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VALUE ORIENTATION AND ENVIRONMENTAL BEHAVIOR OF TEACHER EDUCATION STUDENTS

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Abstract: *This study aimed to examine the environmental value orientations and environmental behaviors of the Teacher Education students in the Cagayan State University, Philippines and to correlate between the two variables. The study also determined the impact of the gender on the environmental value orientation in the three dimensions: ecocentrism, anthropocentrism and apathy and the respondents' behavior. Findings indicate that the respondents are more inclined toward ecocentrism and anthropocentrism. Environmental apathy was least preferred. Statistically, there were significant differences according to the sex of the students in ecocentrism and anthropocentrism dimensions in favor of female Teacher Education students. Conversely, the difference arising from the value domain-environmental apathy between male and female is not statistically significant. The level of manifestation of environmental behaviors of female respondents had slightly higher level of manifesting environmental behavior than the male group and both their mean scores had an interpretation of sometimes manifested. The Pearson Coefficient correlation between environmental values in two dimensions (ecocentrism and anthropocentrism) and the environmental behavior resulted a positive value. It means that as the students are more ecocentric and anthropocentric, the stronger they manifest pro-environmental behaviors. On the other hand, apathy domain and environmental behavior was negatively correlated. It means that there were students who have high apathy but on the contrary pro-environmental behavior was manifested. However, there were also those who have low apathy but they did not manifest pro-environmental behavior. Lastly, the study reveals that there is no significant relationship between values in three dimensions and the level of environmental behaviors, which lend partial support to Thompson-Barton's Environmental Value Dimension in relation to the validated self-made Environmental Behavior tool. Generally, findings indicate that as students' environmental values are inclined toward love and respect to environment for the sake of the nature (ecocentrism) and*

for the people in the society (anthropocentrism), the lesser they manifest pro-environmental behaviors or vise versa. It may also mean that as the students' environmental value lean towards environmental apathy, pro-environmental behaviors may still be manifested.

Keywords: *Cagayan Philippines, Teacher Education Students, Value Orientation, Environmental Behavior, Ecocentrism, Anthropocentrism, Apathy*

INTRODUCTION

Values are deemed to be the most vital factors that direct human behavior. They also play a critical role both on the personal and societal level for they serve as the foundations to the individual's preferences. Values are primarily influenced by parents, home environment, school environment, peer group, spiritual experiences and even media. Values are deeply rooted in the minds of individuals, and are considered profound motivations that may guide and determine a person's behaviors, attitudes, standards, and opinions.

On this study, a basic question needs to be raised: "What are behaviors that most effectively addressed environmental problems?" It is not enough for environmental education to promote initiatives for the nature or environment, rather it needs to emphasize the most strategic actions to help achieve protective and healthy environment. The yardstick for responsible environmental behavior in research is typically focused on private actions, such as turning off unused lights, recycling, composting, green purchasing or listening and reading about environmental issues. As used in this study, environmental behavior involves the conscious application of an environmentally sound and socially responsible tenet to lifestyle choices. Environmental behaviors are practices that can be carried-out in daily life by the individual to protect the environment. In several cases, environmental behavior can be determined based on its impact on the environment and it is usually described as environmentally friendly or unfriendly. In some situations, it can be evaluated easily, like putting a litter in the bag pocket while on travel is more positive than throwing them outside a moving vehicle; shutting down a laptop while on long break is more favorable than keeping it on sleep mode. These positive environmental behaviors can be called as pro-environmental behaviors. These are actions that willfully seek to lessen the negative impact of one's actions on the natural environment in an attempt to minimize resource and energy consumption, reduce consumption of hazardous and toxic substances and reduce waste production.

Several studies have shown that values contribute to the explanation of various environmental behaviors. The value scales of Schwartz (1994) have been successfully used for explaining general environmental concern (Schultz & Zelezny, 1999) as well as more specific environmental attitudes and beliefs (Stern & Dietz, 1994). Karp (1996) demonstrated that Schwartz's values were significantly correlated to various pro-environmental behaviors, such as recycling behaviors, consumer behavior, and political behaviors to protect and improve the environment.

