ENVIRONMENTAL WORLDVIEW AMONG THE TEACHER TRAINEES OF UNIVERSITY OF AEGEAN, RHODES, GREECE AND DIETS, MEGHALAYA, INDIA

Bhutia Y.*1 and Liarakou G.2

1. Department of Education, North Eastern Hill University, Shillong (INDIA)
2. Department of Primary Education University of the Aegean, Rhodes (GREECE)

Received November 9, 2016 Accepted March 1, 2017

ABSTRACT

The environmental worldview refers to basic view which individual has developed, through which he understands environment and perceive the relationship between human and the world around. The purpose of the study is to examine Environmental worldview among teacher trainees of Department of Primary Education, University of the Aegean, Rhodes, Greece and District Institute of Education, Meghalaya, India. They are teacher trainees to be teachers at elementary level of school education. The New Ecological Paradigm (NEP) Scale developed by Dunlap et al. 2000 was used to measure the degree to which respondents view the world ecologically. The sample included teacher trainees of 198 from DIET, Meghalaya and 103 from Department of Primary Education, University of Aegean, Greece. The study found that teacher trainees have ecological worldview. Gender does not effect the environmental worldview among teachers trainees of both the countries. There is no significant relationship between level of religiousness and the worldview of teacher trainees of both the nations. The teacher trainees of Greece and India mentioned that they are almost ready to be an teacher for environmental education but they expressed hopefulness of improving with further input through short term course, seminars and workshops.

Key Words : Environmental worldview, Teacher trainees, Eco-centric, Anthropocentric

INTRODUCTION

A worldview is a theory of the world used for living in the world. A world view is a mental model of reality, it is a framework of ideas and attitudes about the world, ourselves, and life, a comprehensive system of beliefs. It is a hypothesis we have formed over the years through our experiences, interaction with others and things through various medias, peers, education at home, school and colleges.1-8 It is a view which we have formed about ourselves, others, things and the environment and it can be seen in our ideas, attitudes and behaviour. The worldview can be of any area such as environmental worldview.9,10 So this view is the basic idea through which individual understands the natural world and see relationship between different beings of the natural world. It consists of three components - how people think the world works, what they think their role in the world should be, and what they believe is right and wrong environmental behavior.11 Environmental worldviews, or environmental beliefs, refer to an underlying belief or value system through which an individual understands the natural world and the ways in which humans are related to or separate from it.12 The worldview can also be explained on the basis of values it uphold or carry. The environmental philosophers normally divide values into two types (a) Instrumental or utilitarian values life forms because of their usefulness to humankind or to the biosphere (b) Intrinsic or inherent values a form of life just because it exists, regardless of whether it has any usefulness to us . The environmental worldview can also be classified based on the locus of control such as anthropocentric (human-centered), biocentric (life-centered), or ecocentric (earth-centered). Anthropocentric worldviews is based on the
view that humans are the central or most important element of existence as opposed to God or nature. This view considers human as masters of nature. They view that humans have intrinsic value because they exist. However nature has instrumental value which is determined only by its usefulness to humans. The biocentric worldview emphasis that all organisms on earth are valuable and all species have intrinsic value and all forms of life have an inherent right to exist. They consider that the protection of all species is more important for the life to continue. The ecocentric worldview demands that nature as a whole is valuable above any of its individual parts. It emphasizes the importance of protecting the ecosystems in which many species live, by protecting ecosystem and premature extinction of species is prevented. These environmental worldview develop with exposure to environmental knowledge through cultural practices and also formal education in schools and colleges.

