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DETERMINATION OF ENVIRONMENT LITERACY LEVELS OF UNIVERSITY STUDENTS STUDYING ON THE NORTHEN CYPRUS

MASTER THESIS

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This study by the Environmental Education and Management Department of the jury are considered as MASTER'S THESIS.

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ABSTRACT

DETERMINATION OF ENVIRONMENT LITERACY LEVELS OF UNIVERSITY STUDENTS STUDYING ON THE NORTHEN CYPRUS

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The aim of this study is to determine the level of environmental literacy of university students and to determine the effect of different variables on environmental literacy. The research was carried out with 400 university students studying in the North Cyprus during 2015-2016 academic year.

"*Relational Screening Model*" is used in this study conducted on the environmental literacy knowledge levels of university students. In this study, "*Environmental Knowledge Test*", "*Attitudes Towards the Environment*" and "*Behavior Towards the Environment*" scales are used as a data collection tool. The literature (theses, articles, papers, books, etc.) on the subject to improve the data collection tool developed by researchers, creating the basic structure of the research, is examined in order to reach the designated research purposes and the main frame is formed with the conceptual structure of the data collection tool.

Survey data obtained were analyzed using SPSS 20.0 computer program. Unbound "t" test was used to determine the levels of students' environmental literacy (knowledge, attitude, behavior) participating in the research according to gender and ANOVA, Duncan's test was used to determine the varies according to their class and economic situation, parent education status and monthly family income. According to the study results, the environmental literacy level of university students was found as moderate. It is determined that university students have partially high level of environmental attitudes; while their environmental knowledge and environmental behavior levels are moderate.

Keywords: Environment, Environmental Education, Environmental Literacy, Environmental Attitude, Environmental Behavior.

ÖZET

KIBRIS'IN KUZEYİNDE ÖĞRENİM GÖREN ÜNİVERSİTE ÖĞRENCİLERİNİN ÇEVRE OKURYAZARLIK DÜZEYLERİNİN BELİRLENMESİ

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Bu araştırmanın amacı, üniversite öğrencilerin çevre okuryazarlık düzeylerini belirlemek ve çevre okuryazarlığı üzerinde çeşitli değişkenlerin etkisini ortaya koymaktır. Araştırma 2015-2016 eğitim-öğretim yılında Kıbrıs'ın Kuzeyinde öğrenim gören 400 üniversite öğrencisi ile gerçekleştirilmiştir.

Üniversite öğrencilerinin çevre okuryazarlığı ile ilgili bilgi düzeyleri konusunda yapılan bu araştırmada *"İlişkisel Tarama Modeli"* kullanılmıştır. Bu çalışmada, veri toplama aracı olarak,*"Çevresel Bilgi Testi"*, *"Çevreye Yönelik Tutum "* ve *"Çevreye Yönelik Davranış"* ölçeği kullanılmıştır. Veri toplama aracının geliştirilmesi, araştırmanın temel yapısının oluşturulması için konuyla ilgili literatür incelenmiş ve araştırmanın ana çerçevesi oluşturulmuştur.

Anketlerden elde edilen veriler bilgisayar ortamında SPSS 20.0 programı kullanılarak çözümlenmiştir. Araştırmaya katılan üniversite öğrencilerinin çevresel okuryazarlık (bilgi, tutum, davranış) durumunun katılımcıların cinsiyetlerine göre farklılık gösterip göstermediğinin tespitinde ilişkisiz "t" testi, sınıf, bölüm, anne-baba eğitim durumuna, ailelerin aylık gelir düzeylerine göre farklılık gösterip göstermediğinin tespitinde ise ANOVA, Duncun testi uygulanmıştır.

Araştırmadan çıkan sonuca göre üniversite öğrencilerinin çevre okuryazarlık düzeylerinin orta düzeyde olduğu tespit edilmiştir. Üniversite öğrencilerinin kısmen yüksek düzeyde çevresel tutuma sahip oldukları; çevresel bilgi, çevresel davranış düzeylerinin ise orta düzeyde oldukları belirlenmiştir.

Anahtar Kelimeler: Çevre, Çevre Eğitimi, Çevre Okuryazarlığı, Çevresel Tutum, Çevresel Davranış.

ACKNOWLEDGEMENTS

Nowadays, the environment has become a global issue. Because the environment, is a habitat affected by all living things but also gets effected by all living forms in return. In this respect, each country has its own mission to realise the environment. we teachers, who will train the next future generations, have more responsibility in this regard. As educators, we should act a role model for our students, educate them about good environmental education, raise them as environmental literary individuals as dictated by our primary task. Raising our students as individuals with environmental knowledge should be the goal of all teachers. In this study, I researched the environmental literacy of university students, who I thought want and have a desire to live in a sustainable environment as the future of next generations and made inferences.

