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# Graduate Students' Perspectives On The Human-Environment Relationship

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## ABSTRACT

The purpose of the present study is to determine graduate students' views on the relationship between human and the environment. TUBITAK, one of the biggest national scientific research organizations in Turkey, ran a Summer Environmental Education Program (SEEP) in Trabzon in 2004 for graduate students. 10 graduate students (six females and four males), who were from a different department and a different university, participated the present study voluntarily. The data gathered through the interview schedule were analyzed by using qualitative research procedures. The data indicated that almost all of the participants agreed that human beings were not adequately aware of their environment and have been using environmental resources by only considering their own needs. Fortunately, they have recently started to become aware of the environmental issues and take responsible behavior for sustaining the environment since they have realized the negative effects of the ruined environment on themselves.

**Keywords:** Human and Environment, Responsible Behavior, Awareness

## INTRODUCTION

Human beings both live within and depend on the environment for their survival. "Environment" mainly consists of two main parts; namely natural- and artificial environment (Ertürk, 1998). The human mind and technology have helped humans utilize their natural environment to convert it into a more intensive artificial environment. Understandably, development and changes in technology result in changes in the natural and artificial environment(s). The natural environment can be said to have its own special balance. Nevertheless, society's intensive activities have ruined this balance, resulting in environmental problems that we have faced for a long time. Besides these activities, Keating (1993, as cited in Palmer, 1998, p.36-55) articulates that human beings have been recently confronting many environmental problems because of global population explosion, growing demand for food, tropical deforestation, and extinction of biological resources (genes, species, populations and ecosystems). In addition, human have impacted the land causing serious degradations, increasing poverty and starvation,

growing water demand, and declining water quality, growing energy demand, unsustainable use of resources and unsustainable development. The environmental problems mentioned above pose a threat to people all over the world. Looking at the specific case in Turkey substantial environmental threats are increasing rapidly due mainly to urbanization, industrialization, the cost of life and local population explosions through the last three decades. As can be understood, humans have recently been utilizing a large amount of natural resources in order to increase and improve the quality of life. This situation has started to degrade the environment in which we live. The resulting environmental threat has initiated a movement in both the formal and non-formal education system, which has led specialists to consider providing environmental education (EE) in schools.

As reported by Palmers (1998), the only solution in overcoming these global problems is that global population needs to be better educated for environmental issues and problem. In other words, EE will be the central factor in raising public awareness in environmental issues. Fortunately, EE has recently been strongly emphasized and taken into consideration when planning school curricula by developed and developing countries. Non-formal organizations and governmental organizations plan several activities (such as summer camps, EE projects…etc) so as to enhance environmental consciousness among individuals. The chief aim of these activities is to promote environmental awareness and consciousness among individuals, and motivate them to take action to overcome the problems and sustain the environment.

There are many studies examining the factors affecting the motivation to take action for the purpose of protecting and sustaining the environment (e.g. Dresner, 1994; Karch, 2002; Korhonen, & Lappalainen, 2004; Palmberg & Kuru, 2000; Panic, 2004; Yerkes & Harras, 1997). Based upon the results of these studies, one can clearly say that the action taken by the individuals are mainly affected by level of environmental knowledge and knowledge of environmentally responsible action, as well as interest and curiosity about nature and participation in environmental education programs. In this regard, as a part of non-formal education activities, outdoor education provides several opportunities to become environmentally conscious citizens (Yerkes & Haras, 1997). As claimed by Matthews and Riley (1995), development of the environmental responsibility can be best done in the outdoors, which is in a natural setting that allows participating actively in outdoor activities which in turn increases interest towards the natural environment. As understood by the model based upon Dresner's (1994) results, increased interests and curiosity about nature stimulates learning about environmental issues which in turn motivates individuals to take environmentally responsible actions. In Turkey, one of the offered outdoor education programs are summer environmental education programs in national parks which help individuals participating in the program integrate their awareness of the natural environment, their knowledge of environmental concepts and issues, their knowledge on how to take action on environmental issues (Dresner, 1994), and positive attitudes towards environment, since these programs encourage the individuals to participate in all aspects of the activities.

**Summer Environmental Education Program (SEEP) by TUBITAK in Turkey**

In 1999 one of the largest national scientific research organizations in Turkey, TUBITAK, initiated scientific environmental education program in national parks (Ozaner, 2004a). This program has been expanded each year since other national parks into the program were added. In 2004, there were five national parks involved in the program. The program goal is to add five more parks to the program in 2005. The scientific environmental education programs in national parks are intended to increase

environmental consciousness among the graduate students and make them "*learn the language of the nature*". In addition, this program also aims at disseminating the understanding of environmental values to others (especially university staff; academic staff, undergraduate students…etc.) with the help of the graduate students who participate.

