

Camarines Sur Polytechnic Colleges, Philippines: An Eco-Friendly School Model

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Abstract: Academic institutions can become more environmentally responsible through the implementation of various conservation initiative. Along this, the study attempt to transform the Camarines Sur Polytechnic Colleges into living models of an ecologically sustainable learning institutions. Data was gathered from among the six administrators, 336 students, 62 teaching and 31 non-teaching personnel from school year 2013-2014. Questionnaire supported by interview and ocular inspection was utilized to assess the college practices along its environmental policy, resource management, curriculum, project and budget. Results revealed that the college has an Eco Friendly Program and has implemented guidelines along solid Waste Management in Classrooms and Laboratories. Awareness on environmental policy, resource management in classrooms, buildings and grounds, purchasing, use of lights and electricity, paper conservation, water conservation, waste management were highly implemented (HI). Maintenance on air quality and waste management in the canteen were moderately implemented (MI) in the college. Generally, the college are Aware (A) along environmental programs and highly implement (HI) its environmental practices. T-test result shows that there was no significant difference between the level of awareness and implementation on environmental practices. The proposed Eco-Friendly School Model developed by the researcher must be adopted by the college.

Index Terms: eco-friendly program, resource management, environmental practices, waste management, green campus

1 INTRODUCTION

Environmental responsibility considered how our human behavior impacts the environment and acting in a way that minimizes that impact. Environmental responsibility can be attempted at many levels by individuals, groups, institutions, organizations or business entity that are striving to integrate environmental consideration into the societies decision-making framework. Environmental responsibility signifies how an individual vary depending on a given individuals background, beliefs and understanding of how individuals decision affects nature. According to **Green Business Letter (2001)**, a journal for environmentally conscious companies, "environmental responsibility" for business includes having a comprehensive view of one's operations, strategies, and facilities with an eye to eliminate waste and emissions, maximizing the efficiency of resources, improving the quality of products, improve delivery services. While for an academic institutions like Camarines Sur Polytechnic Colleges, the term "environmental responsibility" may include many of the same issues and this will vary depending on the type of institution. The Camarines Sur Polytechnic Colleges, as one of a premier institutions in Bicol Region and as an institutions of higher learning have the capacity to influence society's perception of the environment and its responsibility for minimizing our impact upon it. Though programs like the Eco-friendly, research, and the conduct of own operations in ways that will provide models for society at large. Colleges and Universities can enjoy unique opportunities to promote environmentally responsible students.

By adopting environmental guidelines for campus management, academia may do more to reduce a portion of society's impact on the environment, perhaps more importantly; academic institutions potentially may influence the public's perception of environmental responsibility. David Orr, (1999), chair of the environmental studies in Oberlin College and supporter of environmental; education and campus environmental responsibility, suggests that in addition to the formal curriculum colleges and universities has a hidden curriculum consisting of buildings, grounds and operations. A hidden curriculum structures what a student see, how they move, what they eat, their sense of time and space, how they relate to each other, how they experience particular places, and it affects their capacity better alternatives. The Camarines Sur Polytechnic Colleges like the other institutions, can reduce environmental impacts, improve services, reduce costs of campus operations and do so in a way that is an educational asset. The National Wildlife Federation (NWF) Campus Ecology Program founded in 1989, provides practical advice on how academic institutions can become more environmentally responsible, and has become the major conservation initiative in higher education, "working to transform the colleges campuses into living models of an ecologically sustainable society, to train a new generation of environmental leaders, and to ensure a strong future in the America;s environmental movement. Along this, efforts by organizations can form to give assistance to campuses nationwide to become more environmentally responsible in Philippines society. This research presents efforts on environmental academic responsibility of Camarines Sur Polytechnic Colleges, to examine the factors that appear to be the most influential in determining the degree of institutional commitment to environmental responsibility. This research will present examples of environmental practices, programs and efforts to instill environmental responsibility of the college. Findings of this study will commit to environmental responsibility that will address to the students, faculty, employees and administration and to come up a model as CSPC an Eco-Friendly School

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2. Statement of the Problem

The research was designed to audit the present environmental management program of the Camarines Sur Polytechnic Colleges its awareness and implementation and to come up an Eco-Friendly School model. Specifically, it answered the following specific questions:

1. Is there an existing environmental management program of the college?
2. To what extent is the awareness and implementation of environmental practices of the college along;
 - a. Policy
 - b. Resource Management
 - c. Curriculum
 - d. Projects and
 - e. Budget
3. How significant is the difference between the extent of awareness and implementation of environmental management practices of the college?
4. What Eco-Friendly school model can be proposed to CSPC that will contribute to the environmental awareness program of the college?

3. Assumption of the Study

In this study, the researcher assumed the following:

1. There is an existing environmental management program of the college
2. That the extent of awareness and implementation of environmental management practices of the college has no variation.
3. That the proposed Eco Friendly School model can contribute to the awareness of the school towards environmental awareness program and serve as a guide of CSPC on its dream as one of the Green Campus in the community.

4. Hypothesis

There is no significant difference between the awareness and implementation of the college along environmental management practices.

5. Definition of Terms

- a. **Environmental Responsibility** – Environmental responsibility considered how our human behavior impacts the environment and acting in a way that minimizes that impact.
- b. **Academe**- refers to the academic institutions offering college courses
- c. **Awareness**- refer to the attitude and behavior of a certain people towards some issues and concern in their locality.
- d. **Environmental Awareness** - 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.(Wikipedia)
- e. **Implementation** – series of plans, programs are project that are being undertaken by an institutions of groups for compliance.
- f. **Policy**- these are sets of guidelines and policies that certain learning institution follows.
- g. **Resource Management**- these are sets of materials and resources needed for consumption of a certain individual or unit.

- h. **Curriculum**-a series or list of program mandated by a certain institutions that a certain student should finished .
- i. **Projects** – series of programs and activities intended for implementation.
- j. **Budget**- financial plan for the implementation of the programs or budget.
- k. **Water Consumption**- the amount of water being consumed by an individual or by an institution
- l. **Waste management**- refers to the practices how a certain individual or group manage in the disposal of their garbage.
- m. **Environmental Protection** – the ability how an individual or group of people in a certain organization maintains and manage their environment.

6. Importance of the Study

The findings of the study are highly beneficial to the college for improving the environmental practices which take part on the global problems through environmental issues.

7. Scope and Delimitation

This research was designed to audit the present environmental management program and practices of the Camarines Sur Polytechnic Colleges its awareness and implementation and to come up an Eco-Friendly School model The study was conducted from June 2013 to May 2014.

8. Respondents

The respondents of this study were the students selected randomly through Sloven Formula, faculty administrators and the non-teaching personnel.