Many people have contributed to the process of planning, implementation and finalization stages of this research. I would like to thank my dear teacher, advisor Dr.Fidan ASLANOVA who encouraged me, supported me in all kinds of subjects, particularly in the realization of this study, in every moment of my work for her support even in her busiest days in the best way.

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ABBREVIATIONS

GREENPEACE: Greenpeace

BM: United Nations

UNEP: United Nations Environment Programme

WWF: World Wildlife Fund

DHKD: Natural Life Conservation Society

UNESCO: United Nations Educational Scientific and Cultural Organization

REC: Regional Environmental Center

X: Arithmetic Average

F: Fregrancy

(%): Percentage

T: Value for T-test

P: Significance Level

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CHAPTER I
INTRODUCTION

Since the beginning of time, mankind has wondered, researched and tried to perceive the world and has produced technological products to make life easier as a result. Today, the improvements taking place in technology and in increasing information fields have undoubtedly changed the requirements of the societies. The society is educating individuals who can use and understand the paradigm and information emerging from the needs and the technological applications produced by this informations.

While our standards of living are rising with the developments in science and technology, the professionals and people who are sensitive to the environment have a common opinion, at the point where we perhaps from insensibleness, ignoring or unintentionally are giving countless damage to the environment. But however hard we struggle and however hard we try to correct it, we are unable to rehabilitate some situations. A human is not independent in his/her environment. He/she interacts with living and non-living things in his/her environment. In this aspect, all kinds of positive contributions individuals make to their environment are positive to them and negative contributions return as a damage to them. Sometimes these problems reach heights that can lead to situations that could threaten even their lives. When looked from this point of view, primarily teaching the scope of environmental awareness to people and the importance of working towards changing the perception of the environment is inevitable. In particular, environmental education becomes compulsory for every individual. Recognizing environmental problems, fighting this problem and minimizing these problems will only be possible with a conscious work.

Bringing environmental problems to the global agenda has actually began in the 1960s. In this sense, the 1st United Nations Environmental Conference, which was held at Stockholm, Sweden in 1972, is very important because it is the first assessment made about the environment and environmental issues on a global scale.

The 1st Climate Conference in 1979, the 2nd Climate Conference in 1990 and the Rio Summit in 1992, which is one of the largest and most comprehensive conference of the century and the 2nd United Nations Conference on Environment and Development are the few of the remarkable progresses made in environmental issues. Environmental problems were first covered in the 1973-1977 period under the III. Five-Year Development Plan as a separate section in Turkey. When the proposals and decisions of this conference and meeting are carefully examined, it is understood that people are the main reason for environmental issues. "The number of environmental issues have increased consecutively with the increasing standards of mankind. Humans have developed science and technology while causing environmental problems. What kind of environmental education must be given to mankind in order to keep local, regional and global environmental issues at minimum levels? This question has been discussed and debated for a long time on local, regional and global levels" (Koç, 2013).Today the environment is still being discussed at national and international conferences. Even if all possible measures in the field of technology, law, politics, economy is taken, it is known that global environmental problems will not be solved unless the sustainable communities are established and significant changes in people's lifestyles are made. Therefore, the importance of environmental education has increased and the development of environmental education will play an important role in human efforts to prevent environmental damage (Kawashima, 1998., Selvin, 2007).

Literacy term was not originated until the end of 1800. Although the origins of literacy only mentions about reading and writing skills, after the industrial revolution, the scope of this concept's usage has expanded. After the industrial revolution, this concept is used in the sense of being well-educated in a certain area or to have a broad knowledge about a specific field (McBride, 2011).

The concept of environmental literacy has emerged as a concept that emphasizes how an individual's relationship should be with the natural environment. One of the most comprehensive definition of this concept has been defined by Roth (1992) as: "EL is

the avtive efforts of an individual about the environment and environmental issues, attitude towards the environment and environmental issues, skills, motivation to work towards the solution of environmental problems, trying to ensure the quality of life and environmental balance". At the same time, it has been stated that environmental literacy consists of four components such as knowledge, skills, affective domain and behaviors and has 3 levels: nominal, functional and operational (Karatekin & Aksoy, 2012).

If we want to solve today's local, national and global environmental problems, we must ensure all individuals demonstrate responsible environmental behaviors mentioned above. The most important way to ensure that is to help them become environmentally literate citizens through education.

1.1. Purpose of the Study

The aim of this study is to determine the level of environmental literacy (environmental knowledge, environmental attitude, environmental behavior) of university students and to determine the effect of different variables on environmental literacy.

1.2. Problem

Each sub-dimension (environmental knowledge, environmental attitudes and environmental behavior) of university students' environmental literacy levels will be investigated in terms of demographics features, to find out whether or not the differences exist.

