

Knowledge of Educators and Attitudes toward Ecological Justice

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Abstract

Eco-justice is now becoming a sine qua non in almost all aspects of human and social life. Eco-justice-oriented education needs to be disseminated to the community. Students can be eco-justice-oriented citizens if their teachers are knowledgeable and are advocating eco-justice themselves. It is for this reason that this study was conducted among public school teachers to determine the differences between knowledge and practices on eco-justice among educators. Questionnaires were administered, and interviews and observations were conducted. Quantitative data were analyzed using SPSS. The results indicated a “high” level of knowledge and a “positive” level of attitude toward eco-justice. There was no significant differences recorded across sex, educational qualifications, but a significant difference was found in the level taught subgroups as regard to knowledge about eco-justice. No significant differences were also observed in sex, educational qualifications, and level taught subgroups as regard to attitudes toward eco-justice. There is a significant relationship between knowledge about and attitudes towards eco-justice.

Keywords: attitudes, ecological justice, knowledge

Guiang (2004) noted that the country has undergone a catastrophic degradation of its natural resources, and thus, the environment is now in a critical state. Deterioration of the environment occurs when the resources are depleted due to human activities. Unless lifestyle patterns are changed, levels of environmental damage and human sufferings would shoot up. Environmental problems mostly affect the poor because degradation of the resources translates into a decrease in production or income, food shortage, and labor opportunities. In the quest for food security, the rural poor sometimes have little choice but to overuse the limited resources available to them. This environment is facing the risk of being ecologically fit for living. Hence, the concept of ecological justice is put forward.

The United States Environmental Protection Agency (2007) defined ecological justice (eco-justice) as the fair treatment and meaningful involvement of all people regardless of the race, color, sex, national origin,

or income with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. Eco-justice should also be served to places of work, play, worship, and in schools, including their physical and natural components. It is also the fair distribution of environmental good and bad (Schlosberg, 2007). It is not only justice for humans (environmental justice) but also for other living and non – living beings in the ecological system as well (Low & Gleeson, 1998).

Awareness and conservation of the environment must be increased. People should realize that the fragile environment on which they depend on for their survival is being neglected or over-exploited, and it is now necessary to rehabilitate and manage its sustainably. They should also bear in mind that the environment belongs to them, and they must take responsibility for that environment. Promising initiatives can be undertaken through eco-justice-oriented education.

Tippins, Mueller, Eijck, and Adams (2010) believed that eco-justice played a major part in what science educators do yet it remained in environmental and science education literature. The topic is new and unpopular among the people in the community.

Eco-justice – oriented education needs to be disseminated to the community through students. Teacher education needs to promote reforms that can contribute to a more ecologically sustainable future.

Teachers and the academe, in general, have a responsibility to implement necessary standards. These can be successful when teachers understand what standards mean in terms of curriculum and pedagogy and when they engage their students in activities that promote learning. Teachers should educate the next generation to become environmental and eco-justice-oriented citizens. They should be prepared to assume the responsibility of educating citizens capable of strengthening local democratic and sustainable communities. They should integrate eco-justice in their daily activities by exposing their students to long– term ecological studies so that they can collect and analyze their data that can be used to document changes which affect their choices and attitudes.

This study was anchored on different theories: the theory of Ecological Justice by Brian Baxter; the Constructivist Theory of Learning of Vygotsky; and on Fishbein’s Behavior Intension Theory.

The researcher undertook this study among educators in public schools in Panay and Guimaras during the school year 2012 - 2013 to determine the relationship between knowledge about and attitudes toward eco-justice, and the influence of their levels of knowledge about and attitudes towards eco-justice of educators.

The following research questions were formulated:

1. What is the level of knowledge about and attitude towards eco-justice among educators as a whole and when classified according to: sex, educational qualifications, and level taught?
2. Is there a significant relationship between knowledge about and attitude towards eco-justice among educators?
3. What is the extent of destruction and recovery in the places that experienced or still experiencing the environmental degradation?
4. What are the recovery and coping measures that the respondents used to address the problems?

Methodology

Research Design

This study used the descriptive-correlational method of research. This method of research ensured the maximum insight and understanding of teachers' knowledge about and attitudes towards ecological justice. The design of this study consisted of two phases: The first phase was the collection and analysis of descriptive-correlational data. The second phase was the collection and analysis of additional data from interviews of teacher respondents and ocular observations of the sites by the researcher to validate the data gathered in the first phase.

Respondents

In this study, 65 teachers in the primary, secondary, and tertiary levels in predetermined public schools in Aklan, Capiz, Antique, Iloilo, and Guimaras where environmental degradations occurred were taken as the respondents.