9. Review of the Related Literature and Studies:

This section deals with the previous studies and literature that were found closely related to the present study. Discussion of the related studies and literature both foreign and local were found relevant to the totality of the present study. At Tufts University (2010), in Medford, Massachusetts, academic program exist in environmental studies, environmental health, environmental engineering, environmental management, and environmental leadership. In addition to these programs, the University environmental Institute institute facilities and coordinates environmental programs. The university institute that their student's graduates are environmentally literate and responsible citizens. The university also initiates and assist faculty a wide variety of disciplines in incorporate the teaching of environmental issues and perspective within their teaching specialties. A strong efforts has also been made at Tufts toward the environmental impact of campus operations. A program called CLEAN (Cooperation, Learning, and Environmental Awareness Now) which in a manner carries out daily activities is an important demonstration of ways to achieve environmental sustainable living. The program promotes environmental awareness and energy conservation measures on campus. Carnegie Mellon University (1998), conducted a study about Green Practice Program of the university, the following were the recommendations, a Green Practice Program must be provided an informal environmental education for the entire campus community. Another important issue was to ensure that Carnegie Mellon practices what it preachers must be, the university must supports significant research efforts in green product design, green process design, and green chemistry. In order to implement the

program, a committee to chair the program must be instituted. An active student environmental organizations must also be established as a working arm toward better education and awareness of environmental issues. Throughout the campus. Projects undertaken by this group may include increasing student environmental awareness. A research conducted by Dr. Robert Gotlieb (2003), relevant to student awareness on environmental issues suggested that students in the campus requires to work on specific environmental problems on campus. This strategy of incorporating real problem solving in the curriculum is also recommended. According, he propose that they must engage young people and faculty together in the effort to solve real problems. Virtually all schools and institutions of higher education are located in place that are losing biological diversity and the means for right livelihood, rural and urban places alike that are polluted, overexploited and increasingly derelict. Yale University in New Haven, Connecticut, a larger institution than the others previously mentioned, has various environmental research and education programs as well as a very active student environmental group. The university offers the Graduate School of Forestry and Environmental Studies, the Yale Institute for Biosphere Studies, an undergraduate secondary major titled "Studies in the Environment", a population seminar series, and related teaching and research in a variety of disciplines. The University maintains a comprehensive recycling program and promotes energy conservation. A new environmental Science Facility (ESF) will provide opportunities for students to become environmental experts. Despite these initiative, many students of Yale believe that Yale could improve its treatment of environment both in its curriculum and its operational practice and are working toward that goal by proposing a Yale Green Plan. The YSEC (Yale Student Environmental Coalition) recognizes that some of Yale's successes in environmental education and performance go unnoticed and environmental initiatives go unrecognized. One thing that the students are asking for is a stronger commitment from the administration about the Green Program. The California Institute of Technology (Caltech) is a small campus in Pasadena, California, with an emphasis on scientific research. It has a strong academic department of Environmental Engineering Science and plans to increase the current level of environmental research by promoting a new Global Environmental Science Initiative. Environmental research at Caltech, particularly the areas of air and water quality and atmospheric science had focused on current societal environmental concerns, and in so doing has played an influential role in developing solutions to many environmental problems. Despite the strong research program on environmental science and the influential contributions of many individual researchers at Caltech, the institutions of Caltech has not made a strong efforts toward ensuring all campus operations are environmentally responsible nor has Caltech made a concerted efforts of promoting environmental awareness within the Caltech community. Although general campus-wide supports for a higher degree of environmental responsibility has been demonstrated, and the idea has been presented to various administrators, the Caltech administrators has yet to make any commitment to improve environmental responsibility on campus. Many of the measure that was taken by the institutions is the building of recycling center, precautions in hazardous waste disposal and rideshare and carpool programs, were mandated. i.e, require to comply

with regulations.

Agung and Defira (2008) stressed that human factor is the largest contributor to the environmental degradation. According to them, today, the world is facing environmental degradation. Greenhouse effect has changed the global climate. Ecosystem damage and pollution have decreased the biodiversity.

Ganapin (1990) stated that environment impacts of development through the socio-economic benefits envisioned. The negative impacts of development are exacerbated by increasing population growth, rapid source, deflation and environment deterioration. However, proper management of all resource is imperative to sustain development. The value of participation in the planning of any local or a community project, which is likely to cause environment degradation, must be recognized. It is important to take into full account the knowledge and needs of people in the locality as its foremost consideration in environment management. In fact, decisions regarding development and control of negative aspects of development must be put in the hands of those who will have to live their consequences. Particularly, planning encourages greater involvement about their environment and their needs. Long lasting solution to our environmental problems is premised on increased public or citizen awareness and better understanding of its impact to our lives.

Nullan (2001) states that the source of wastes come from both rural and urban municipality industrial activities, and agricultural activities. The municipal wastes include those thrown away by the house holds and commercial establishments. Urban waste has been recognized to contribute largely to environmental problems. With an increased or dabbling of the world population in the next two years, a corresponding production will increase fivefold of human habits remain in charged.

Montgomery (2000) states the recycling or the 3r's another method, which states off before disposal is waste reduction through recycling or often coined as the 3r's reuse, reduce, and recycle on the local or regional level reducing waste is accomplished through these methods by source separation and subsequent material recovery.

Mercado (1996) states that environment preservation is an act of self-preservation. The ecology is concerned with how symbolic relationships among all things in this world could be preserve with the ultimate aim of preserving life in his planet. Respect to the environment is the primary lesson that we are expected to learn. Environment is the Mother Earth's fashionable issue that overshadows the problems of population and nature destructive forces that endanger all of us. He urged everyone to face the facts ad to start to make serious effort to find ways to save the crisis.

David GaskettNuyda (1999) author of "Seeing Green" states that solid waste disposal in Metro Manila is a problem that grows bigger every year and we can only commiserate with the towns "selected" for such disposal.

One writer, **Rafael D. Guerero III**, chair of "Basura Mo Pakinabangan" Mo Project, Los Baños Science Community

states that 6, 000 metric tons of daily output can easily become a national crisis unless immediate, efficient and long term solution are found. He proposes that 1. Solid Waste Management should start at home and be applied in schools, offices, and all areas of activities, 2. An integrated solid waste management program should be adopted in every barangay, municipality, city and province in the country using environmentally sound methods, which should be the responsibility of each unit, 3. National awarded should be given to the barangay, municipality, city and province with the most innovative and efficient integrated solid waste management program.

Paja et.al (1991) says that poor environment sanitation is the major factors to the high incidents communicable disease in country. This stems from lack of portable water supply and from the absence of the proper method of the second source of health needs. According to them environment factors affects the human behavior. If the growth development will be affected, an individual can learn such relationships between the environment and his own behaviors. He can learn how to value and act in order to satisfy his needs.

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A research conducted by **Dr. Robert Gotlieb**(2003), relevant to student awareness on environmental issues suggested that students in the campus require working on specific environmental problem on campus. This strategy of incorporating real problem solving the curriculum is also recommended. According, he proposes that they must engage young people and faculty together in the effort to solve real problems. Virtually all schools and institutions of Higher Education are located in places that are losing biological diversity and the means for livelihood, rural or urban places alike that are polluted, over exploited and increasingly neglected.