1.2.1. Sub-Problems

- What is the level of environmental literacy (environmental attitudes and environmental behavior) of college students?

- Is there any significant relationship between the environment and knowledge of university students?

- Is there any significant relationship between the class variables of attitude and behavior levels of university students?

- Is there any significant relationship between university students attitude and behavior levels and their nationality?

- Is there any significant relationship between university students' attitudes and behavior levels and their age and gender?

- Do the attitudes and behavior levels of university students affect the economic situation of families?

1.3. Importance of The Research

Mankind uses natural resources to increase and improve their quality of life of human beings unlimitedly. However, this approach has gradually started to threaten the areas we live upon. Being aware of the mankind's impact on the environment is gaining more importance every day. This case demonstrates the importance of environmental education in schools and education systems. Environmental education has begun to be taken into consideration during the planning of education policies in recent years (Erdoğan, 2009).

Nowadays, with the environmental problems increasing day by day, the importance of raising environmentally literate individuals is also increasing. However, when studies are examined, it is observed that the sub-dimensions of environmental literacy were examined and environmental literacy was not demonstrated quantitatively. Thus, this study will contribute to improving the environmental education of university programs in order to ensure that future generations will grow up as environmentally literate, whom we will entrust our future The conceptual framework to be used in the study is intended to shed light on future work that is to be done in this area.

1.4 Limitations

- The research is limited to the 2015-2016 academic year.
- The research is limited to university students.
- The results of the research is limited to the data obtained from the Environmental Literacy Survey (Environmental Knowledge Test, Attitudes Towards Environment, Behavior Scale Towards Environment).

1.5 Assumptions

- It is assumed that the university students who participated in the survey provided accurate information about the subject.
- It is assumed that the university students who participated in the research provided accurate and honest answers to the questions in the questionnaire.
- It is assumed that the answers given to the questions in the questionnaire reflects the actual views of the participants.
- It is assumed that the questions did not oriented the students.

1.6. Definitions

Environmental Education: All the events held to educate citizens who are sensitive and interested in the environment and the problems relating to it and who will work to solve these problems and who have information, skill, attitude and behavior (Merritt, 2008).

Environmental Attitude: Learned tendencies that are consistent with the environment, manifested in the form of exhibiting positive or negative attitudes (Pelstring, 1997).

Environmental Behaviour: A concrete indication of an individual's environmental knowledge, attitudes and skills and is the active participation in activities that contribute to the solution of the environmental problems (Kışoğlu et al, 2010).

Literacy: Good trained or, to have an extensive training, education and culture (Kışoğlu et al, 2010).

Environmental Literacy: All attitudes, skills, intellectual habits and observable behaviors developed to establish positive ties with the people of the environment and with other people or other biospheres in order to establish sustainable relationships (Roth, 1992).

CHAPTER II
RELEVANT LITERATURE

This part, discusses the content of the research, environment and environmental literacy in two parts under the name of theoretical framework. While information on the theoretical structure of the environment and environmental literacy takes part in the first part, studies conducted about the environment and environmental literacy in domestic and foreign countries takes part in the second part.

2.1.Environment

The definition of the environment falls within a wide range but the definitions have common points. Özay (2005) describes the environment as an environment where people or living creatures live. In another definition, environment is described as a medium where living creatures live, connected to it with vital bonds, affect it in various ways and also are affected by it.

According to Kartal and Şengül (2001), "the relationship among people, animals, plants, air, water, soil, natural structures, man-made artworks and products, social and economic networks and types of these relations, space, heat, light and radiation and these ten environment items are a whole".

According to Görmez (2007), the environment is defined in two ways; first as a natural environment that did not change because there was no human interventionn and second an artificial environment created by people utilizing the natural environment within the process of social and economic evolution that had occurred since the beginning of mankind until today.

The environment can be defined as all of the external factors integrity of physical, chemical and biological factors affecting living creatures, all of the physical and social factors determining the shape and life of the living creatures and affecting it, and a community of factors which can affect the organisms lives (Tokay & Yüksel, 2003).

2.2. Elements of the Environment

The living concept of all organisms mentioned in these definitions consists of plants, animals and humans. Inanimate elements of the environment are the items such as the structure of the earth, water, air, and climate. In a study Dinçer (1998) conducted, the elements of the environment are shown as followes: Living and non living creatures are a whole within the environment and they are in constant interaction. Therefore the environment can be examined in two parts as the natural and artificial environment.