Education is seen as the great source of knowledge in both the Greek and Indian culture. Today the tools of citizenship or rather the ability to understand and master the important questions of the modern world, are primarily provided by education. Therefore if we want to bring any change in society in relation to knowledge, attitude, skills and behaviour towards environment, it should be environmental education provided through all formal and non formal medium. Education can play an important role in motivating and encouraging towards protection and conservation of environment. Tbilisi Report in 1977 stated that “the role of education in the face of environmental problems and opportunities is therefore a crucial one”. Education has impact on the environmental world view, attitudes and belief. United Nations in 1972 world conference recommended that training and retraining of teachers on environmental issues are important (UN, 1972, recommendations 96). It is essential that teachers possess the ability to teach sound environmental values to students from diverse backgrounds as stated in guidelines given by UNESCO in 1985. UNESCO in 1985 in a guide on environmental education stated that environmental educators are chief among other agents who seek to accomplish the difficult task of strengthening, reinforcing or human-made environments, it is virtually impossible to avoid confronting the personal values of learners that form the basis of their actions. This fact has caused environmental values education to be of major importance in the general environmental education curriculum. Teachers play a key role in environmental literacy of future generations. Brundtland Report, also reported that a critical point of intervention is during teacher training. The attitudes of teachers will be keys in increasing understanding of the environment and its links with development. Their environmental world view is very important. The future quality and stability of life on our planet depends on youngsters developing the worldview necessary for making informed and sensitive decisions about the environment and becoming active participant in the creation of sustainable world. Therefore this paper focused on prospective teachers who are undergoing the training course in the university of Aegean, Rhodes, Greece and District Institute of Education and Training (DIET), Meghalaya, India.

Gender: It is important to see the scientific research from gender perspective to find out how gender has been influencing the environmental worldview. Some of the researches show that males were found to be slightly more likely than females to express environmental concern. MacDonal and Hara, Tsachalidis, Tampakis, Tsantopoulos, Zografo, and Arabatzi, Xiao and Hong. The female are more concerned about the environment as found by Ewert and Baker, Nooney, Woodrum, Hobas, and Ciford, Tikka, Kuitunen and Tynys, Noblet, Lindenfeld, and Anderson. No gender difference has been found by Smith, Xiao and McCright. The world's religions could help to provide direction and motivation in forming new values that would stress individual and joint responsibility towards the environment and towards nurturing harmony between humanity and environment (UNESCO, 1987).
People of Greece follow Orthodox Christianity since time immemorial. The religion of Greek people is an important aspect of the Greek culture. The Greek population in mainland Greece and the Greek islands is Christian Orthodox 98%. Census of India also shows that Christianity has emerged as the major religion in three North-Eastern states namely, Nagaland, Mizoram and Meghalaya. In Meghalaya, tribal religion and culture has been largely replaced by Christianity. It is anthropocentric religion where the primary importance in given to man right during the creation of nature by God. This concept was criticised by many environmentalist. Lyn White in his paper ‘the historical roots of our ecological crisis’ wrote that “Christianity is the most anthropocentric religion the world has seen. Christianity, not only established a dualism of man and nature but also insisted that it is God’s will that man exploit nature for his proper ends”. But later another concept of Christianity was put forward by Black put forward the concept of stewardship towards nature. He details that man is only looking after the world in presence of some extra terrestrial presence such as God or Gods.

The ethnic people of Meghalaya has traditional religion, Khasi has NiamKhasi, Jaintia people have NiamtreandGaro people have Songsarek. The Indigenous traditions have an intimate knowledge of bioregions, a love of the land, and a deep and abiding respect and reverence for the natural world Grim 1998 as cited by Branton. The ancient Khasi-Pnar society of Meghalaya hypothesized that Earth which brings forth life and sustains it was to be considered as divine Mother. They believed that Sun, Moon, Fire, Water- nourish all forms of life and were to be treated with respect to Meghalaya Times. In ancient Greece, trees associated with a deity were considered sacred or haunted and were protected with religious respect. Taboos prevent private exploitation, while controlled exploitation for the benefit of the entire community or cultural modification for ritual use was occasionally allowed.

Some of the research study found that there were no differences found between those with no affiliation and religious moderates or fundamentalists in their environmental worldview stated by Nooney, Woodrum, Hobas, and Clifford. The students believe that man’s main role in the environment is to be a good steward who will take charge (60.3 percent) and protect (27.4 percent) the earth’s important resources. However, the students described and explained nature predominantly from a scientific perspective found that although the students were generally pro-ecological, and the study results show that majority students hold pro-environmental views. Anthropocentric views are slightly less while anti-anthro beliefs are quite high.