Likewise, **Ballesteros (2007)** focused his study on environmental management system of selected higher institution in Camarines Sur in a way of audit. The following variables were been considered: a) organizational set-up, b) policies, c) resource management, d) curriculum, e) budget. Based on the result, it developed a green school model that can be adopted by the higher education institution in Camarines Sur.

Another study along environmental management is the study of **Escuro(2002)**. Results revealed that the existing protection program of the schools consisted of the following waste management like burning of garbage inside the entire campus 3.55 or selected areas 3.53, biodegradable waste made into compost 3.87, sent to hog raisers 3.36, on air quality, cigarette smoking is not allowed in the campus 3.92, smoke belchers are not allowed 3.54, burning of plastic is not allowed 3.62.

A research conducted by **Galvez (2005)** identified the characteristics of environmental education instructional materials that are effective in developing pro-environmental attitudes and behaviors in pre-school children ages 3 and 5 years old. It was based on the premise that EE can be learned at this very young age. Twenty seven instructional materials and activities that have EE content were used for intervention, 25 of which were used in the classroom and 2 were used in the home setting. The materials consisted of print, non-print living plants and models. These materials were presented using varied teaching-learning strategies that includes reading and listening to stories, watching and answering questions about a cartoon, recycling things and doing at work.

Aquilino et.al, (2001) in their study, they state that human have been tremendous advances in all fields of endeavor. They have made spectacular advances in the fields of engineering, better mean of transportation on land, at seas and on air; very helpful gadget and machines for home and industry and most of the means to live a better life. Because of these developments, the earth is now a better place to live in, and because of man's ingenuity, better things are yet to come. However, man is disrupting the balance of nature as they progress for technology is not perfect. A by-product is pollution in mainly form air, water, noise, etc. This adverse effect causes our environment to be ill and serve as a big threat that if not acted soon could permanently affect the whole ecosystem.

Michael N. Olea et.al., (2003) stated in their study that one of the major problems faces by the community is the conservation of energy from the households up to the biggest industry. Earth's environment must be carefully managed to assure adequate supplies of natural resources of people of the present generation as those of future generations. One way to accomplish this goal is through conservation the protection of the environment and the wise use of the planet's natural resources.

Synthesis of the State-of-the-Art

The present study focused on the Awareness and Practices on Environmental Policies of Camarines Sur Polytechnic Colleges. This was strongly supported by the related studies as analyzed and reviewed by the researchers as to its relevance to the present study. It generally dealt on how they will be able to manage the hazardous and problems brought about by poor wastes disposal and collection, conservation and use of natural resources.

Agung and Defira (2008) states that today the world is facing environmental degradation. They stressed that human factor is the largest contributor to the environmental degradation. Likewise, **Nullan(2001)** states that urban wastes has been recognized to contribute largely to environmental problems. Furthermore, **Nuyda(1999)** author of "Seeing Green" states that waste disposal in Manila is a problem that grows bigger every year.

Ganapin(1990) and **Aquilino et. al., (2001)** stated that development has an impact to the environment. Negative impacts of development are exacerbated by increasing population growth, rapid source, deflation and environment deterioration. Development gives rise to the people to have a better life. Because of these, the earth is now a better place to

live in, and because of man's ingenuity, better things are yet to come. However, man is disrupting the balance of nature as they progress is not perfect.

David Orr (1998) and **Carnegie University** (1998) conducted a study on schools about environmental education. They stressed that education is a great benefactor on how students see, how they move, what they eat, and how to relate to each other. An active student environmental organization must also be established as working arm toward better education and awareness on environmental issues throughout the campus. It is supported by **Gotlieb**(2003) in his research that relevant to student awareness on environmental issues suggested that students in the campus require working on the specific environmental on campus.

Furthermore, **Escuro**(2002) studied the different protection programs that are implemented in the schools. This was to assess whether the school is participating in the call for revitalization of the earth and mitigation of the effect of climate change and also to inculcate among the young generation the importance of nurturing our planet.

10. Theoretical Framework:

This research was guided by **Segui's IEES Theory** (Inform, Educate, Engage and Save) which states that "in order for an individual to give its maximum participation in the different programs relevant to environmental protection, they should be knowledgeable first of the present condition of the nature. Organic and inorganic components of planet earth have involved together as a single living self-regulating system. It suggests that this living system has automatically controlled global temperature, atmospheric content, and other factors that maintain its own habitability with this theory further states that organisms could unconsciously modify environment in the way that is favorable to life. This theory becomes relevant to the present study because it will give fundamental cause of what we are suffering now. In order to make solution to the problem, we must know first where the problem comes from so that we can be able to identify where to start in planning for a solution. Environmental education and education for sustainable development should be taken into consideration. There should be guiding principles on how environmental program will be implemented so that maximum participation among the concern individual will be reached. This given theory may take into consideration our knowledge and the knowledge that we can get which may help us understand the reasons on the cause and effect relations of the things that we have done and the things that is happening now. This theory is indeed relevant in the present study as it promote concerns on environmental protection and as it recognizes the role of human being and the attainment of growth and development without damage to environment. The researchers believe that the human beings assume certain level of responsibility in development efforts and in the protection of the surroundings – the environment.

11. Conceptual Framework

This study focused on Campus Environmental Responsibility of Camarines Sur Polytechnic Colleges. The conceptual paradigm of the study is presented in Figure 2. The **inputs** to be considered is identifying the existing environmental programs of the college as well as the assessment on the

extent of awareness and implementation of environmental practices of the college towards its policy, resource management, curriculum, projects and budget. The **process** involves the preparation, distribution and retrieval of the questionnaire, data collection through survey, and questionnaire, treatment of data, analysis and interpretation of the environmental awareness and its implementation, and statistical treatment to measure the significant difference between its awareness and implementation. The **Output** is a Proposed Eco-Friendly School Model for CSPC

12. Methodology:

This is a presentation of a research method used during the conduct of the study. This also includes the respondents, data gathering tools, and procedures and statistical tools that was used to analyze and interpret the responses of the respondents about the college extent on awareness and implementation on environmental issues and concerns.

13. Methods Used:

The method that was used is through a descriptive survey method using a prepared environmental audit instruments by the researcher. An interview, actual observation and documentary analysis was also employed by the researcher during the duration of the study. Validations through picture were also done by the researcher to substantiate the data presented by the respondents.

14. Instruments Used:

Questionnaire

A campus environmental checklist survey was used in this study. The checklist were assessed on how the college responsible enough towards environmental issues and concerns. The checklist covers the policy of the college towards environment, using its resource materials, the curriculum of the college if environmental aspects are integrated in the curriculum used, The projects undertaken by the college and the budget requirements.

Preparation of the Questionnaire – In preparing the questionnaire, the researchers viewed some of the literature and studies which are related to the present study. The draft of the questionnaire was refined through consultation from the research division of CSPC. . After which it was revised and finalized, the researchers personally distributed the questionnaire to the respondents.

Validation of the Questionnaire – for the purpose of the validity of the instruments, the questionnaire was tried out to some students, faculty and non-teaching personnel. respondents during the validation was no longer part of the research respondents.