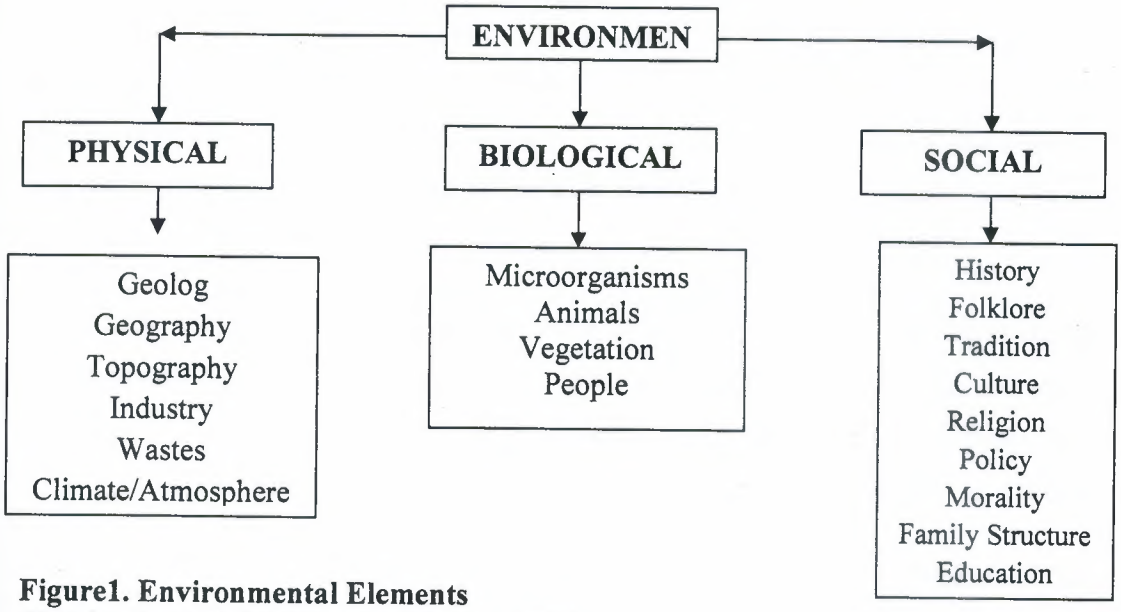


Figure1. Environmental Elements
(Rowland, 1983; interpreter, Dinçer, 1998).

2.2.1.Natural Environment

The Natural Environment is the environment that people found ready as they set foot in the world and did not contribute to its formation (Keleş and Hamamcı, 1998). The Natural Environment is the natural assets like mountains, plains, seas, lakes and etc. which occurred due to natural factors and which cannot to be fully changed by the living creatures.

2.2.2.Artificial Environment

Artificial environment is made up of all the assests such as roads, bridges, dams, cultures etc, created by benefiting from the nature by the people in the process since

the beginnning of time. This environment is concerned with the effect of the civilization products that came up with the human civilization. There are several items in artificial environments with harmful effects on human health. These items can be sorted as air pollution, water pollution, noise pollution, light and wastes (Görmez 2003., Karahan 2009., Yıldız et al, 2005).

2.2.3.Ecology and Ecosystems

Ecology is a science that studies the relationships between living things and their environment. Ecology word was used and disclosed by the German biology scholar Ernst Haeckel for the first time in 1869. It derived from the greek words "oikos (home, place to live) and logos (knowledge). Therefore ecology examines the habitats and the environment of all living organisms' homes. This environment consists of other animals and plants, elements such as climate and soil (Muşlu, 2000).

Ecosystem is the natural system where other living and non-living life forms in the environment communicate and interact with each other, possess the necessary conditions for the continuation of life, can renew itself the with clear boundaries. It is a living environment that contains the specific conditions for life (Yıldız et al, 2005).

Since the physical environment living creatures live in show too many changes, ecosystems may be composed of various and complex habitats. For example, as an ocean may be an ecosystem a step, a meadow, a maquis, a forest may also be an ecosystem. Therefore, ecosystems can be divided into three groups according to their sizes as: "macro-ecosystem", "meso-ecosystem", "micro-ecosystem" (Akman et al, 2000).

Living and non-living elements form a special ecosystem with their environment that they are in continuous interaction. Thus they create two major ecosystems on Earth. These ecosystems are:

a)Terrestrial Ecosystems: Forests (tropical rain forests, temperate forests, cold zone forests), Maquis, Meadows, Deserts

b)Aquatic Ecosystems: Marine ecosystems, River systems, Stagnant water ecosystems (Cansaran et al, 2008).

2.3.Environmental Problems

The history of environmental problems is as old as the history of mankind. Nature has never revealed environmental issues itself. The environmental problems experienced over the world, has began with the impact mankind has made to the environment. However, the environmental problems are more common in the 20th century than all the environmental problems in the past (Özey, 2005).