AIMS AND OBJECTIVES

The objective is to study the environmental worldview of teacher trainees of department of primary education, university of the Aegean, Greece and DIETs, Meghalaya, India. The purpose of the study are put in the form of following research questions:

1. What is the environmental worldview of teacher trainees of Rhodes, Greece and Meghalaya, India?
   a. Does gender relate to teacher trainees’ environmental worldview?
   (a) What is the environmental worldview of teacher trainees of Rhodes, Greece and Meghalaya, India?
   (b) Has religion made impact on the teacher trainees’ environmental worldview?
2. Do the teacher trainees hold traditional belief on protection of nature?
3. How do they view themselves as the teachers to teach environmental values?

Hypotheses:

a. \( H_0 \) : There is no significant difference in the environmental worldview between male and female of teacher trainees of Rhodes, Greece and Meghalaya, India.
b. \( H_0 \) : There is no significant impact of religion in the environmental worldview between teacher trainees of Rhodes, Greece and Meghalaya, India.

METHODOLOGY

Population and Sample

The population of the study includes the teacher trainees of the department of primary education of university of the Aegean, Rhodes, Greece and DIETs, Meghalaya. The total population in the final year in the department of primary education, university of the Aegean is 150 and in all seven DIETS of Meghalaya, India were 398.
The sample of the study includes the 198 teacher trainees of DIETs, Meghalaya and 103 from department of primarieducation in university of the Aegean, Greece. Random sampling technique was used to collect sample from the population.

**Research method**
The study adopted survey method as have been adopted by Ewert and Baker in 2001, Nooney, Woodrum, Hobas, and Clifford in 2003, Ruff and Oslon in 2009, Taskin, 2009, Liu and Lin in 2013, Noblet, Lindenfeld and Anderson, 2013, Erdogan 2013. It is descriptive and explanatory in nature. This method suits this as the teacher trainees of University of the Aegean, Rhodes and DIETs, Meghalaya as they can read and can rate their opinion themselves. Survey research is considered method of systematic data collection, though the survey has a long historical tradition. As far back as the time of the ancient Egyptians, population counts and surveys of taxes etc.

**Instrumentation**
The study used New Ecological Paradigm Scale developed by Dunlap et al. 2000. According to Dunlap, this scale measures ‘the degree to which respondents view the world ecologically’. Lower scores are indicative of a more ecological worldview, whereas higher scores are indicative of a more anthropocentric worldview. The NEP scale consists of 15 five-point Likert-type items, ranging from Strongly Disagree to Strongly Agree. Seven items are reverse-scored (indicating anthropocentrism). The scores can range from 15 to 75. Noblet, Lindenfeld, and Anderson, 2013 cited that odd numbered items are reverse coded, the scores for all items are summed, and then a mean score is calculated for each individual. However construction of metric remains disparate in the literature. This scale was selected as its numerical results can be used to support sample selection from a larger population (in order to cover a widest range of worldview profile). NEP scale has been used in different countries to measure environmental world view. Mentioned that despite the fact that differing versions of the NEP Scales were used in 36 different nations, the internal consistency was reasonably strong, as the alpha averaged .71 for all 140 samples used in the 68 studies. A growing number of researchers are using the NEP Scale in China like Chung and Poon, 2001 and Lo et. al. In 2006 as well as it is used in Asian nations. Hawcroft and Milfont conducted a meta-analysis of New Environmental Paradigm (NEP) scale to provide a quantitative review of 30 years of research using the NEP Scale, including 69 studies, 139 samples, and 58,279 participants. They reported that researchers should use the 15 item Revised NEP scale and do a better job of reporting information needed for making comparisons across studies to enhance the possibility of developing a cumulative body of evidence on environmental attitudes around the world. The New Ecological Paradigm (NEP), a measure of general pro-environmental and ecological worldview, has been used as the primary metric in many studies to capture an individual’s existing environmental proclivities. Erdogan 2013 mentioned NEP scale is most widely used scale to measure environmental orientations. Therefore the investigators decided to use NEP scale to find correlation between gender, education level and religion to add to information in the world of environment and education.