Administration and Retrieval of the Questionnaire – After the questionnaire was try out and validated the instruments personally administered to prospective respondents.

15. Interview

Interview was employed to validate some of the details in the questionnaire. This was also be facilitated to ask some pertinent opinions regarding the research. Eventually, some of the staff of the following offices were interviewed; to the

Property and Supply Officer regarding the purchase and procurement of supplies and equipment, to the students regarding the integration of environmental issues in their subject, to the Budget Officer regarding the integration and budget to the college annual budgeting program.

16. Documentary Analysis

Documentary analysis was also done to analyze if there is an existing policy guidelines of the college regarding environmental management program. This was examined on how the program, being monitored and evaluated. Along this, the following were gathered; The Eco-Friendly Program of the College and the Policy Guidelines on Solid Waste Management Program, action plans of different departments, campus organizations and as well as accomplishment reports in order to see if environmental awareness and program are actually practices in the college.

17. Respondents

The prospective respondents in this study are administrators that exclude the presidents and vice presidents, regular faculty, non-teaching personnel and students. Sloven formula to determine the respondents was employed for students. On the basis of the research there were 8 administrators, 61 regular faculty members, 43 non-teaching personnel and 361 students.

18. Statistical Treatment

For this research, the following statistical treatment was used.

1. Sloven's Formula and stratified proportionate sampling qualitative method was employed to determine the number of student's respondents.
2. T-test was used to determine the significant difference on the awareness and implementation of environmental practices of the college.
3. Weighted mean was used as the statistical tool in measuring the extent of awareness and implementation of environmental practices.

19. Results and Discussion

This section is a presentation of the discussions and interpretation of the results of the survey towards the awareness and implementation of environmental issues as part of the campus environmental responsibility of the Camarines Sur Polytechnic Colleges. The data were presented in a tabular form followed by a textual interpretation in order to provide a better insight of the study. The analysis of the data serves as the basis in formulating the conclusion and recommendation of the study.

a. Is there an Existing Environmental Management Program of the College – Along the environmental campaign of the Camarines Sur Polytechnic Colleges towards a sustainable environmental awareness, the following are the existing Environmental Management Program of the college

a.1 Policy Guidelines Implementing Eco-Friendly Program

These policy guidelines are promulgated to prescribe rules and procedures in the implementation of eco-friendly programs of the College pursuant to RA No. 8749, otherwise known as An Act Providing a Comprehensive Air Pollution Control Policy and for Other Purposes; RA No. 9003, otherwise known as the Philippine Ecological Solid Waste

Management Act of 2000; and RA No 9512, otherwise known as an Act to Promote Environmental Awareness through Environmental Education and for Other Purposes. Eco-Friendly programs of the College shall include the formulation of a holistic pollution prevention and control measures and enforcement of a system of accountability among college officials, employees and students for short and long term adverse environmental impact of any activity, project and program of the College; adoption of as systematic and comprehensive ecological solid waste management, and integration of environmental education in the school curricula. The programs cover activities, projects and programs including, but not limited to anti-pollution campaign, utilization of idle lots within campuses for organic gardens, tree planting, waste minimization, segregation, recycling and composting, water conservation, energy conservation and paper conservation. Pursuant to R.A. 9512 of 2008 or the Act to Promote Environmental Awareness through Environmental Education and to support the advocacy of the Government on Environmental management, upon the recommendation of the Administrative Council through ADCO Resolution No. 11-12, were approving the Policy Guidelines Implementing Eco-Friendly Programs of the College. The Board of Trustees approved the proposed Policy Guidelines Implementing Eco-Friendly Programs of the College per BOT Res. No. 11-718.

a.2 Policy Guidelines Implementing Solid Waste Management in Classrooms and Laboratories

These policy guidelines created to actively engage students in solid waste management by mobilizing the student organizations particularly class organizations for effective waste segregation at source also, to inculcate in the minds of the students their indispensable role in the implementation of waste segregation policy of the college. Moreover, to enhance the sense of responsibility these policy guidelines shall cover all faculty and students using the classrooms and laboratories and specifying for this purpose their responsibilities in managing their solid waste generated. Pursuant to R.A. No. 9003, otherwise known as the Philippine Ecological Waste Management, the College Administration passed an Administrative Memorandum No. 039, s. 2013 to all employees and students of the College its subject Policy Guidelines Implementing Solid Waste Management in Classrooms and Laboratories.

b. Extent on the Awareness and Implementation on Environmental Practices of the Colleges

b. 1 Extent of Awareness and Implementation of the college along Environmental Policy

Environmental policies are the top governing rules on the implementation of environmental programs and projects. If there are well defined policies on environment, programs and projects along the same line will emanate. Based from the data gathered by the researcher, environmental education is part of the mission of the college were rated Fully Aware (FA) and Highly Implemented (HI) by the respondents in terms of awareness and implementation respectively, while the other indicators such as; environmental education is integrated in the curriculum of the college, there is a provision for students, faculty and non-teaching personnel to become well verse on environmental issues and concerns, the college adopts the environmental practices inside the campus, the college

purchasing policy involves environmental friendly policies, the college has a committee responsible for the environmental projects and programs, the constructions and maintenance of the buildings and grounds are in environmental friendly ways, environmental consideration as a matter of policy are made part of the performance appraisal of the employees and there is a presence of organizations relevant to environmental awareness and protection are rated both Aware (A) and Highly Implemented (HI) respectively. On the other hand, the other indicator on policy which is environmental accountability forms part of the evaluation of the department heads supervisor were both rated Partially Aware (PA) and Partially Implemented (PI) by the college in terms of awareness and implementation. Along this, on the matter of the awareness and implementation of the college along policy on environmental practices, data revealed that these was rated Aware (A) with an average weighted mean of 3.68 and highly Implemented (HI) within the college with an average weighted mean of 3.74. Data implies that policy relevant to environmental practices are clearly adhered by the college.

b.2 Extent of Awareness and Implementation of Environmental Practices in Classrooms, Buildings and Grounds

As general observation, CSPC make use of natural lighting but not natural ventilation. Classes being held during the day regardless of the weather make use of electrical fans. There is minimal use of lighting during daytime except in laboratories and offices and in classrooms are properly ventilated. Based from the data gathered by the researcher, the following indicators were rated Aware (A); environmental friendly practices are instituted in the campus which rank 1 and waste for biodegradable and non-biodegradable waste are provided. This highly rated finding was validated by the researcher during his documentation why this was rated aware. This finding was shown with enough trash bins can be found in almost all parts of the buildings with labeled, and with well-maintained and clean surroundings. (Annex A) However, on the part of the extent of Implementation, these two (2) indicators under the resource management were rated Highly Implemented (HI). These findings maybe revealed that despite that the college is really doing its best by providing resource materials, May some of the students are not fully aware that this programs are part of the college responsibility on environmental practices. Other indicators were all rated Aware (A) for awareness and Highly Implemented (HI) were; classroom make use of natural lighting and ventilation, classroom, cleanliness and orderliness are religiously observed, the classrooms, canteen, chapel, gymnasium and other buildings are designed to make use of natural lighting and ventilation, the campus is planned to reduce the number of vehicles and covered walks are installed in the campus. As a general result, environmental practices on resource management in buildings, classroom and grounds of the college are generally rated Aware (A) and Highly Implemented (HI) with an average weighted mean of 3.85 and 3.87 respectively. Findings imply that. The college is generally doing its best to respond the government thrust and environmental awareness and protection. Basis for this, the researcher conducted documentation aside from the ratings that was given by the respondents.