In August, 2004 in Kackar Mountain National Park in Trabzon, one of the Summer Environmental Education Programs (SEEP) was held by TUBITAK with the joint cooperation of some universities and Ministry of Environment and Forestry. Participating in the SEEP activity is open to all research assistants and graduate students enrolled in the departments of Chemistry, Biology, Geology, Geography, Landscape Architecture, Forestry Engineering, Agriculture Engineering, Industry Engineering, Anthropology, Sociology, Philosophy, Pharmacology, Tourism, and Science and Biology Education in any of the universities in Turkey (Kozak, 2004). The program lasted ten days in a hotel in Ayder Plateau in Kackar Mountain National Park. Among the applicants, 29 graduate students were selected for the program, each of whom was funded by the TUBITAK. The participants of the program were from 16 different universities in Turkey and 11 different departments.

The chief aim of this program titled "Use of National Parks for the Purpose of Science Education" was to promote the development of environmental consciousness in the research assistants and graduate students. Further, the program aimed at relating the subject area of each participant to the ecological bases on which all of the activities were based. Mainly, during the ten days of the program, the subjects of geology, geomorphology, botanic, landscape, zoology, and some cultural and public issues related to Ayder Plateau and Kackar Mountain were covered by relating them to ecology (Ozaner, 2004b). Twelve academics who were expert on different areas such as geography, forestry, geomorphology, climatology, fauna and flora attended the program to give lectures in their area of expertise. After each lecture, in order to observe and practice what the academics discussed, series of field trips were organized. By providing opportunities for the participants to observe, to sense and to experience the environment, the theoretical information that they gained during lectures given was connected with the actual environmental settings.

The purpose of the present study was to determine the relationship between human and the environment from a graduate student perspective. It was also aimed at investigating the impacts of human being on the natural environment based on the views of master and doctoral students in Turkey. The following questions directed and shaped the study;

1. What are the perspectives of graduate students (adults) on the relationship between human and the environment?

2. How do graduate students understand basic concepts about the environment in areas such as education, consciousness, and commitment?

3. What do they expect from families, media, environmental related journals, formal- and non-formal education in relation to environmental education?

## METHODOLOGY

This study is a qualitative case study. The qualitative methods were used for all parts of the study from selecting participants to analyzing and reporting the results. 10 graduate students were invited to participate in the case study. It is believed that using qualitative methods with small group of graduate students for this study enabled to get in-depth information from the participants on human and environment relationship. Studying with a small group of individuals and using qualitative data collection

procedures (interview, observation…etc) helps get deeper understanding and insight on the determined purpose (Patton, 1987). Once the data was gathered from the participants, they were transcribed and then analyzed in terms of content.

### a) Participants

Among the applicants to the SEEP in 2004, 29 students involved in graduate studies were invited to the program. All the participants have involved in either a master or doctoral program. 10 graduate students (six females and four males), who were from a different department and a different university, participated the present study voluntarily. The representation of the participants (academic discipline and department) allowed for the purpose of obtaining a broad understanding of the issues in the questions. Participant ages were ranged from 23 to 33. The characteristics of participants in the study were summarized in Table 1.

**Table 1.** *Demographic Characteristics of Participants*

| | Demographic information | Frequency |
|---|---|---|
| **Age** | 23-26 | 4 |
| | 27-29 | 2 |
| | 30-33 | 4 |
| **Gender** | Male | 4 |
| | Female | 6 |
| **Department (Name of the University)** | Geography (Dokuz Eylül Unv.) | 1 |
| | Chemistry (Black Sea Unv.) | 1 |
| | Chemistry Engineering (Uludağ Unv.) | 1 |
| | Forestry Engineering (Sütçü Imam Unv.) | 1 |
| | Environmental Engineering (Istanbul Unv.) | 1 |
| | Mechanical Engineering (Ankara Unv.) | 1 |
| | Landscape Architecture (Van, Yüzüncüyıl Unv.) | 1 |
| | Biotechnology and Genetic (Ankara Unv.) | 1 |
| | Agricultural Engineering (Çukurova Unv.) | 1 |
| | Veterinarian (pharmacology) (Uludağ Unv.) | 1 |
| **Program enrolled** | Master | 4 |
| | Doctoral | 6 |