**RESULTS AND DISCUSSION**
The data on the environmental worldview has been calculated using frequency as well as mean and standard deviation.

<table>
<thead>
<tr>
<th>Scale for environmental worldview</th>
<th>Teacher Trainees of Greece</th>
<th>Teacher Trainees of India</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Percent</td>
<td>F</td>
<td>Percent</td>
</tr>
<tr>
<td>63-75</td>
<td>-</td>
<td>-</td>
<td>High</td>
</tr>
<tr>
<td>51-62</td>
<td>-</td>
<td>10</td>
<td>5.05</td>
</tr>
<tr>
<td>39-50</td>
<td>44</td>
<td>100</td>
<td>50.51</td>
</tr>
<tr>
<td>27-38</td>
<td>57</td>
<td>87</td>
<td>43.94</td>
</tr>
<tr>
<td>15-26</td>
<td>2</td>
<td>1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

(Lower the score- ecological worldview, higher the score- anthropocentric), f= frequency
The Table 1 shows that majority (55.4%) Greek teacher trainees have scores in environmental worldview is between 27-38, 48.7% Greek teacher trainees is between 39-50, and 1.9% have low score 15.26. In a similar pattern majority 50.51% Indian teacher trainees have scores in environmental worldview is between 39-50, 43.94% Indian teacher trainees have scores in environmental worldview which is from 27-38, only 5% have 51-62 and 0.5% Indian teacher trainees have scores 15-26. This indicate the Greek and Indian teacher trainees have more ecological worldview.

### Table 2: Mean and standard deviation of environmental worldview of Greek and Indian teacher trainees

<table>
<thead>
<tr>
<th>Trainees</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greek teacher</td>
<td>103</td>
<td>26</td>
<td>50</td>
<td>37.19</td>
<td>4.75</td>
</tr>
<tr>
<td>Indian teacher</td>
<td>198</td>
<td>23</td>
<td>57</td>
<td>39.69</td>
<td>6.30</td>
</tr>
</tbody>
</table>

The mean score of Greek teacher trainees on environmental worldview in 37.19(4.75) as compared to the mean score of Indian teacher trainees which is 39.69 (6.30) as shown in Table 2.

**Gender difference in environmental worldview**

In order to find out the difference between male and female teacher trainees of Greece and India in their environmental worldview a null hypothesis was formulated, H₀: There is no significant difference in the environmental worldview between male and female teacher trainees of Rhodes, Greece and Meghalaya, India. The Table 3 shows that the mean score of Greek female and male teacher trainees in environmental worldview are 38.40(4.39) and 36.90 (4.81). The mean score of Indian female and male teacher trainees in environmental worldview are 39.45 (6.91) and 40.75(6.15). In both the group female teacher trainees have lesser mean score then their male counter parts showing that female have inclinations towards ecology and its protection. Independent sample t test was conducted to compare environmental world view of male and female teacher trainees of Greece and India separately.

### Table 3: Mean, standard deviation (SD) and t value of male and female teacher trainees of Greece and India on their environmental worldview

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greek teacher</td>
<td>Male</td>
<td>20</td>
<td>38.40</td>
<td>4.39</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>83</td>
<td>36.90</td>
<td>4.81</td>
</tr>
<tr>
<td>Indian teacher</td>
<td>Male</td>
<td>37</td>
<td>40.73</td>
<td>6.91</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>161</td>
<td>39.45</td>
<td>6.15</td>
</tr>
</tbody>
</table>

P>0.05

There was no significant between male (M=38.4, SD=4.77) and female (M=36.90, SD=4.81) Greek teacher trainees, t (101) =1.27, p=0.208. There was no significant between male (M=39.45, SD=6.91) and female (M=40.75, SD=6.15) Indian teacher trainees, t (196) =1.12, p=0.265. These results suggest that gender does not effect environmental worldview among teacher trainees of both the countries.