b.3 Extent of Awareness and Implementation of the college along Manner of Purchasing Supplies and Materials

Based from the data gathered by the researchers, findings come up that on the manner of purchasing supplies as a matter of policy, the following were considered as Aware (A); supplies that can be recyclable, biodegradable and second hand, non-toxic materials, reusable and non-disposable, non-toxic materials, reusable and non-disposable. Along this, these products and materials are highly considered in a manner of purchasing. On the other hand, in the manner of implementation, that purchasing should consider, recyclable products, and second hand were also Highly Implemented (HI) in the manner of purchasing, while the other such as non-toxic products, reusable and non-disposable were rated Highly Implemented (HI) by the college as a matter of policy during the purchasing of products. This data was confirmed by the researcher during his interview with the supply officer and purchasing officer. Other indicators that were highly integrated as a manner of purchasing are; rechargeable batteries are preferred over disposable, computer cartridge are refilled or re-inked, the college provides guidelines in purchasing environmentally friendly materials, there is a program that established and promotes the use of ecologically sound products, and the colleges provides contract agreement/bid specifications on suppliers regarding preferences to environmentally friendly products. Generally, an average weighted mean in a manner of considering environmentally friendly products as integrated by the college was rated by its respondents with 3.75 verbally interpreted as Aware (A). This findings were also Highly Implemented (HI) by the college with an average weighted mean of 3.79. With this data, the researcher implies that the college considered those environmentally friendly products as part of considering in the manner of purchasing products. This finding was validated by the researcher with an interview, observation and documentation during the conduct of his research.

b.4 Extent of Awareness and Implementation of the college along the Use of Lights and Electricity

Energy is the cornerstone of any institutions operations; It allows lights to go on, powers the motors in laboratories, fuels the computer and heats the facilities. However, just an energy allows, classes to run, it also demands an opportunity to conserve because energy production affects land, air and water. Energy conservation is a means to reduce impacts efficiency and lower costs. Presented in table 4 is an assessment of the college on the use of lights and electricity. This data presents how the students, employees and faculty on the manner how to take it economically as one of the salient features in the environmental practices of the college. On the basis of the data presented, findings revealed that the college Aware (A) very much in the use of fluorescent lamps instead of incandescent which a weighted mean of 4.28 verbally interpreted as Fully Aware (FA). This finding was also rated as Fully Implemented (FI) with a weighted mean of 4.30. These findings were validated by the researcher with his interview top the electrician and documentation that almost all of the rooms and office of the college are using fluorescent instead of incandescent lamp. On the basis of the data presented, findings revealed that the college aware very much in the use of fluorescent lamps instead of incandescent which a weighted means of 4.28 verbally interpreted as Fully Aware

(FA). This finding was also rated as Fully Implemented (FI) with a weighted mean of 4.30. These findings were validated by the researcher with his interview top the electrician and documentation that almost all of the rooms and office of the college are using fluorescent instead of incandescent lamp. This data can be revealed to the study of Ballesteros, (2007), accordingly, as the lights and electricity use, the different education institutions in Camarines Sur utilizes lamps instead of incandescent. The former is more economical than the latter. In fact, there are schools that use incandescent instead of fluorescent particularly in walkways. Not a single classroom has been observed to have been installed with incandescent lamp. On the other hand, the following were rated as Aware (A) and Highly Implemented (HI) as far as use of lights and electricity: the classroom are naturally ventilated and only classroom that need air conditioned have it, lights is turned off when the room is well lighted with natural light, the college has a written policy on light and electricity conservation and the college has an energy efficiency program. As a general, the awareness and implementation in the use of lights and electricity has an average weighted mean of 3.98 verbally interpreted as Aware (A) and 3.88 verbally interpreted as Highly Implemented. As presented in the data, findings revealed that the college is aware and highly implements the proper use and saving of lights and electricity. This finding was validated by the researcher through observation and documentation on the lamps used in the classrooms and offices.

b.5 Extent of Awareness and Implementation of the college on Paper Conservation

All types of paper from low grade to high grade paper are being utilized by the different higher education institutions. Accordingly, in Camarines Sur Polytechnic Colleges, there is no paper recycling program to promote wise utilization of paper but offices are encourage to reduce paper consumption. As interviewed conducted by the undersigned in the duration of the study, all request of paper passes through the Office of the President, previously checked by the property custodian office. The reduction of paper consumption all lies on the department head or the head of office. Presented is assessment of the respondents on the awareness and implementation of college relevant to paper conservation. As far as to consider, since the Camarines Sur Polytechnic College is a learning students it is expected that paper is one of an existing materials as needed by students in their studies. Paper is also considered as basic needed materials in an office supplies for everyday transactions. In view of this, this data will find out how the college manifest in the proper utilization of paper. As the data presented, on the integration of the college as provides a paper recycling program for newspapers was rated as Aware (A) and Highly Implemented (HI). Recycling of office papers, pad papers were rated Moderately Aware (MA) and Highly Implemented (HI), however recycling of notebooks was rated as partially Aware (PA) and Moderately Implemented (MI) Findings can be observed that mostly of students did not recycle their notebooks so that they can use it is the next semester or school year. In the case of double sided use of paper as practiced, using it for photocopying was rated Aware (A) as part of the practiced and using it for internal communication and office memos. These indicators were also Highly Implemented (HI) by the college as practiced based from the findings of this study. On the case of

papers as used economically to lessen paper consumption, greater use of bulletin board was rated Aware (A) by the respondents. This data was validated by the researcher that bulletin boards inside the campus are an effective use for information rather by using paper as memorandum of letter. Allowing students to make use of recycled papers was also practiced by the college. While preferences mimeographing paper over white paper and use of old notebooks and greater use of e-mail were only rated as Aware. This could be a fact that using e-mail can only be effective if the college campus could be a wi-fi free. Same findings were given by the respondents in case on the extent of dissemination along program to lessen paper consumption. On the establishment of the college a program that institute and promotes reduction of paper consumption, this indicator were rated Aware while it was Highly Implemented with a weighted mean 3.84 and 4.08 respectively. As a general result, Awareness and Implementation of the college is aware along paper consumption and shown Highly Implemented by the college. However, even it was rated as highly implemented indicators that are moderately rated must be given consideration. This data was validated by the researcher in respective offices that some are using a double sided \bond paper for internal communication. On the other hand, paper conservation is one of the program of the college which is clearly stipulated in the CSPC Eco-Friendly Program but need to properly disseminated and implemented by the concerned office for both students and employees of the college.