They were categorized according to their sex, educational qualifications, and level taught. There were 16 teachers from the elementary, 21 teachers from the secondary and 28 teacher respondents from tertiary schools. There were 13 respondents from Aklan, 12 from Capiz, 15 from Iloilo, 15 from Antique, and 10 from Guimaras.

Sampling Method

Purposive sampling was used to determine the study sites. The researcher inquired from the Regional Disaster Coordinating Council (RDCC) Office about the top environmental problems that posed the highest risks to each province. The regional office of the Department of Environment Natural Resources (DENR) was also tapped for the needed information. The public teachers in these areas in each province signified their participation in the research through the informed consent form. Hence, the selection of participants, just like in the setting, was based on purposive sampling.

The Instrument

Three research instruments were utilized for triangulation in the study, namely: the survey questionnaire (descriptive-correlational), the observation sheet, and interview transcript. The triangulation design provided in-depth understanding and substance to secure the validity of the study. The survey questionnaire which was researcher – made, was used in gathering data in determining the levels of knowledge about and practices on eco-justice. Interviews were recorded and transcribed provided.

Validity and Reliability

The triangulation of the data gathering was utilized to ensure the validity of the study. In this study, an inter-item or factor analysis measured the correctness and reasonableness of the data. A table of specifications was presented to the validators for scrutiny and comments. Validators were composed of a professor in research and 3 professors in Ecology.

The value of Cronback's Coefficient alpha was used to determine the reliability of the instrument. For the knowledge about eco-justice, the value is 0.82, and for practices on eco-justice, the value is 0.94. Results showed that there was a high-reliability coefficient value on both tests.

Data Collection Procedure

The necessary requests/permits to conduct the study were prepared and secured. The researcher formally met the different school heads and individual educators and informed them of the intention, purpose, and significance of the study. The conduct of the research was scheduled. Survey questionnaires were given to the teacher-respondents during their free time and were gathered the next day. The collected data were immediately tallied, computer-processed, and interpreted. In-depth interviews were conducted after the respondents had submitted their questionnaires. These interviews were tape recorded. The respondents were given the opportunity to clarify their answers and tell their stories and experiences. Observations of the place were done to determine the changes that had taken place from the time the environmental degradation happened to the present. The extent of the recovery (if any) and their coping measures were also observed. Pictures were taken to support the interviews and observations.

Data Analysis Procedure

The quantitative data gathered were subjected to a particular computer analysis using the Statistical Package for the Social Sciences (SPSS) software. The most common content or themes were identified through interviews.

Results and Discussions

Table 1 shows that educators in Panay and Guimaras had a “high” level of knowledge ($M = 39.74$; $SD = 4.58$) about eco-justice when taken as an entire group. The obtained standard deviation showed wide dispersion of the mean scores. This further indicated that educators were heterogeneous with regards to their level of knowledge about eco-justice. Sex of the educators did not make a difference with one another in terms of their level of knowledge about eco-justice. Both the males and females have “high” level of knowledge ($M = 38.62$, $SD = 4.23$); ($M = 40.02$, $SD = 4.66$), respectively. The level of knowledge showed no variation in terms of educational qualifications of the educators. Those who had finished baccalaureate degrees had “high” level of knowledge ($M = 39.23$, $SD = 4.25$). Those who finished masters degrees also have “high” level of knowledge ($M = 39.67$, $SD = 4.75$). A “high” level of knowledge was also possessed by those educators who had doctoral degrees ($M = 41.87$, $SD = 5.19$). The level of knowledge when classified according to the level taught by the educators had similar results with that of sex and educational qualifications. Elementary teachers ($M = 37.20$, $SD = 5.29$),

secondary teachers ($M = 39.76$, $SD = 4.31$), and tertiary teachers ($M = 41.03$, $SD = 3.93$) have “high” level of knowledge about eco-justice.

Table 1

Level of Knowledge and Attitudes on Ecojustice of Educators

Knowledge		Attitudes	
Category	Description	Category	Description
Whole Group	High Knowledge	Whole Group	Positive Attitude
Sex		Sex	
Female	High Knowledge	Female	Positive Attitude
Male	High Knowledge	Male	Fairly Positive Attitude
Educational Qualification		Educational Qualification	
Baccalaureate	High Knowledge	Baccalaureate	Positive Attitude
Master's	High Knowledge	Master's	Positive Attitude
Doctorate	High Knowledge	Doctorate	Fairly Positive Attitude
Level Taught		Level Taught	
Elementary	High Knowledge	Elementary	Fairly Positive Attitude
Secondary	High Knowledge	Secondary	Positive Attitude
Tertiary	High Knowledge	Tertiary	Fairly Positive Attitude

The “high” level of knowledge that the teacher respondents possessed showed that they had adequate knowledge about eco-justice. They were aware that their day-to-day existence had a severe impact on the biosphere which they shared with all other organisms. The results signifying a healthy knowledge about eco-justice was similar to the findings of Unlas (2000) that the high grades of students were due to the rigorous attention to their studies. Thus they have retained most of the environmental knowledge they had learned or gained. The “high” environmental knowledge of educators may also be due to the vast and rich experiences of the ecological processes taking place in their

areas. Their attendance to seminars, conferences, workshops, or educational field trips may have also contributed to their literacy on ecological topics.