Mankind began using machinery with the industrial revolution and environmental problems began to increase. Rapidly increasing world population, unplanned industrialization and unhealthy urbanization, nuclear studies, regional wars, pesticides used to increase the efficiency, natural resources are consumed rapidly by chemicals such as artificial fertilizers and detergents, as a result, the polluted air, water and soil start to be harmful to living things (Doğan 1997., Erten 2004., Uzun 2007., Population Reference Bureau, 2008 akt. Baykal & Baykal 2008).

Along with these problems in recent years, problems such as climate changes experienced in the world, the thinning of the ozone layer, the increase in temperatures, melting glaciers, the changes in storms and natural vegetation is affecting the entire globe, and carry these problems from territorial to a global dimension (Baykal & Baykal 2008., Gökmen, 2008).

After a closer examination of what the environmental problems are, the "air, soil and water" pollution, which are the basic building blocks, are seen to stand out. With the pollution of basic structure, environmental problems emerged as a chain reaction.

2.3.1.Air Pollution

The atmosphere is made up of variable gases with unchanging amounts such as nitrogen, oxygen, and inert gases and gases with changing amounts such as carbon dioxide and water vapor. These contaminants that can be found in the atmosphere in

the form of dust, fumes, gases, odors and impure water vapor, and the increase in the amount where it can hurt people and other living things is defined as "air pollution" (Çepel & Ergün 2009., Kainth 2009., Özen, 2007).

2.3.2.Water pollution

Water pollution is expressed as the state which occurs when unwanted, harmful substances in an amount and density that can degrade the quality of water mixes with water (Çepel & Ergün 2009). Also water pollution, is defined as the state which occurs when organic, inorganic, biological or radioactive materials that can disrupt the use of water resources, mixes into water (Özen, 2007).

The main elements that created water pollution are ranked as industrial enterprises, power plants, large dam projects and agricultural activities, increases in agro-industrial waste waters, unplanned urbanization, tourism activities in coastal areas, acid rain, chemical pesticides, and soil erosion (Brisk 2000., Cansaran et al, 2008., Çepel & Ergün 2009., Kainth, 2009., Pearce, 2009).

2.3.3.Soil Pollution

The degradation of the physical, chemical, biological and ecological properties of soil due to natural or human impact is defined as soil pollution. When the main causes of soil pollution is examined; incorrect land use, forest destruction, domestic and industrial waste, cleaning agents containing harmful chemicals, increases in the use of stationery elements appear to come forward (Özen 2007., Cansaran et al, 2008., Çepel & Ergun 2009).

The formation of soil in the world generally is in the same ratio with erosion, wind or flood, so the distinction of being a renewable resource land is protected. But our actions, especially to feed the rapidly growing population or constantly opening new land deemed necessary due to the use of primitive farming methods and using water from irrigation sources more and more, and the use of chemicals in agriculture leads to the loss of soil and pollution (Brisk, 2000).

2.3.4. Other Problems

In addition to air, water and soil pollution, global warming and climate change as a result of the corruption of carbon cycle in recent years, the effect of greenhouse gases, depletion of the ozone layer, acid rain, depletion of water resources, nuclear waste, waste management issues are also included in environmental issues and it is becoming a current issue. moreover, the deforestation caused by all these noise, light pollution effects, desertification, extinction of biodiversity as a result of adverse effects made against the environment is also formed (Baykal & Baykal 2008., Cansaran et al, 2008., Gökmen 2008., Erdoğan et al, 2008., Kaith 2009., Özen 2007., Uzun 2007).

2.4. Environmental Organizations

There are international organizations working for the environment and environmental education. These are;

WWF (World Wildlife Fund): Wildlife Conservation Society (DHKD) is the organization of WWF in our country that runs the protection works of the local environment and natural species. Its aim is to protect and recognise the value of the natural habitat of Turkey's exceptionally rich plant and animal species. In this direction, it conducts preservation projects; cooperates with the public, local/central administrators and companies.

GREENPEACE: It is the world's most famous environmental organization. Greenpeace bears witness to the environment crimes committed in the world, through direct action and without violence. Being witness to a crime against the environment, makes peaceful actions in order to put pressure on those who commited the crime by drawing the attention of the society and conducts campaigns based on scientific datas.

ECO-SCHOOLS: With this project, the students in schools around the world can both obtain infromation about environmental issues and take an active role in raising awareness of families, local authorities and non-governmental organizations on

environmental issues. The program also includes an environmental management system application based on ISO 14001/ EMAS, in schools.

REC (Regional Environmental Center): It is an independent international organization. It continues to work since 1990. REC gives support to stakeholders to produce effective solutions on issues such as environmental policy, biodiversity, climate change, renewable energy, environmental information and waste management, by working in various fields of sustainable development. With its office networks in 17 countries and with over 100 international team of experts working in these offices, REC, fills an important gap in these countries it is working. These offices have the experience and activities beyond the limits of their country and carry out joint works in many European borders that are gradually expanding.