c. Extent of Awareness and Implementation of the college on Water Consumption

Water is considered as a very significant resource that life becomes impossible without it. Agricultural, industrial, recreational and human and animal life forms are dependent on the use of freshwater. Based on our daily water consumption, the amount of water available to us is indefinite. In order to maintain an ample water supply for our generation and the next generations to come, we should look into possibilities of how we can manage to sustain this very valuable resource for without, life becomes impossible. Indicators were clearly shown in the proper practices by both the students and employees of the college as far as water conservation is concerned. Based on the data presented, the following findings revealed; Drinking water for everybody's use was rated Aware (A) and Fully Implemented (FI) This data was validated by the researcher with presence of drinking fountains installed in all building of the college for student's consumption. Water dispenser can also be found every office to ensure that employees can be provided by safe water to drink. Other indicators were also rated Aware (A) and Highly Implemented; the college provides an alternative water supply such as rain water catcher used for watering of plants and other purposes, the college has a water conservation program, the college initiates programs to reduce waste water volume and the college use reclaimed water in its facilities and landscaping. As general, on the awareness and implementation of water consumption, this was rated with a verbal interpretation of Aware and Highly Implemented (HI) by the college with an average weighted mean of 3.83 and 3.92 respectively. The Camarines Sur Polytechnic Colleges consume water from Nabua Water District (NAWAD). For an alternative use, the college install water harvester to reduce the consumption as utilizes for watering the plants and use in

Comfort Rooms. The water is used for a wide variety of purpose including research and landscaping. Although the canteens are supplied with potable water, it uses the water coming from powered electricity. The water consumption has been reduced for the last 2 years because of the installation of water harvester. Along this, the researcher believes that the college is practicing water conservation and it was validated with presence of water catcher installed every building and presence of signage's inside the comfort room and other places reminding both the students and employees o lessen the consumption of water. Programs were also instituted as one of the component in the Eco-friendly program the college. (Annex D)

d. Extent of Awareness and Implementation of the college on Waste Management

Proper waste management must be given a closer consideration of the college in as much as a huge numbers of students population and employees. Aside from that, the college provides canteen that can produce a large quantity of garbage. Along this the following are the findings of the study: All of the indicators that corresponds in the awareness of waste management was all Aware (A) as rated by the respondents, this includes, Garbage is not burned inside the campus, there is a provision for biodegradable waste disposal in the campus and the college has a system of tracking and inventorying hazardous chemicals bought and used was dominated as among the usual practiced. Other indicators that we rated Aware were; biodegradable waste are made into compost, hazardous chemicals in the laboratory are sealed before they are disposed, the college has a chemical treatment facility and the college provides programs for students and personnel relevant to proper waste disposal. On the other hand, on the extent of implementation of the college on waste management, all of the indicators as mentioned in the awareness were also all rated Highly Implemented (HI) by the college. Ranked one was placed on garbage is not burned inside the campus and least the college has a chemical treatment facility. As a general finding, the college is aware towards waste management and Highly Implemented (HI) along its policies to both the students and employees of the college with an average weighted mean of 3.87 and 3.78 respectively. As basis in the concurrent findings, the researcher implies that the colleges adheres the practices of proper waste disposal that can contributes to environmental protection program. Aside from the data presented, the researcher documented some possible actions of the college towards waste management. From the duration of the study, the researcher found out that waste is being collected by the janitors form respective offices and classroom and being segregated according to biodegradable and non-biodegradable. Waste can found in hall ways. Evident shows that garbage cans are mixture of all types of waste like plastics, bottles, papers, tin cans and dried leaves. Aside from this, the college installed some MRF along the college premises. The school canteen is an integral part of learning environment and as such should operate in a manner that supports the health message of curriculum. School are encourage to develop policy guidelines to ensure the smooth operation of the school canteen and set clear policy regarding the type of food and drinks that will be sold. Development of policy allows all members of the school community to have input and develops a sense of ownership of the canteen with

all the sectors of the school. Food service is one of the student's needs that should be provided by all HEI's as mandated (CMO no. 3. series of 2013). This data provides us a substantial discussion on how the college canteen practiced proper waste disposal as a response to college implementation on environmental awareness. Along this the following were the salient findings: The following material that should not be allowed and practiced inside the canteen were rated as; for disposal caps, disposal plates and paper napkins were rated as Aware (A) and use of plastics was rated as Partially Aware (PA) in the operation of the canteen. On the part of the implementation, indicators that were mentioned were also rated as Highly Implemented (HI) by the college in its operation. Pastries and other food items are not individually wrapped ware also rated as Aware (A) and Highly Implemented (HI). Waste segregation in the canteen as practiced were rated as Moderately Aware (MA) and Moderately Implemented as rated with a weighted mean of 2.10 and 2.30 respectively. What happened to waste in the canteen? , the following are the results on how the waste are being made in the canteen; waste is made to compost was Aware, while sent to recyclers, being recycled and converted to other products were all rated as Partially Aware (PA) On the other hand, these were all rated Partially Implemented (PI) by the canteen staff of college on how does the waste if it can be made as compost, sent to recyclers, it can be recycled or converted to other products. Along this, as a general finding on the awareness and implementation on proper waste management in the canteen were generally rated as Moderately Aware (MA) and Moderately Implemented (MI) with a general weighted mean of 2.99 and 2.82 respectively. Along this finding, the researcher confers that the management of waste in the canteen is not properly practiced and implemented by stall occupants and users. With this finding, the college must look into consideration in as much as huge volumes of waste are being produced by the canteen. During the duration of the research, being one of the end user and part of the monitoring job as Students Affairs Director, the researcher made some documentation to validate the findings in the survey. Along this, it implies that a huge volume of waste is being produced and waste materials are just being thrown at the garbage bins and sometimes it is being brought by the stall occupants to their respective homes. Generally, Camarines Sur Polytechnic Colleges prohibit smoking inside the campus as means of maintaining air quality. The college enforces the No smoking Policy and not a single student or personnel has been observed to have violated the policy not even the Director of Student Development Services. Based from the data gathered, the following are the findings of the study; some of the indicators as stated were all rated Moderately Aware (MA) and Moderately Implemented (MI). Rank 1 was cigarette smoking is prohibited inside the campus. Despite of the signage's posted inside the campus such as no smoking inside the college still it is not properly integrated and disseminated. The other indicators that were also rated as partially aware (PA) and Partially Implemented (PI); the college provides a program to promote rid sharing. As a general result on the extent of awareness and implementation of the college along air quality maintenance, this was rated as Moderately Aware (MA) and Moderately Implemented (MI) with n average weighted mean of 2.61 and 2.60 respectively. Along this finding, the researcher implies that upon his observation and interview, the CSPC has no strict monitoring scheme as far as

air quality maintenance brought about by automobile and motorcycles exhaust inside the campus. They all depend on the registration of the Land Transportation Office (LTO) With the foregoing findings, the researcher implies that air quality management must be given a particular attention by the college as stipulated in the data. Programs for air quality maintenance should be given a due consideration review and implementation. University of Waterloo is focusing on reducing air pollutant from the campus stationary sources. They installed carbon dioxide monitors in order to control ventilation use. Furthermore, UW has compressor which captures Freon from their cooling system. As a result, high efficiency air removal occurs with minimal loss of Freon.