### b) Data Collection and Analysis

In order to collect data from the participants of the study, the interviews were conducted in the seventh and eighth days of SEEP as one-to-one basis. The interview schedule included two parts: While the first part of the interview was designed to obtain demographic information (age, gender, program attended, and department enrolled) about the participants, the second one of the interview schedule comprised ten questions. The first four questions determined whether the graduate students participating in the study had been actively involved in environmental studies. These questions addressed topics such as their subscription of environmental related journals, membership in any environmental society at the local or national level, participation in any other environmental education program, and their participation in any environmental related research studies. The remaining six questions investigated graduate students' views about environmental consciousness, the human-environment relationship, individuals' commitments toward the environment, and the role of formal and non-formal education in developing environmental consciousness. Prior to the study the interview questions were reviewed by two experts to ensure appropriate content coverage. Based upon their

suggestions, the interview schedule was revised and some items were re-constructed for use.

Once the interviews with all participants were completed, the recordings were transcribed verbatim and analyzed in regard to the qualitative research procedures (Bogdan & Biklen, 1998; Yıldırım & Şimşek, 2005). Transcripts were first read over and notes made about notable issues from which coding categories were developed. In the content analysis of the data interviewee's responses were coded using these categories and then broader themes were constructed.

## RESULTS

The first four questions dealing with participation in environmental issues provided interesting results. Almost all the students in the study indicated that they did not subscribe any environmental related journal (only few did). These few stated that they subscribed to magazines like National Geographic, Atlas, Green Atlas, and Science and Technique. In addition, nearly all of them indicated that they were not a member of any environmental society or organization. However, two participants were both member and founder of local environmental society. All participants indicated that they had not previously attended any summer environmental education program. The SEEP by TUBITAK was their first such experience. Some of them were interested in and studied environmental issues such as stream betterment, use of pesticides, and organizing EE programs for elementary school students. In general, based on this part of the interview, we can conclude that participants in this study did not have a strong background in environmental issues. However, we can conclude that they have personal interest in developing their understanding of environmental issues because of their volunteering to participate in the SEEP program. This finding might have implications for understandings which emerge from the remaining six questions. Their responses and views are given below in five main themes emerged from the interview results.

### a) Understanding the Connection between "*Environmental Education*" and "*Environmental Consciousness*"

Determining graduate students' understanding of certain concepts addressing the aim of the SEEP was the other part of the interview conducted. For this purpose, the participants were asked to respond about what they understood from the concepts of Environmental Education and environmental consciousness. Their responses varied. Still, they agreed that EE is related to realizing and internalizing nature and the environment in which we live. It aims at, to them, instilling environmental consciousness by helping understand the concept of sustainability and ecological balance particularly. Clearly, as far as the participants are concerned, there is a strong connection between EE and interactions between humans and the environment. In the interviews, they generally reported upon the basic topics related to EE such as pollution, sustainability, food chain, ecological balance, footprints, protection of cultural, and social environmental values, and knowledge on the environment. Different from the others, a PhD student who dealt with veterinarian and pharmacology identified environmental education as "*environment for the city*" and she added that "*environmental education is also related to natural historical places of the city as well as the natural environment*".

Looking at their understanding with regard to environmental consciousness, they believed that this concept is more related to perceiving the natural processes, comprehending the importance of the environment, developing an alternative viewpoint, understanding and valuing the role of other living organism in natural balance,

developing an holistic understating for the environment, living according to environmental dynamics, developing environmental sensitivity, knowing how to behave responsibly, and protecting and sustaining the environment.

**b) The Relationship between Humans and the Environment**

From the graduate student perspective, humans have used natural resources roughly and unconsciously. As mentioned by the participants, humans' lifestyle, and industrialization were main factors causing the destruction of ecological balance. With technological improvements, people have isolated themselves from the natural environment. Economic developments have made people use the natural resources wastefully. The participants indicated that due to the lack of environmental policy and EE in both formal and non-formal education, people in Turkey generally have not gained adequate responsible behaviors towards the environment and have not had positive environmental attitudes for protecting and sustaining the environment for the future. In addition, to them, people have just constructed some protective measures for dealing with the problems directly affecting themselves. For that reason, people acted in a unilateral and self-centered fashion. One (PhD student and Environmental Engineer) of the participants identified the human and environmental relationship as self-seeking (pragmatist) and added that *"…for example, we are trying to put out the forest fire. Otherwise, this fire will harm our life…since we think that they harm human health, we are trying not to pollute water sources…".* Additionally, in the opinion of the respondents, most people just think of themselves and try to overcome problems influencing themselves directly. For the purpose of meeting their needs and aims, human being has exploited ecological resources.