2.5. Environmental Education

Environmental education is described as: "The process of motivation and training on issues related to improving their environmental attitudes, putting forward individuals' ideas related to the solution of environmental problems and acquiring the necessary knowledge and skills to act positively for the environment" (UNESCO, 1978).
While the objectives in the cognitive domain are forwarding people to make them more environmentally literate, the purpose of the affective domain is to develop attitudes and values against the environment and environmental problems (Pe'er, Goldman et al, 2007).

The effect of two important movements can be seen in the emergence and development of environmental education. These movements are environment and education. In parallel to this movement, nature studies which contributed to the development of environmental education has emerged in non-school education and protection training. These educational approaches have contributed very significantly to the advancement of environmental education (Marcinkowski, 2006).

2.6. Goals, Objectives and Principles of Environmental Education According to the Tbilisi Declaration

2.6.1. Objectives of Environmental Education

- To improve the awareness and sensitivity of compatibility among economic, social, political and ecological events in urban and rural areas.
- To allow individuals to acquire necessary knowledge, values, attitudes, responsibility and skills to protect and improve the environment.
- To create a new environment-oriented behavior in individuals and in society as a whole.

2.6.2. Aims of Environmental Education

While the target groups in environmental education are all the individuals, the aim is to develop environmentally sensitive, positive attitudes and behaviors regarding environmental protection (Tombul, 2006). These goals are expressed in the Tbilisi Conference as follows;

- ***Awareness:*** To ensure that the individuals and societies gained consciousness and awareness about the environment and its problems.
- ***Information:*** To ensure that the individuals and societies gained basic information and experience about the environment and its problems.
- ***Attitude:*** To ensure that the individuals and societies gained certain value judgments and sensitivity for the environment and active participation desire in the direction of environmental protection and improvement.
- ***Skills:*** To ensure that the individuals and societies gained skills for the identification and analysis of the environmental issues.
- ***Participation:*** To ensure that the individuals and societies gained the opportunity to participate actively at all levels in order to bring solutions to environmental problems.

2.6.3. Principles of Environmental Education

- Environment should be considered as a whole composed of natural and artificial technological and social (economic, political, cultural, historical, ethical and aesthetic) elements.
- Lifelong education should start from pre-school education and continue at all formal and non-formal education stages.
- The value and necessity of local, national and international cooperation should be brought forward in order to take measures against environmental problems and to bring a solution to it.
- Environmental awareness, knowledge, problem solving skills and shaping of value judgments should be given in a way that will appeal to all age groups.

In most of the work done on behalf of environmental education, focused on two main objectives of environmental education. These objectives can be summarized as the development of environmental literacy levels of individuals and their responsible behavior towards the environment (Erdoğan, 2009).

2.7. Literacy

"Reading and writing" is to read by using the writing symbols as its first meaning and solving the meaning created with the same symbols (Aşıcı, 2009). So literacy, was previously seen as the ability to read and write. However, this concept has expanded in recent years and is defined as being well-trained or having better education and culture (Roth, 1992).

The world we live on, has thousands of the symbolic expressions besides the writing symbols. Trying to work out a sense from these symbols is a type of reading. In fact, Beholding or arriving difference to counciously or uncounciously we read our environment, ourselves, events and the things happening around us and sometimes we write to express ourselves again using symbols (Altun, 2005).

When looked in this way, literacy is a state that starts with giving voice and meaning to writing symbols, and understanding objects, phenomenas and events deeper and

expressing them in your own way with the use of these skills effectively. Literacy is a type of interaction, in another aspect. It is a tool of understanding the information skills and social norms in the society, sharing with each other, interpreting and transfering to the next generation (Altun, 2005).

Literacy states that knowledge and skills are continuous it is not a typological classification. The concept of the information obtained is used as internalizing ability to use in daily life. For example; computer literacy, visual literacy, cultural literacy, scientific literacy, media literacy etc. Environmental literacy has emerged as an important dimension in these literacies (Bybee, 2008).

2.8.Environmental Literacy

Most of the concepts used in environmental education, are based on not only objects, but abstract concepts and concrete image formed in people's minds as well. Therefore, environmental education, is filled with concepts that are difficult to define as their content of the nature. These concepts of human social dimension, can not be measured as concrete objects and can not be standardized. As they are all based on identification, they all are affected by the beliefs and provisions of the people. They are open to incorrect or careless use. Because of these, the content of the concept of environmental literacy is often discussed these days, and a consensus could not be reached (Uzunoğlu, 1996). Therefore, the meaning of environmental literacy is still being discussed today (Anderson, 2007., Kışoğlu et al, 2010).