E. Extent of Awareness and Implementation of Environmental Issues in the Integration in the Curriculum

The implementation of Environmental Practices tripod collaboration between the administration, the faculty and students among the colleges and universities. Along this, integration of environmental aspects must be integrated in curriculum for a comprehensive implemented of the program. Hence, the findings on the awareness, integration and implementation on environmental topics in the curriculum are presented in table 10. As the data gathered, the following indicators rated as Aware (A) as far as curriculum is concerned; classes are conducted in environment friendly ways, the college celebrates environmental science month, the college participate in environmental advocacies and the college offer seminar on environment/lecture on environment. These findings were validated by the researcher why this was rated very high by the respondents. Along this during the process of documentation, programs related to environment were regularly conducted by the college through the office of student development services. Along this, a campus organization was organized with primary objectives to help save mother earth. Tree planting was also regularly done by the students and employee known as “**30 mil na Pananon**”. Other indicators that were rated Moderately Implemented (MI) are; the college provides course offerings related to environmental science, the college provides environmental science subjects to all courses, the college upgrades faculty members teaching environment subjects by; sending them to seminars, inviting resource speakers to tackle environment. On the other hand the following indicators were rated Moderately Implemented (MI); requiring teachers to integrate environmental issues in their subject matter, the college institutes environmental friendly practices inside the classroom and the college incorporate environmental issues in their respective syllabi. Along this finding, as validated by the researcher in respective programs, environmental science subject is part of the curriculum as 3 units' subjects of all its programs. This subject is being taken by the students during their first year level. However, other than subject such as environmental science, issues on environment are not integrated as part of their syllabi. However, noted that, other indicators were rated Partially Aware (PA) such as Requiring teachers to integrate environmental issues in their subject matter and the college institutes environmental friendly practices inside the classroom. This data was also interpreted as Partially Implemented (PI) and Moderately Implemented (MI) as far as implementation is concerned. As far as extent of implementation is concerned, almost all of the indicators were rated Moderately Implemented (MI) except for the following

which are rated Fully Implemented (FI) which is, the college celebrate environmental science month. In the monthly activity of the college, science month is celebrated every last Wednesday of September which is being spearheaded by the College3 of Engineering and the Association of Students on Environmental Awareness and Protection (ASEAP) an accredited student organization. Series of activities are line up in this activity. Apparently, the CSPC integrate environmental issues in the curriculum, the syllabi in natural Science contain topics on environment. All students under the general education curriculum are being taking in Natural Sciences, Biology and Earth Science. Furthermore, chemistry, zoology are being taken by nursing students. As a general finding, awareness of environmental issues in the college curriculum was instituted with an average weighted mean of 3.64 and Highly Implemented with an average weighted mean of 3.47 on the issue on environment in the curriculum of Camarines Sur Polytechnic College. Based from the findings of this study, the researcher hereby implies that do it was rated high there is a need to stress the rated low like requiring teachers to include in their own syllabi. Proper orientation on the part of the teachers is also encouraged to give them a full awareness and understanding why this should be a part of their daily routine as classroom teachers.

f. Extent of Awareness and Implementation of the college along Environmental Projects

In the awareness and implementation of some environmental practices, projects are deemed it necessary for factual and tangible results that will show us that the college really undertaking some initiatives in the implementation of its programs. Such projects can be undertaken by students through its student organization, by the employees itself as part of their participation aside from the usual routine in their respective classroom and offices. Along this, the following are the salient findings: Indicators that were rated Fully Aware (FA) were; the college undertakes tree planting and physical greening program, the college conducts campus beautification like landscaping, planting of ornamental plants, establishment of greenhouse, school gardens and the college undertakes campus cleanliness. This data were supplemented by documentation done by the researcher during the duration of the study as indicators that this was rated as Highly Implemented (HI) based from the data gathered.. As documented, the college conduct tree planting along Rinconada area through its students and employees. The college also sees to it to maintain its cleanliness and orderliness inside the college premises. Along this in observation of the researcher, the college initiated indoor planting and beautification which are evident within the campus. There is no evidence of tree planting within the campus considering the campus size and set-up. Outside tree planting activities are part of the community extension activity. Cleanliness is manifested in the campus and part of the school façade is landscape. Students participate well in campus cleaning activities. Other indicators along this were rated by the respondents as Moderately Aware (MA), thus; the college impose penalty or acts related to vandalism and the faculty require students to clean the classroom before leaving which was also rated as Moderately Implemented (MI) With the aforementioned findings, the researcher implies that although the college initiated some projects related to environment but still are need to be enhance especially integrating as a

culture not only to students but also to faculty and employee. Like requiring students by the teachers to clean the room before leaving is a manifestation of faculty on their participation of the program. On the other hand, in case of the extent of implementation of environmental projects, almost all of the mentioned indicators in the integration were rated by the respondents as Highly Disseminated (HD) except of the following which were rated as Highly Implemented (HI) except for the faculty require students to clean the classroom before leaving, the college construct botanical garden and the college impose penalty on acts related to vandalism which were rated as Moderately Implemented (MI) These data have synonymous findings on its awareness along its projects. As general findings, the extent of awareness and implementation of environmental projects in the college are generally rated as Aware (A) and Highly Implemented (HI) with an average weighted mean of 3.85 and 3.65 respectively. With this, the researcher implies that projects in the campus related to environment are generally implemented; however some need to focus for a more concrete implementation of the projects. Along this, some were the actual projects being undertaken by the college as documented by the researcher in the conduct of the study. These are "30 mil na Pananum" (Tree Planting program) which was spearheaded by the extension office in observance the CSPC 30th Chartered Celebration, Clean-Up drive by students, "Lakbay Kalikasan" by the students and many others.

g. Extent of Awareness and Implementation along Budget Allocation related to Environment.