**Environmental worldview in relation to religion**

The study considered religion is one of the important variable which may affect the collective on environment so the level of religiousness among teacher trainees of both the countries were found and their environmental worldview for which mean and standard deviation was calculated.
Table 4: Mean, standard deviation on environmental worldview of teacher trainees with different level of religiousness

<table>
<thead>
<tr>
<th>Level of Religiousness</th>
<th>Greek teacher trainees</th>
<th>Indian teacher trainees</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>High religious</td>
<td>18</td>
<td>38.28</td>
</tr>
<tr>
<td>Above Average religious</td>
<td>36</td>
<td>36.86</td>
</tr>
<tr>
<td>Average religious</td>
<td>27</td>
<td>37.67</td>
</tr>
<tr>
<td>Below Average religious</td>
<td>5</td>
<td>38.80</td>
</tr>
<tr>
<td>Low religious</td>
<td>17</td>
<td>35.53</td>
</tr>
</tbody>
</table>

It is seen from the above Table 4, that Greek teacher trainees are widely distributed in the level of religion, as seen in table, high religious (17.5%), above average (34.9%), average (26.2%), below average (4.8%) and low religious (16.5%). Similarly among Indian teacher trainees, majority consider themselves below average religious (54%), average (34.3%), low religious (6.6%), above average (3.5%) and high (1.5%). Mean score of environmental worldview of Greek teacher trainees with all the level of religiousness range between 35.53 -38.80, and mean score of Indian teacher trainees with all level of religiousness from low to high has mean score ranging from 37.43-39.82, which shows that despite having different level of religiousness among teacher trainees of both the nation, the mean score in environmental worldview is not differing much and has remained ecological worldview.

Table 5: Pearson product moment correlation between religion and environmental worldview

<table>
<thead>
<tr>
<th>Trainees</th>
<th>Subject</th>
<th>Religion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greek Teacher</td>
<td>Environmental worldview</td>
<td>0.12</td>
</tr>
<tr>
<td>Indian teacher</td>
<td>Environmental worldview</td>
<td>0.02</td>
</tr>
</tbody>
</table>

A Pearson product moment correlation was computed to assess the relationship between the religion and environmental worldview among teacher trainees of Greece and India separately. Among Greek teacher trainees there is no relationship between the two variables r=0.12, p=0.22, n=103 as shown in Table 5. Similarly, among Indian teacher trainees there is no relationship between the two variables r=0.02, p=0.74, n=198. Whether the teacher trainees are highly religious or least religious, do not have effect on the environmental worldview among teacher trainees of Greece and India.

Environmental educator

Teacher trainees of both the countries were asked how do they rate themselves and four options were provided. It was found that among the Greek teacher trainees 13.6% consider themselves as a very good teacher and 44.7% consider they are good teacher of environmental education, they think they are ready to provide knowledge, and inculcate attitude, skills and values related to environmental education. However 40.8% consider that they can improve and be expert in environmental education with further input. None of them thinks that they are unprepared. Among the Indian teacher trainees, 7.6% consider themselves as a very good teacher and 43.9% consider they are good teacher of environmental education, they think they are ready to provide knowledge, and inculcate attitude, skills and values related to environmental education. However 41.4% mentioned that they can improve with further input. Still 6.6% think that they are unprepared to teach the subject of environmental education.
Among the Greek teacher trainees who want to improve, 53.2% would like to attend a short course or workshop and 46.8% would like to attend a separate course on environmental education. Among the Indian teacher trainees who want to improve with further input mentioned that 47.6% would like to attend some workshop on environment and 52.4% would like to attend separate course on environmental education.