A master student in Mechanical Engineering Department in the study reported that the environment associates with several topics and includes "*multi-dimensions*" such as "*politics, economics, sociology, education and so on*". She added that in order to overcome the problems of the environment, these all dimensions should be dealt with altogether. Interviewees claimed that fortunately, people have started to perceive their negative impacts on the environment and the emergence of environmental problems around. Human being has understood that if they continued using waste of natural resources, the future generations and their grand-children would not find any habitable environment. They have recently begun to adopt the understanding of sustainability for the environment. The participants believed that people have nowadays started to develop consciousness, responsible behaviors and action skills so as to protect the environment.

**c) Roles of Formal and Non-formal Education**

The roles of formal and non-formal education in developing environmental consciousness are unavoidable. The graduate students indicated that EE should be infused in school curricula, and since EE is interdisciplinary in nature, environmental related topics should be integrated into all courses like geography, science, biology, history, chemistry…etc. They mentioned about the reform attempts in all part of the education to make the education more environmental-based. These attempts were mainly about training of the teachers, providing curricular and extra curricular materials for the schools, developing infrastructure of the schools, creating public offices for raising environmental awareness, and organizing environmental friendly activities (e.g. recycling) for the local community. Further, they suggested that EE should be life long and available to all people. According to the participants, in order to make the environmental topics meaningful for people, the theoretical information should be

transferred into the practice and should be associated with other courses as well. The practice should be hand-in-hand with theory. In addition, the seminars and conferences should be held in schools and universities in order to make the students become aware of the environment around them. In this sense, from the interviewees' point of view, it is important to state that teachers and educators should be trained and equipped with necessary skills with regard to environmental topics to be covered. The participants asserted that the visual materials like pictures, posters, CDs, films and videos should be available in the schools to visualize what have learned in theory. Also field and nature trips should be organized for students so as to enable them to hear, see, touch, feel and realize the environment. Furthermore, the environment clubs should be established in schools to activate the students. At the end, the participants agree upon the importance of applied EE. They believed that the students can more easily learn about the environments by doing, by experiencing and living.

They also mentioned about the importance of non-formal education to get action skills and knowledge about the environment. A master student in Forestry Engineering Department emphasized the role of NGOs and added that "*NGOs should intensively organize environmental activities*". The others agree with him and reported that NGOs in turn should organize activities such as field trips, nature tracks, camps, panels, seminars and any other activities for all people to make them become consciousness and understand cultural and environmental values. EE programs should be organized for different age groups frequently. A graduate student in the department of landscape architecture discussed the contributions of "*visual and auditory media*" to raising environmental awareness. Nearly all of the participants agreed with him and emphasized that televisions, media and internets should be used as information sources for environmental consciousness and the alternative programs (e.g. discussion) should be included in television channels and radio programs.

**d) Citizenship Commitment toward the Environment**

From the citizenry commitment point of view, the participants reported that the citizens had responsibilities for the environmental protection and they should be aware of the natural environment in which they live. In relation to this, a PhD student in the Department of Landscape Architecture reported that *"…first of all, we need to know the environment with all dimensions such as ecological dimension, social dimension…After that we need to think of how we can diminish our impact on the environment..."*. Looking at people' responsibilities in detail from the participants' perspectives, the participants recommended that people initially should take precautions before the problems have occurred, and when they come across with any environmental problems, they should think on those problems analytically and critically, and then come up with alternative solutions so as to deal with them. Another important thing that the citizens should posses is action skill. In other words, people should act environmentally responsible. They should develop some environmental friendly technologies. As indicated by the participants, in order to protect and sustain the environment and natural beauties for future generations, people have important roles and duties: they should not be selfish toward the environment and consider other people' rights in relation to living in the healthy and clean environment.

As claimed by the participants, people should be aware of the cultural and social dimensions of the environment as well as natural dimension, try to diminish their footprint on the environment, reconsider their consumption habits and control extensive use of natural resources by taking responsible actions, by warning others and by consuming the extent to which they need. A PhD student in Biotechnology Institute

suggested "*birth control*" for diminishing the ecological footprint on the environment. In conclusion, in order to leave sustainable environment for future generations, citizens should develop consciousness, action skills and responsible behavior, and diminish their footprints in the natural environment.