During the conduct of the study, the researcher mad an interview to the Budget officer relative to budget allocation for the program on environmental programs, projects. Along this the following questions were raised by the researcher: 1) Is there is provision of special fund environmental activities, 2) Is the college provides faculty development program and activities designed for the training of teachers on environmental issues and 3) is the college maintains a functional office that delivers and promotes environment related activities. As a result of the interview, the following were given a factual answer: As stated and mentioned by the budget officer, the funding for programs and projects relevant to environment can be taken from the following; through donations, grants and contributions from campus organizations of students, employees, alumni and parents. Also a certain amount specifically appropriated by the college to funs the programs through its Eco-Friendly program of the college. Faculty were also send for seminars and trainings related to environment as part of the Faculty Development Program which are incorporated in respective budget of the departments.

h. Significant Difference in the Integration and Dissemination of the College on Environmental Programs and Practices:

Based from the statistical treatment T test that was applied, it was noted that the tested hypothesis were rejected, meaning there was no significant difference on the assessment of the respondent between the extent of awareness and implementation along the following indicators since the computed value for Policy on environmental practices which is 0.292 is lower than the tabular value at 0.05 which was computed as 2.101, environmental practices on classroom and

buildings the computed value is 0.083 and the tabular value is 2.179, for manner of purchasing, the computed value is 0.46 and the computed tabular value is 2.228, for use of lights and electricity, the computed value is 0.738 while the computed tabular value is 2.306, for paper consumption, the computed value is 0.551 while the computed tabular value is 2.447, for water consumption, the computed value is 0.667 while the computed tabular value is 2.306, for waste management, the computed value is 1.331 while the computed tabular value is 2.12, for waste management in the canteen, the computed value is 0.331 while the computed tabular value is 2.447, air quality , the computed value is 0.153 while the compute tabular value 2.306, for the integration and dissemination of the environmental practice in the curriculum, the computed value is 0.751 while the computed tabular value is 2.086 and the last for environmental projects, the computed value is 0.846 while the computed tabular value is 2.086. As implied in the data, the researcher thereby implied that the assessment of the respondents on the extent of awareness and extent of implementation along environmental practices on the presented indicators are the same, hence the null hypothesis was accepted.

Proposed Eco-Friendly School Model

The larger task of education is to help expand our sense of ecological and human possibilities. It is a positive response to promote ecological imagination and help to develop ecological competencies. With the global climate issues today, schools requested its officials to investigate how to promote eco-schools in the future, and more so to conducted survey research on the changing circumstances of school facilities, the most recent actual condition of energy consumption, the long-term perspectives of energy consumption, and so on. In seismic reinforcement, it is common to try to improve the quality of indoor conditions in order to secure a proper learning environment, and try to enhance the facilities to allow multipurpose uses in order to make schools open to people in the community. The proposed Eco-friendly school model will serve as a guide for the college to promote awareness on programs related to environment.

Conclusion

Based on the findings the following conclusions were drawn:

1. That there are existing environmental practices in Camarines Sur Polytechnic Colleges were Policy Guidelines Implementing Eco-Friendly program and Policy Guidelines on Solid Waste Management on Classrooms and Laboratories.
2. Extent of the awareness and implementation along the following indicators such as policy on environmental practices, on classroom, building and grounds, manner of purchasing, use of lights and electricity, paper consumption, water consumption, waste management, curriculum, and projects were rated as Aware (A) and Highly Implemented (HI) by the college both the students, faculty, administrators and non-teaching personnel.
3. On the maintenance of the college on air quality and waste management in the canteen were generally rated as moderately aware (MA) and Moderately Implemented (MI) respectively.
4. Budget was also allocated to finance on programs and practices of the college relevant to environment.

5. There were no significant difference in the extent of awareness and extent of implementation on environmental practices of Camarines Sur Polytechnic Colleges.

Recommendations

Based from the findings and conclusions, the following are the recommendations:

1. The college must continuously incorporate in its mission and vision environmental management in order to remind all its stakeholders their existence responsibility and stewardship. They must make commitment signed by the head and witness by the entire school community.
2. The college must look on the present environmental status and find out the degree to which they damage the environment so that appropriate solutions will be made and at least to propose action that can minimize the problem.
3. Improvement of the awareness of implementation of maintenance of proper air quality in the college may be adopted.
4. Improvement on the awareness and implementation on the proper waste management in the canteen may be adopted.
5. Proper Dissemination to the faculty the integration of environmental practices in their subject maybe part of the curriculum review.
6. Cooperation of the teachers by requiring the students to clean their respective classroom before leaving it may be adopted.
7. Environmental accountability may forms part of the evaluation of the department deans and heads of units.
8. May use E-mail to reduce paper consumption
9. Environmental practices maybe form part of the culture by all stakeholders of the college such the students, faculty and non-teaching personnel.
10. Environmental education must be intensified. These can be done through symposia, trainings and workshop. A sustainable regular activity so as to promote the environment is a good avenue for shaping ones behavior after all, the main functions of the college is to educate.
11. The college must adopt the proposed Eco-Friendly School Model developed by the researcher for a more responsible environmental advocate's school community.

References:

- [1] College Code (Book 3, 2011)
- [2] CMO No. 21, series of 2000
- [3] Green-Business Letter, 2001. The Green Business letter <http://www.greenbiz/glb/subscrib.cfm>.
- [4] Cortese, A.D., ScD., 1992, Education for Environmentally Sustainable Future: A Priority for Environmental Protection, Environmental Science Technology"
- [5] Smith, A>A., 1993, Campus Ecology, a Guide to Assessing Environmental Quality and Creating Strategies for Change
- [6] Eagan, D.J. and Orr, D.W., 1992, The Campus and Environmental Responsibility, New Dimension for Higher Education, no. 77.
- [7] Creighton, S.H, 1998. Greening the Ivory Tower, Improving the Environmental Task Record of Universities, Colleges and other Institutions, the MIT Press, Cambridge, MA>
- [8] Gottleib, R. 2000. Professor of Urban and Environmental Policy, Occidental College, Personal Communication
- [9] Orr, D.W., 1998/1999, Breaking Ground, Yes! A Journal of Positive Futures, winter, 24-25.
- [10] Green Business Letter, 2001, The Green Business Letter, <http://www.greenbiz/glb/subscrib.cfm>.
- [11] NugrohoAgung and Ira KaniaDefira, Reaching Environmental Awareness and Community Involvement through Conservation Education, www.seaza.org/scientific papers/reaching environmental awareness.
- [12] Gotleib, R. 2000. Professor of Urban and Environmental Policy, Occidental College, Personal Communication
- [13] Ballesteros, Jose B. Environmental Management Systems Audit of Selected Higher Education Institutions in Camarines Sur, Unpublished Dissertation, Bicol University, Legazpi City, 2007
- [14] Escuro, Julieto C. Environmental Program in Schools, Division of Camarines Sur, Unpublished Thesis, University of Saint Anthony, Iriga City, 2002
- [15] Galvez, Farah Experanza R. Characterization of Instructural Materials in Environmental Education for Preschool Children, Unpublished Thesis University of Saint Anthony, March 2005
- [16] Delfin Ganapin, "Philippine Strategy for Sustainable Development " Manila Tagason (1990)
- [17] Sesnator Orlando Mercado, "The Future of the Philippine Environment" the Philippine BIOTA! Vol.22 (1), 1996
- [18] Aquino et.al, "Values Orientation of CSPCceans Towards Sustainable Environment" CSPC Nabua, Camarines Sur 2001
- [19] Michael N. OLea et.al, "Waste-Heat Recovery Equipment for Domestic Refrigeration System" CSPC, Nabua, Camarines Sur 2003.
- [20] Jose F. Calderon, Ed. D, "Methods of Research and Thesis Writing", (National Book Store, 1993) CMO No. s1, series of 2006