their elders, they would not have a choice but aid their parents in burning garbage in their backyard. They would not be able to say no plastic packaging or Styrofoam containers in the canteen without risking not being able to eat at all. Riding in tricycles is also a commandment if their *sundo* (fetchers) are no longer able to walk long distances. At the age they are in, they cannot freely go against the influences and cultures they have within their families, and other social units. Even if they are aware of what should or should not be done, such knowledge is often skewed by the differing practices they observe.

The interviewed faculty has already claimed the difficulty in follow-through at the homes of the children. Awareness of the existence of such problems requires appropriate action from those who can. Both the school and the local government are in power to shape the environmental perspectives and habits of their communities. In Greece, (Abeliotis, 2009), both the government and the school advocated a project that entailed parents to report their environmental attitudes in a symposium-like gathering that allowed for the development and improvement of practices at home. An aggressive environmental project in school could as well be done in the country to provoke the students to share what they learned about proper environmental practices at home as well as the inclusion of other household members in various environmental workshops and events via the Parent Teacher Association (PTA) of the school. The local government should also promote environmental awareness at the level of

family units to ensure the maintenance of practices needed to reach the goals outlined in their environmental management plans.

Apart from their immediate social environment, the respondents are also affected by other influences. Information regarding the environment was largely attributed to exposure to the evening news shows of local television channels, such as T.V. Patrol and 24 *Oras*. The percentage of students giving credit to such shows, even more than their families, show the effectiveness of the marketing campaigns of local media as well as how much the children follow the viewing patterns of their adults. The capacity of such shows to exert influence is brought about by agenda-setting theory and the maximization of the flow of information based on communication theories (Severin et al). Basing on the television shows mentioned, ranging from early morning news shows to late night specials and documentaries, the viewing patterns of the respondents can be deduced. Exposure to television is usually in the early hours of the day, while they are preparing to go to school as well as late in the evening. The use of short advertisements as well as popular television personalities proved advantageous, considering the significant mention of programs hosted by such personalities like Richard Gutierrez (*Signos*, *Anatomy of a Disaster*), *Kuya Kim* and Sen. Bong Revilla in the study. Radio programs in favorite FM channels also provide significant effects since their idols are often the ones advertising relevant practices the persuasion could actually push the children to action. One successful event advertised in radio, television and magazine was the 10.10.10 Run for Pasig River Event last October 2010. The bulk of participants were further increased by the appeal generated by the event for children.

The significant influence of media on the environmental attitudes of people as well as children has already been noted before (Pauw, 2010, Hunter, 2000, Guagnano, 1995) and has been found to be directly correlated to its accessibility. In the study, only a limited group of respondents were able to mention being able to watch programs from international cable channels such as Discovery and National Geographic. This limits the scope of their knowledge about environmental issues as well as its timeliness. Such information, however, if not properly explained, and not given due consideration by their direct influences (i.e. family, peers, etc.), and the values taught are not applied in their immediate surroundings, could simply be stored as accessory information and not applied by the

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children themselves in their lives. The potential for change that these programs have to offer cannot be maximized without the aid of the children's primary influences.

This is the same for other sources of influences such as teen- and children-oriented magazines like *Kids Zone* and *Seventeen*. Such media could perhaps have a stronger influence on the children albeit the rare occurrence of environmental stories present in their pages. The information present in these magazines are those that the children freely exchange and talk about during their leisure thus causing further discussion of possible important topics and their occasional implementation. The value of these influences does not lie solely on their effectiveness. The content of such media and the other references must be screened occasionally. Exposure of the study population to both broadsheets and tabloids could expose them to distorted facts. The internet, as well, poses the same danger. Although only a small percentage of the sample population seems to utilize it, or at least considers it as a valid source of information regarding the environment, access to social networking sites (i.e. Facebook) as well as websites that do not often have well-verified facts (i.e. Wikipedia) could also generate significant distortion of facts as well as confusion. Apart from weeding out the information or exemplified practices that do not show proper environmental management, the determination of which environmental principles in need of explanation should also be done.

Due perhaps to the significant number of available references about the environment (school, TV, family, etc.), majority of the students who answered the survey were aware of the current environmental problems. The results, however, did not make it possible to approximate the understanding of the children concerning these issues. It is important that the group is made aware of the reasons of such problems, even at their early age, as mentioned by one of the faculty interviewed, in order to prevent them from being part of the problem, and help them in becoming the possible solutions to prevent the aggravation of these dilemmas. Some simple solutions, like riding less frequently to school, recycling and segregation, were suggested by the students but these are balanced out by their inability to practice them due to their aforementioned excuses.

CONCLUSION

Based on the trends observed from data gathered from the Grade 6 Section I students of

the nineteen public elementary schools of Balanga City, several constants can be established. No significant lack of awareness was observed from the children. They are generally aware of the importance of the environment, though not necessarily its complete definition. It does not prevent them from knowing that it should be cared for as well as the reasons why and the ways to do it. The problem lies on the inconsistency of their immediate influences resulting to the distortion of facts they may have learned in school, television and other media. Differences in social background could allow for a wider range of influences but the relative homogeneity in results show that the greatest factors affecting the environmental perspectives of the children, and the actions that result from these, come from their schools and homes.

RECOMMENDATIONS

Considering that the respondents of the study represent the best-case scenario for the Grade 6 students of Balanga City, a more critical evaluation of their current curriculum and how it relays environmental issues should be done in order to promote a clearer view on what the environment actually is. Revisions could be implemented initially in a study group and if a significant improvement in the environmental perspectives of the study group is noted, it could be implemented throughout the City.

Similar studies could be conducted throughout the Region to check if the trends observed for the City is applicable in the other towns under the Regional Office of Bataan. Results of such an undertaking could greatly improve the academic standards of the Region, and if proven effective could be used on a national-scale.

Since the greatest hurdle to the promotion of ecological responsibility of the respondents came from the inconsistency of values shown in school and at home, a more in depth study of their domestic environments could also be done. No significant change can be achieved if the values taught are automatically negated once the children arrive at their homes. Local government units (i.e. *Sangguniang Kabataan*) and other non-government agencies could create more family-oriented programs to ensure the maximization of the home as a basis for influence.

All in all, any hope to improve the perspectives and beliefs of society towards the environment can only be achieved if it is also

perceived as a system, like the environment, and that no one unit cannot be used without successfully acquiring the support of the other.

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