Prior to the identification of the coping/recovery measures, teacher respondents were asked regarding their idea on eco-justice. Most of the respondents said that it was only during this survey that they have encountered the term eco-justice. Some said that it was about the awareness, preservation, conservation, and proper utilization of natural resources for the benefit of man. The common idea the respondents had is a misconception. They missed the idea that the environment should be preserved, conserved, and properly utilized so that the other environmental non-human components can be sustained. Respondents have a “high” level of knowledge about eco-justice for humans, but they missed the non-human component.

Knowledge is imperative when it comes to ecological concepts. People may not be aware that their daily chores are interrelated with these concepts. Respondent-teachers who were considered mentors were expected to be knowledgeable when it comes to ecological concepts. They were expected to be models to their students as well as to the community.

When taken as an entire group, or classified according to certain categories, the educators in this study had “positive” attitudes towards eco-justice as reflected by the obtained mean ($M = 112.77$). The computed standard deviation ($SD=7.91$) showed a narrow dispersion of the means indicating that the educators were homogeneous in their attitudes towards eco-justice. When they were classified according to sex, female educators have “positive” level of attitude towards eco-justice ($M = 113.42$, $SD = 8.20$) while the male educators have “fairly positive” attitude towards eco-justice ($M=110.15$, $SD = 6.16$). When the educators were classified according to their educational qualifications, the educators who were baccalaureate degree holders and masters degree holders had “positive” attitude towards eco-justice ($M = 113.42$, $SD = 7.89$; $M = 112.89$, $SD = 7.89$, respectively) while those with doctorate degrees had “fairly positive” attitude towards eco-justice ($M=111.50$, $SD = 9.61$). Educators who were teaching in elementary ($M=111.87$, $SD=8.37$) and tertiary ($M = 111.55$, $SD=7.18$) levels had “fairly positive” attitude and those who were teaching in the secondary level had “positive” attitude towards eco-justice.

The respondents’ “positive” attitude towards eco-justice indicated that they assumed an optimistic attitude. They believed that protecting the

environment could provide in return, abundant resources to make life easy and enjoyable. In addition, their involvement to the environment-related activities have contributed significantly to their “positive” attitude (Atchia & Tropp, 1995). Their “positive” attitudes were shaped by their interactions with family, peers, and colleagues in the institutions. Their experiences and values also influenced their attitudes.

Among the males, those who had doctorate degrees, and the elementary and tertiary teachers were still in the process of internalizing the environmental issues, their impact and the importance of protecting the environment. These could be the reasons why they reflected a “fairly” positive attitude. These respondents had a fairly optimistic attitude, and this may be attributed to their limited involvement in environment-related activities.

Females showed a “positive” level of attitude towards eco-justice while males showed a “fairly positive” level of attitude towards eco-justice. The result can be attributed to the fact that women are ecocentric (concerned for nature). They show concern to the biosphere and to living things than males (Zelezny, Chua, & Aldrich, 2000). Women are more known for their being nurturing and caring, sharing expertise with others and with strong personal responsibility for improving the environment. Socialization theories support the expectation of gendered differences in disparities towards eco-justice. These theories concurred that females are predisposed towards caregiver role, making women more compassionate, nurturing, and more protective than men (Beutel, 1995).

The findings, for those with doctoral degrees showed a “fairly positive” attitude. It appeared to contradict what was expected from people who have attained higher educational qualifications. These results also echo the study of Horton and Chester (1981) that persons with high educational qualification are inclined to participate in community activities since they readily appreciate the value of involvement. Furthermore, the study also presented that a more educated person tends to use more current knowledge than those who tend to stick to superstitious beliefs and practices.

When the respondents were grouped according to the level of students that they teach, teachers in the secondary level showed “positive” level of attitude toward eco-justice. Teachers in the elementary and tertiary levels showed “fairly positive” level of attitude towards eco-justice. This result may be explained by the fact that teachers in the elementary level were

generalists and were not science majors and were passive when dealing with environmental concerns. The study revealed that many elementary teachers, although competent and enthusiastic in most of the subjects they taught, simply do not enjoy science and do not feel comfortable teaching it. Those teachers in the tertiary level were very focused in the teaching of their specialization subjects and sometimes did not mind what was happening around them. As long as they do their task effectively, that is teaching eco-justice, it is unnecessary to show their personal opinions and feelings.