The environmental value classification method by Thompson & Barton (1994) is the one preferred in this study. They have set up environmental values that are important to the person (individualistic), and those that are important to others (social) under the context of anthropocentrism. It considers humans to be the most important life form, and other forms of life to be important only to the extent that they affect humans or can be useful to humans. In an anthropocentric value, nature has moral consideration because degrading or preserving nature can in turn harm or benefit humans (Kortencamp and Moore, 2001). So in using this value dimension it would be considered wrong to throw garbage in the river because it is inhabited by potential food sources for human. On the other hand, the values concerning nature have been placed under the name of ecocentrism. Thompson & Barton believed that individuals who have environmental values focused on ecocentrism tend to care and work for the environment regardless of the consequences; such as reducing the amount of comfort or luxury, or raising with extra financial expenses. They assume that environmental values concerned with nature are strongly correlated with activities that attempt to protect the environment, while those focused on the individual and society are less correlated with the same type of behavior toward protecting the environment (Stern & Dietz, 1994). The third value is environmental apathy which is possessed by people who are antagonistic toward environmental issues (Casey & Scott, 2006). This environmental indifference can be as destructive as anti-environmental.

Based on the cited theories environmental value orientations such as ecocentrism, anthropocentrism and apathy play a significant role in environmental issues, and must be considered when attempting to find solutions for environmental problems affecting different communities; such as global warming, loss of biodiversity, air and water pollution, and the destruction of wildlife. Dealing with these problems, there must be actions taken to

protect and preserve the environment that are dependent on environmental values. Possessing best environmental values and behaviors are necessary to achieve sustainable practices and policies. Additionally, if our values were to change and become more inclined towards ecocentrism, it would lead us to make responsible decisions that protect and preserve environment.

Hence, this study was conducted to help bring about solutions to the environmental problems, concerns and issues besetting our University. The findings of this study may possibly give an idea to the future educators about appropriate environmental value orientations and pro-environmental behaviors which they will adopt in their future endeavor as advocate and steward of school environment. It provides recommendations for the design of possible well-customized and more effective environmental initiatives and strategies to promote environmental awareness and practices. This is particularly more useful to the environmentally inclined-minor organizations; the Extension Program of the College of Teacher Education across campuses of the University as they are also working on the area of environmental awareness; and to the teachers of the Environment-related courses. To enrich the environmental knowledge of the students as gained from the offered courses, the College may restructure its co-curricular activities like trainings, seminars and other forms of environmental support that would all be based on the types of environmental value orientation and level of environmental behavior of our students. These activities must focus on deepening the environmental values and to promote pro-environmental behaviors of the students. With these, the findings of this study would possibly help the College of Teacher Education of the University to come up with improved ecological profile. The results may also provide baseline information to restructure the research thrust and to create policy of the University along with environmental issues. Eventually, the study may help in the creation of an ENVIRONMENTALLY SUSTAINABLE University.

Generally, this study aimed to examine the environmental value orientations and environmental behaviors of the Teacher Education students in the Cagayan State University and to correlate between the two variables. Specifically, the purpose of this study is to determine the environmental value orientations of the respondents, in accordance to three dimensions such as ecocentrism, anthropocentrism and apathetic. The study also

determined the impact of the gender on the environmental value orientation in the three dimensions. The significant difference between the environmental value orientations and environmental behaviors of the Teacher Education students when grouped according to gender was also statistically analyzed. This paper also investigated the level of the environmental behaviors of the Teacher Education students, who were grouped according to gender. The significant relationship of the environmental value orientations among Teacher Education students and their level of environmental behavior was likewise determined and analyzed.

RESEARCH METHODOLOGY

Research Design

This study made use of the descriptive-correlation design. This design systematically described the relationship of the environmental value orientations and the environmental behaviors of the respondents.

Research Locale

This study was conducted at the Cagayan State University, specifically at the College of Teacher Education of the seven campuses such Andrews, Aparri, Gonzaga, Lallo, Lasam, Piat and Sanchez Mira.

Respondents of the Study

The study population was the Third Year BEED and BSE students enrolled on second semester of the academic year 2015-2016. The Third Year population was intentionally considered because they had already completed the course Special Topics with Environmental Education as one of its components. This course had raised the respondents' awareness on issues impacting the environment upon which all individual depend, as well as strategic actions one can take to improve and sustain it.

Sampling Procedure

The purposive sampling procedure was used in this study. The Third Year students of the College of Teacher Education who completed the course Special Topics were specifically chosen within the population of CSU students in the entire university. This sample of respondents was useful to better achieve the purpose of this research endeavor. There were 756 respondents considered in this study.