### e) Roles of Family, Environmental Education Programs (EEPs), Environmental Magazines and Environmental Societies/Organizations

The participants reported that the families play a great role for instilling environmental consciousness and sensitivity of their children. Since children develop some skills in early ages, their families' attitude and view-points can influence on development of those skills. In this sense, according to the participants, families should firstly develop environmental understanding and action skills and then they should help their children grasp these understandings. In other words, families should model their children by doing.

In addition to family, attending to Environmental Education Programs (EEPs), subscribing to magazines and reading articles, and being membership of environmental societies/organization can also provide benefit on developing environmental consciousness with people. The participants indicated that attending EEPs might help people acquire alternative viewpoints in relation to sustaining the environment. They might begin looking at natural environment from different edges and perspectives. EEPs might help people think more holistic and general rather than part-by-part, and appreciate the environment and the necessity of maintaining it. One participant's views on mentioned issues included all of these things - "*rather than separating them from one another, family, environmental non-profit organizations, magazines and EEPs should be considered together since each supplements one another*" (a PhD student in the department of Veterinarian - Pharmacology).

## CONCLUSIONS, DISCUSSIONS AND SUGGESTIONS

This qualitative study was realized with ten graduate students among 29 students, each of whom was from different graduate programs, participated in the summer environmental education in Trabzon in Turkey organized by TUBITAK. The participants were interviewed for the purpose of getting their views on relationships between humans and the environment. In addition, during the interviews carried out how graduate students understand the concept of environmental education, consciousness, and commitment, and what they expect from families, media, environmental related journals, formal- and non-formal education when considering aims of environmental education were also investigated.

The answers given by participants to the main concepts were more related to what they have been studying. They tried to explain these concepts from their subject area point of view. For example, one of the PhD students involved in environmental engineering explained environmental education by using the terminology and jargon that are always used in his subject area. Another PhD student working on chemistry engineering explained these concepts by linking the main concepts used in her subject area to environmental education. It can be concluded that what one has worked on influences what they think about environmental concepts.

Based upon participants' perspectives on human and environment relationship, it is clear that people have been extensively using natural resources by considering only their own needs for a long time. Their lifestyle, attitudes and their unconscious behaviors are the main reasons affecting the emergence of problems faced today. Fortunately, they

have recently started to understand their negative impact on the environment around them. They have observed that technology and rapid industrialization do cause to come out environmental problems in local and global area. In order to protect natural environment and to sustain it for future generations, the major thing to be considered is that all citizens should not only be aware of their commitments and responsibilities towards the environment but also respect others' rights and change their attitudes and life style. The study by Connell et. al (1999) also supports this perspective. Moreover, people need to become more aware of their impacts on the environment and the implications of the ruined environments which will cause lots of problems for themselves. After that, they should develop actions skills and then take responsible action for the environment. Supporting these suggestions, Palmerg and Kuru (2000) indicates that motivation to take action for environmental issues can be stimulated by increased awareness and knowledge of environmental action strategies. Dresner's (1994) viewpoint seemed to be consistent with their ideas. He further claims that when the individuals get information on function of ecosystem and on action skills and strategies to maintain the natural environment, they tend to develop more environmentally responsible behavior. Howe and Disinger (1988) pointed out that becoming aware of environmental issues can be significantly impacted by outdoor experiences. Matthew and Riler (1995) seem to support this claim and add that involvement in outdoor activities stimulates environmental attitudes of individuals which might bring about environmental responsibility.

As environmental education programs in national parks might contribute to integrating awareness on environmental issues, knowledge on environmental concepts and action strategies to overcome the problems faced, it can be suggested that all individuals in each age group have the opportunity to attend organized summer environmental education programs such as SEEP. In addition, family, NGOs, media such as television, radio, newspaper and environmental magazines also have influence on shaping individuals' action skills and on developing an alternative viewpoint. The participants in this research also agreed that individuals should become aware of their responsibilities and produce alternative solutions and have action skills to overcome the problems.

The main emphasis here is on formal and non-formal education institutions. Formal education from kindergarten to university can influence developing environmental consciousness by integrating the related environmental topics into curricula. Similarly, non-formal education can contribute to graduate students developing this consciousness as well. In doing so, these institutions should reconsider their program and curricula in line with individuals' and societies' needs and expectations. Rather than emphasizing just theoretical information regarding the environment, the applied activities like field trips and nature trips should be organized in order to encourage the transfer of this theoretical knowledge into practice. Through this approach, children, teenagers, adults and elderly people can more easily learn environmental issues, develop environmental consciousness and action skills by help of constructivist perspective.

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