The results show that most of the teacher respondents had a “positive” attitude is not surprising. The respondents were matured adults, are baccalaureate degree holders, and qualified to teach in any level.

The relationship between knowledge about and attitudes towards eco-justice as assessed by Pearson’s r was 0.255 ($p = 0.04 < 0.05$). This result could be interpreted as low correlation, definite, but small relationship existed between them (Subong, 2005). It confirmed the hypothesis based on the theory that planned behavior is a functional approach to attitudes. The relationship was both positive and significant. However, it was not strong. It is consistent with the findings of Kuhlmeier et al. (1999) who studied environmental literacy among Dutch students and found a positive and weak correlation between knowledge and attitude. Franzoi (1996) had similar findings that attitudes serve as a knowledge function by helping people attain a meaningful, stable, and organized view of the world. Hence, it is expected that knowledge positively correlates with attitudes.

Table 2

Relationships in the Educators’ Levels of Knowledge and Attitudes on Ecojustice

	Knowledge	Attitudes
Knowledge	-	0.255*
Attitudes		-

Note: * $p < .05$

The extensive recovery of the study sites from the impacts of the environmental problems was due to the enhanced awareness of the nature of the problems by the respondents. They were able to prepare for the consequences of the disturbance in the environment. The knowledge learned

from the integration of eco-justice in the various subjects they taught must have equipped the individuals with necessary emergency, coping, and recovery measures.

Table 3

Environmental Problems (most prevalent)

Problem	Recovery Measures	Coping Measures
1. Alarming rate of deforestation	- Consistent Mass Education	- Adaptation to the Problem
	- Planting Trees and Mangroves	- Having additional sources of Income
2. Widespread Pollution	- Waste segregation	

The respondents appeared to manifest an optimistic attitude towards eco-justice. It may be due to their being receptive and supportive of the environmental reforms and policies of the government.

Those respondents with higher educational qualifications appeared to have better knowledge because formal education makes one acquire more information that can be useful in meeting or coping with life's stresses.

The curriculum developers, schools, and policy makers, all work together to create environments that advocate the study of eco-justice and support teacher and student growth in ecological literacy and the study of eco-justice. Curriculum materials and resources empowered teachers to educate and the students to learn. Professional development provided learning opportunities to enhance pedagogical knowledge and higher education institutes supporting teacher preparation in eco-justice.

Making eco-justice literacy a reality for all requires a strong system of support for teachers from professional development, curriculum developers, school districts, and teacher training institutes.

The study of eco-justice is not yet a part of any curriculum. Ecological reforms are required to be studied in all levels in order to promote eco-justice literacy. Teachers must be adequately prepared to teach eco-justice concepts and content.

Conclusions

Educators in Panay and Guimaras possessed a “high” level of knowledge about eco-justice regardless of their sex, educational qualifications, and level of students taught. This “high” level of knowledge was due to vast and rich experiences.

The optimistic attitude of the teacher respondents led them to believe that protecting the environment provided them abundant resources to make their lives sustainable, comfortable, and enjoyable regardless of their sex, educational qualifications, and level taught. This study confirmed the study of Atchia and Tropp (1995) that the interactions with family, peers, and colleagues in the institution shaped the “positive” attitudes.

The “high” level of knowledge about eco-justice of teacher respondents had an influence on how they treated their environment and had shaped their attitudes. Their attitudes towards eco-justice made them practice what is environmentally appropriate. One’s attitude is an extension of one’s perceptions in life. Appreciating the role of anything in the environment will be a deterrent against any drastic actions.

The degree of degradation of the environment in Panay and Guimaras is alarming, but the people had undertaken extensive restoration. Short and long-term measures were adopted to address the people’s coping mechanism and environmental recovery.

Recommendations

Curriculum planners should integrate ecological issues and practices in all educational levels. The integration should be a vital part of the curriculum.

Heads of academic institutions should encourage and support the teachers in their attendance to seminars, workshops, conferences, and activities that are related to ecological issues and concerns.

Science teachers need to be updated with the knowledge about eco-justice so that their attitudes may be improved, and may lead to the development of desirable practices.

The local government unit should conduct group discussions about

the nature of eco-justice.

Experts in the field of eco-justice must be invited to share the latest information about eco-justice.

Future researchers should also conduct similar studies using other variables and to be conducted in other areas in order to generate more data on the problem. Eco-justice literacy should be imperative to all.

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