Research Instruments

The data were gathered using the two sets of questionnaires: Environmental Value Orientation Questionnaire and Environmental Behavior Questionnaire. The Environmental Value Questionnaire, developed by Thompson and Barton in 1994, consists of 25 statements which are categorized into three dimensions such as anthropocentrism (10 statements), ecocentrism (10 statements) and environmental apathy (5 statements). The Value Orientation tool obtained responses organized on a 5-point Likert Scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliabilities (Cronbach's alpha) of the ecocentric, anthropocentric, and apathy scales, as reported in Thompson and Barton (1994), were 0.78, 0.67, and 0.82, respectively. Based on previous Asian research studies, Value Orientation questionnaire showed to be suitable for local use. However, to ensure its usage in the University, the self-made instrument was presented to experts for evaluation and feedback.

The Environmental Behavior questionnaire was designed to measure the level environmental behavior manifested by the respondents. This questionnaire consists of 50 statements, related to desirable behaviors which exhibit protection of the environment or otherwise known as pro-environmental behavior. The behaviors considered were only those that are easily performable and typical to Teacher Education Students of Cagayan State University. It was designed to cover several areas such as rationalize consumption, optimal use of energy and natural resources, recycling, preservation and conservation behaviors. It was presented to a group of experts in the field of Environmental Education/Science in order to ensure clarity of statements and extent of its execution. It was piloted on a small sample and after receiving the feedback, the tool was finalized with 50 statements and have responses organized on a 5-point Likert scale ranging from 1 (never) to 5 (always). Since there are few statements that are not applicable to some students, thus, zero (0) was considered in the scale.

Data Gathering Procedure

The research was undertaken with the following data gathering procedure: first, a request letter was prepared to ask permission from the University President and the CEOs of the other six campuses to float the questionnaires to the identified respondents. Second, the questionnaires were personally floated by the researcher. Prior to the distribution, the

researcher discussed to the respondents the purpose of the study and the mechanisms on how to answer the questionnaires.

Data Analysis

The data were gathered, tabulated, analyzed and interpreted using various statistical tools. The over-all means and standard deviations for all the students' scores were calculated for each dimension (anthropocentrism, ecocentrism, and environmental apathy) of the environmental value orientation scale.

Calculation of the means and standard deviations were also used to answer the Environmental Behavior tool, which concerned with investigating the impact of gender of the respondents on environmental value orientations. A t-test was done to investigate whether the differences were statistically significant. Further, to analyze the data on the correlation between the two main variables: Environmental Value Orientation and Environmental Behavior, the Pearson-r Coefficient Correlation was used.

On the other hand, the Environmental Behavior scale was made with 5-Point Likert Scale with the following descriptions:1 = Never manifested, 2 = rarely manifested, 3 = Sometimes manifested, 4 = Often manifested, 5 = Always manifested

RESULTS AND DISCUSSION

Table 1. Over-all Mean and Standard Deviation of the Environmental Value in Three Dimensions of the Teacher Education Students

Value Dimensions	Mean	Standard Deviation	Interpretation
Ecocentrism	3.82	0.99	Agree
Anthropocentrism	3.82	0.96	Agree
Apathy	2.78	1.11	Neither Agree nor Disagree

Table 1 reveals the result of the over-all mean and standard deviation of the environmental values in three domains, 3.82 with a descriptive scale of agree with respect to both ecocentrism and anthropocentrism, whereas 2.78 interpreted as neither agree nor disagree for environmental apathy. This means that the CSU students have a mixture of environmental values in three domains, but the environmental values were more inclined toward ecocentrism and anthropocentrism. The environmental apathy ranked last.

These findings were consistent with the results of different earlier studies, which concluded that any individual may have environmental values in three dimensions with varying levels (Stern & Dietz, 1994, McMillan et al, 2004, Snelgaer, 2006). The high rank of environmental values among Teacher Education students in econcentrism and anthropocentrism may be attributed to the compliance of the College of Teacher Education with the curricular competencies set to promote awareness and sensitivity on environmental issues, problems and concerns. However, the over-all mean of the environmental values in the two useful dimensions- ecocentrism and anthropocentrism did not reach a level interpreted as *strongly agree*. This result was may be due to lack of University's Environmental Policy and Management System which promote best practices and provision of support to students that could lead them to minimize personal environmental adverse impact and that of the University as a whole.