Environmental literacy concept was used by Charles E. Roth for the first time in 1968. Roth has defined environmental literacy as the environmental knowledge and awareness of the individual. Then Orr (2002) stated that environmental literacy is the comprehensive understanding of the relationship between the people and society with the natural environment. According to Orr, an environmentally literate individual knows the impact of science, technology, agriculture and culture on the functioning of natural systems and takes sound environmental decisions to ensure the sustainability of the environment (Orr,19902 akt. Kışoğlu et al, 2010). In 1992,

Charles E. Roth has expanded the environmental literacy definition that was first used in 1968, and stated that it should include the observable behaviors (Roth, 1992). After Roth's (1992) 's definition, "observable behaviors" was highlighted when identified by others. Roth, expanding the definition of environmental literacy time defined it as a whole consisting of understandings, attitudes, skills and mental habits used in order to establish positive ties with the environment and to establish sustainable relationships with other people or the biospheres.

When different assessments on the features included in environmental literacy are examined, it is seen that environment, knowledge responsible for environmental behavior and attitude are the points highlighted in common (Kışoğlu et al, 2010).

Roth (1992) revealed the idea that environmental literacy has four basic dimensions. These dimensions are *knowledge, perception (attitudes and values), the skills and behavior*. Besides the dimensions of environmental literacy, Roth (1992) has set the phases and levels of environmental literacy. Roth (1992) stated that environmental literacy consists of 4 stages.

- ***Awareness:*** At this stage, the individual starts to be aware of the relationship between nature and mankind and how important this relationship is for the continuation of life.The individual has features belonging to cognitive or affective areas or both.

- ***Concerns:*** At this stage, the individuals are worried about some problems, which are caused by the degradation of the relationship between nature and human that may damage the environment.

- ***Understanding:*** At this stage, the individual has information about potential future results of today's relationship between humankind and nature. Thus, the individual can develop a variety of solutions for solving environmental problems and take some decisions.

- ***Behavior:*** At this stage, the individual allows the reduction of the effects caused by environmental problems by using the accumulated knowledge in changing its existing environmental behavior.According to Charles E. Roth (1992), there are 3 levels of environmental literacy and each level shows distinctive features.

- ***Nominal Environmental Literacy:*** The environment, which is the start of basic cognitive awareness and some understandings, is the first level of literacy. The individual knows the basic concepts about the environment and the meanings of these concepts knows the elemental components of the nature (living and non-living creatures, the demands of life etc.). knows the value of both nature and society and has the ability to identify problems. Has behaviors enhancing the quality of environment (Roth, 1992).

- ***Functional Environmental Literacy***: It is the second level of environmental literacy. It focuses on the transfer and the use of the informations to daily life and on skills in specific subjects. It has information about the interaction between natural systems and the social system which is created by functioning of natural systems and people. knows the history of environmental issues and problems and is able to analyze the issues from its own perspective. It can work in cooperation. It is internal control focused. Participates in individual and group actions (Roth, 1992).

- ***Operational Environmental Literacy:*** It is the top level of Environmental Literacy. The individuals have an in-depth environmental information. Constantly obtain information on environmental issues and convert them to a responsible environmental behaviour to ensure the sustainability of the environment. It uses scientific process skills. Its awareness and sensitivity towards the environment is high (Roth, 1992).

2.8.1. Environmental Attitude

Attitude is a form of attitude or behavior of an individual made on certain cases. As known, attitudes are not acquired by birth but learned after by individuals Attitudes can be changed and improved. However, changing attitudes or behaviors may require

a long process. Parents, teachers and close friends play major roles in creating an attitude (Gezer & Erol, 2006). It is defined as continuous unchanging beliefs, feelings and attitudes (positive, negative or neutral) which leads us to behave to specific people, objects, events or organizations, etc. always in the same way.

İnceoğlu (2004), defined attitude as a an individual's pre-disposition of mental, emotional and behavioral response organized by experience, motivation and knowledge against any object, social issues, or events. The attitude elements of an individual's environmental literacy was expressed as a degree of taking society's moral and ethical values into consideration, as well as having sensitivity towards the environment and environmental issues, when taking decisions about the environment and exhibiting responsible environmental behaviors (Kışoğlu et al, 2010).

According to Erten (2005), environmental attitudes consists of positive or negative attitude and behaviors of individuals shown as environmentally beneficial behavior against environmental problems caused by fear, anger, restlessness, values of justice and being ready to solve environmental problems. It can be said that the concept of attitudes towards environmental movement can cover both thoughts towards the environment and responsible behaviors. Studies show that for environmental attitude to be positive, the need to be ready in terms of environmental knowledge is primarily needed. An individual, with a prior knowledge, can take more positive steps in his behavior, decisions and attitude towards the environment as a conscious individual.