**Limitations**

We do acknowledge the limitations of this study. First the teacher trainees of Department of Primary Education, University of the Aegean was in university and teacher trainees of DIETs, Meghalaya were in institutions in each district, though both were being trained to be teachers of primary or elementary schools. The exposure in university and in small institutes will certainly effect their outlook to environment and other areas of life.

**Implications**

Our results indicate despite the teacher trainees of both the nation have ecological worldview, but they have expressed the desire to learn more about environment through workshops and even a course on environmental education. Our result results suggest majority of Greek teacher trainees have expressed a need for workshop so we encourage organization of some workshop on environmental education to these prospective teachers so that they become more equipped to handle the subject. Our results also suggest that majority of Indian teacher trainees have stated the need of a course on environmental education so this finding will help District Educational Research and Training (DERT) which looks after the training of teachers in all DIETs of Meghalaya, India to formulate a course or training programme on environmental education. They also feel less confident as environmental education teacher so there is a need of more training on knowledge, skills, values and attitude towards environment so that they become better teacher to manage the subject on environmental education in schools.

**CONCLUSION**

The study found out that both Greek and Indian teacher trainees have more ecological environmental worldview. These teacher trainees of both the countries share a collective view that nature is important part of the life and they feel the need to protect the environment in which many living organisms live an prevent extinction of any species. They do not agree with view that the humans beings are masters of nature and they can use natural resources for the benefit of human being.

The study found that gender do not impact the environmental worldview of teacher trainees of both the countries. Similar findings were made by (Smith E. L., 2011), (Xiao and McCright, 2012) that there were no differences in NEP scores by gender. (Noblet, Lindenfeld and Anderson, 2013). The findings do not corroborate with study where males were found to be slightly more likely than females to express environmental concern (MacDonal and Hara, 1994). (Tsachalidis, Tampakis, Tsantopoulos, Zografouand Arabatzi, 2006), (Xiao and Hong, 2012). The female are more concerned about the environment as found by (Ewert and Baker, 2001) (Nooney, Woodrum, Hobas, and Cifford, 2003), (Taskin, 2009), (Tikka, Kuitunen, and Tynys, 2010), (Noblet, Lindenfeld, and Anderson, 2013). (Erdoğan, 2013).

The study found that Greek teacher trainees are more religious whereas the Indian teacher trainees of Meghalaya are lesser religious but both have ecological world view indicates that they give importance environment and see it as wholistically. There is no significant difference between different level of religiousness and environmental worldview. Similarly (Nooney, Woodrum, Hobas, and Cifford, 2003) also found that there was no differences found between those with no affiliation and religious moderates or fundamentalists in their environmental worldview. The present study also found that there is no relationship between religion and environmental worldview.

`More of Indian teacher trainees confirmed that family, school, college has been a source of information on environment and its related issues as opposed to Greek teacher trainees. This indicate that for Indian teacher trainees idea of environment is influenced and has received knowledge, skills, and attitudes by observing elders in the family, from the teaching of schools and colleges.`
The study also found that internet has not been major source of information related to environment, it’s issues and its protection and conservation. Despite more internet are available but it hasn’t categorically made impact on the view of environment of the young prospective teachers of both the countries.

The study found that more of Greek teacher trainees consider themselves as good and ready to teach environmental education in schools as compared to Indian teacher trainees. It reflects the self confidence of Greek teacher trainees. Majority (53.25%) Greek teacher trainees would like to attend a short course or workshop and 46.8% would like to attend a separate course on environmental education. Among the Indian teacher trainees mentioned that majority (52.4%) would like to attend separate course on environmental education and 47.6% would like to attend some workshop on environmental education

ACKNOWLEDGEMENT

The authors would like to gratefully acknowledge funding support by State Scholarship Foundation (IKY), Greece for granting post doctoral scholarship to Yodida Bhutia, North Eastern Hill University (NEHU), Shillong, India. She worked with Prof. G. Liarakou, University of the Aegean, Rhodes, Greece. Authors also thank to all teacher trainees who participated in this research.

REFERENCES

15. Ruff C., and Oslon, M., The attitudes of interior design students towards sustaina-
625