Table 2. Comparison in the Environmental Value Orientation of Students When Grouped according to Sex

Variables	Mean	t- computed	Probability Value	Interpretation
Ecocentrism				
Male	3.72			
Female	3.85	3.1118	0.0021*	Significant
Anthropocentrism				
Male	3.75			
Female	3.84	2.1942	0.029*	Significant
Apathy				
Male	2.76			
Female	2.78	0.3823	0.7025	Not Significant
Overall Environmental Value				
Male	3.54			
Female	3.63	2.9678	.0033*	Significant

*Significant at $\alpha = 0.05$

Table 2 shows the comparison of the over-all mean score in the environmental values in three dimensions of male and female students. The over-all mean of the female students were higher than male students on two dimensions-ecocentrism and anthropocentrism with 3.85, while the means of male students were higher than those of female students on the third dimension - environmental apathy. This implies that the environmental values of female students are more inclined toward ecocentrism and anthropocentrism, and less inclined toward environmental apathy as compared to male students.

To investigate further whether these differences were statistically significant, a t-test was carried out which are likewise seen in Table 2. It also shows significant differences according to the sex of the students in ecocentrism and anthropocentrism dimensions in favor of female students. These results with regard to the gender of the students are similar with the results of many previous studies, which have shown that females are more interested in the environment compared to males (Schultz, 2001 and Casey and Scott, 2006). Similar findings were reported by Stern & Dietz that the differences were in favor of females, particularly with respect to environmental value orientations in the two dimensions: ecocentrism and anthropocentrism. Generally, previous studies in this area point out that females give greater interest to the environment compared to males in different parts of the world, regardless of their educational achievement, socio-economic status, culture, religious affiliation and especially if the environmental issues pose a risk to health. The study undertaken by Tuncer and his associates showed that females are more aware of environmental problems and individual responsibility than males. Some of Women's Rights Advocates believe that women are more concerned in the problems of the environment than men, because women are more closely related to the Mother Earth due to their ability to give birth and nurture for newborns. Females are generally developing more positive attitudes towards the environment and greatly struggling to achieve balance and harmony with nature than males, hence, females' values lean mostly towards ecocentrism. Moreover, women are working towards advocacy on restoring the natural environment and perform to ensure a good quality of life for humans and other creatures on Earth. Lastly, based on societal-environmental forces the different communities prepare women to play the role of care and protection and encourage them to be more compassionate, merciful, and tender (Casey & Scott, 2006).

Conversely, the difference arising from the value dimension-environmental apathy between male and female was not statistically significant. In other words,' male environmental values in apathy dimension were neither worse nor better than the apathy value possessed by female students. Obviously, this result gives impression that males may also have a greater chance to acquire better environmental values that lean toward ecocentrism and anthropocentrism.

Table 3. Over-all Mean and Standard Deviation of the Level of Manifestation of Environmental Behaviors of Male and Female Teacher Education Students

Gender	Mean	Standard Deviation	Interpretation
Male	3.14	1.3	Sometimes Manifested
Female	3.17	1.27	Sometimes Manifested

To answer the fourth problem of this study along with the students' level of manifesting environmental behaviors, the mean and standard deviation were calculated for each item of the scale of the environmental behavior of male and female students. On the other hand, Table 3 shows the over-all mean and standard deviation of the level of manifestation of environmental behaviors of male and female Teacher Education students. It shows that female group has slightly higher level of manifesting environmental behavior with an over-all mean of 3.17 than the male group with an over-all mean of 3.14. Both mean scores have an interpretation of *sometimes manifested*. However, though validated it must be noted that the measured level of manifestation of environmental behavior had only resulted from a limited environmental behavior tool which may be different from the actual and holistic environmental behavior.

Table 4. Pearson-r Correlation between Environmental Value in Three Domains and Level of Environmental Behavior

Value	r-Computed	Interpretation
Ecocentrism	0.0289	Not Significant
Anthropocentrism	0.0513	Not Significant
Apathy	-0.0315	Not Significant

Table 4 shows the Pearson coefficient correlations between the two main variables such as environmental orientations in three domains and environmental behaviors. It shows a positive correlation between environmental values in two dimensions (ecocentrism and anthropocentrism) and the environmental behavior, where the correlation coefficients were 0.0289 and 0.0513, respectively. It means that as the students are more ecocentric and anthropocentric, the stronger they manifest pro-environmental behaviors. Most of the studies have shown that there is a positive correlation between the environmental value orientations in term of ecocentrism and anthropocentrism and the expected level of environmental behavior. The results of this study are in agreement of a Schultz study

(Schultz, 2001) regarding the correlation in term of ecocentrism dimension and the environmental behavior.

This same table also indicates the correlation between the environmental values in apathy domain and environmental behavior which has reached a negative value -0.0315. Based on this finding, it is surprising to note that there were students who have high apathy but on the contrary pro-environmental behaviors were manifested. However, there were also those who have low apathy but they did not manifest pro-environmental behavior. This was possible because students' beliefs, emotions and values may not necessarily be translated into actions. Expected behaviors did not manifest may be due to some contextual factors like the pressures brought about by the stringent implementation of environmental programs and thrusts of the college. It can also be accounted to the strong adherence of the respondents to personal, cultural, social and political character and identity.

Table 4 also shows that there is no significant relationship between environmental value orientation in three dimensions and level of environmental behavior. The compute correlation coefficients along the three dimensions of environmental value orientation are less than the tabular value at 5% significance level. This result lends partial support to Thompson-Barton's Environmental Value Domain in relation to the validated self-made Environmental Behavior tool. This finding indicates that as students' environmental values are inclined toward love and respect to environment for the sake of the Mother Earth (ecocentrism) and for the people in the society (anthropocentrism), the lesser they manifest of pro-environmental behaviors or vise versa. This insignificant relationship between value dimensions and environmental behavior may also mean that if the students have value that lean towards environmental apathy, they may possibly manifest pro-environmental behaviors.

The insignificant relationship between value domains and environmental behavior is consistent with the results of several previous studies along in this line (Schultz, 2001, Casey & Scott, 2006). Clearly, environmental behavior is not only dependent on motivational factors but is also determined by contextual factors. Some behaviors may be more difficult to perform (for some people) and therefore less likely to be completely dependent on motivational factors (Black, Stern, & Elworth, 1985; Poortinga et al., 2003; Stern, 2000).

CONCLUSION

It is clearly concluded that both male and female Teacher Education students need stronger drive in order to develop and deepen their environmental values, so that these values would become more inclined towards nature or environment (ecocentric). Consequently, when ecocentric value is translated into pro-environmental behavior it could be more likely to work in support of the nature for the sake of the school and community environment of their future learners. On the other hand, the male and female Teacher Education Students who are anthropocentric or those inclined toward the individual and society are more likely to protect the environment for the sake of the welfare and quality of life of their future learners and the community as a whole. Environmental apathy on the other hand, should be minimized for this is a value domain not indispensable to possess by future teachers.

Likewise, it is concluded that based on the results of this study the sole Thompson-Barton's Environmental Value Tool is too limited to explain environmental behavior. The environmental behaviors of Teacher Education students may be shaped by other rational considerations or behaviors that are maybe broadly determined by contextual factors such as individual opportunities and abilities or their adherence to personal, social, institutional, cultural and political character and identity.

RECOMMENDATIONS

Based on the findings of the current study, the researcher recommends the following:

1. To help improve the environmental values of the students and engage them to manifest pro-environmental behaviors, the College of Teacher and/or Cagayan State University should organize Environment Committee which will create environmental policy and management system that could be presented to and approved by the University Board of Regent and be subjected for annual review. Moreover, this proposed committee may perform the following specific objectives:
    - To promote awareness to Teacher Education students or the student body as a whole on the University's environmental impact, activities, performances and good practices.
    - To encourage the inclusion of environmental and sustainability issues into curriculum specifically in Environment-related courses using creative, appropriate and effective instructional strategies.

- To encourage the inclusion of environmental practices and sustainability issues in research and research practices.
- To organize suitable environmental programs and projects for students and promote active engagement and maximum participation through student organization activities, open forums and consultations.
- To encourage students to give feedback and suggestion in order to ensure environmental good practices.
- To communicate to students the University's environmental policies, objectives and performances via annual Orientation Program.
- To conduct regular review of environmental management procedures and activities to ensure compliance, appropriateness, adequacy and effectiveness.
- To promote knowledge transfer vis à vis environmental policies, issues, concerns, programs and projects via curriculum, Student/Academic/ RDET and/or GAD Manual, bulletin/bill board, LED streamer, website and/or fliers.

2. It would be interesting to study the use of Thompson-Barton Value Domain Tool and the self-made questionnaire in samples of other populations.
3. Future research ought to focus on other rational considerations and/or consider the role of contextual factors and other behavioral determinants such as social, political and cultural character and identity.
4. It could be especially worthwhile to further examine the implications of having environmental values engage to ecocentrism and anthropocentrism.
5. Construct validity should be further examined by exploring whether ecocentric and anthropocentric values of Thompson-Barton Scale contribute uniquely to environmental behavior of the CSU students.
6. Conduct more research to study the relationship between social demographic characteristics (such as age, level of education, ethnicity, college affiliation and religion) and environmental values, and study other factors that may influence the environmental behavior.

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