2.8.2. Environmental Knowledge

The term information comes from the Latin root of "informato", and it means "forming", "formatting" and "giving news". Information is defined on the general as "intellectual product" or "learned thing" obtained through thinking, judgment, reasoning, reading, observation and experiment (Balay, 2004). Environmental knowledge is defined as the problems of environmental issues, solutions sought to this problem, developments in ecological areas and information about the nature (Erten, 2005).

The information element of environmental literacy is not just about the ecological information. Knowing the definition of significant environmental terms, and understanding the characteristics of the relationship between environmental incident events and the natural systems are included in the information element of environmental literacy (Kışoğlu et al, 2010).

2.8.3. Environmental Skills

Skill is defined as the ability of succeeding in business depending on the person's ability and susceptibility. Environmental skill is the ability to use the attitude and knowedge on the solution of environmental problems (Kışoğlu et al, 2010).

2.8.4. Environmental Behaviour

Environmental behavior is a concrete indication of the environmental knowledge, attitudes and skills of individuals and active participation in the activities that will contribute to the solution of environmental problems (Kışoğlu et al, 2010). As required by the Tbilisi Conference, educating individuals that demonstrates responsible behaviors towards the environment is listed among the main objectives of environmental education. Responsible behavior towards the environment can be grouped under five main sub-categories (Hsu, 1997., McBeth & Volk, 1997 akt. Erdoğan, 2009). The categories are:

*1) **Physical Protection Behavior (Eco-Management):*** Direct behaviors used by people for the analysis and prevention of environmental problems

*2) **Consumer and Economic Action:*** People use financial support or financial pressures as behaviors for the analysis and prevention of environmental problems

*3)**Individual and Public Persuasion:*** Warnings and persuasive behaviors used by people for the analysis and prevention of environmental problems

*4)**Political Action:*** Political practices used by people for the analysis and prevention of environmental problems.

5)Legal Action: Behaviours shown to the individuals who support the law and to the proposition of new laws for the analysis and prevention of environmental problems

2.9.The Studies Conducted At Domestically and Abroad on Environmental Education and Environment Literacy

2.9.1. Researches on Environmental Education

Gigliotti (1999), has emphasized on the shortcomings and failures in environmental education, and expressed his thoughts on what can be done in environmental education. He stated that the environmental education is not training people that can or is willing to solve the environmental problems of nowadays. In spite of having a population with environmental sensitivity, people still are not aware of the required information about the origin of the problem and especially the actions that can and should be performed.

Sungurtekin (2001), the issue of environmental education has been examined through music within the scope of "Applied Environmental Education Project". "Our Environment and Music" unit is located in a music teaching program. Within this course, environment themed songs are taught in the school chorus, rhythm instruments are made from waste materials, events on expressing one with animal sounds using creative drama is made. It has been observed that the students' thoughts about the environment and creativity developed with the help of these events.

Şimşekli (2001), in his study, titled "Evaluation Of The Contributions Of School Administrators And Teachers On The Activities Performed Under The 'Applied Environmental Education' Project By The Selected Schools In Bursa", the activities carried out under the 'Applied Environmental Education' project within the 2000-2001 academic year in Bursa were examined in terms of the contribution of school administrators and teachers. The share of the activities, organized after the activity reports prepared by the school administrators of selected 14 schools and examining reports prepared during reviews, on the formation of environmental awareness among

children were investigated. It was observed that the lack of sufficient awareness of environmental factors was one of the factors that made it difficult for the teachers to teach environmental education.

Morgil et al. (2002), have investigated the effects of project-based learning in science education on the students' knowledge and awareness of environmental issues. A pre-test about the environment was applied to 6th Grade elementary school students, then the students were requested to work on environmental projects and submit them to the class. The last test was administered to students when the project work was completed. In tests applied to students at the beginning of the study, students were found to have sufficient knowledge on environmental education. on the other hand, as a result of the project-based learning model of students and preparing projects on environmental education, a significant increase was observed in their knowledge levels.

Ko & Lee (2003), have studied the perceptions of high school science teachers on teaching the environmental problems in the science curriculum. To investigate the perceptions of teachers on environmental education, surveying and interview technique was used. The study demonstrated that the attitudes of science teachers towards environmental education results, their ability to teach environmental education, their belief in the compliance with the environmental education science could be associated with their ways of teaching environmental education. If teachers have more positive attitudes towards environmental education, have the ability to teach more environmental education and they believe in more consistency with the environmental science education, then they are more likely to teach environmental education.

Şahin et al. (2004), have conducted an application aimed at determining the effectiveness of student-centered environmental education in higher education. An effective environmental education was given to teachers with the environmental courses that have a completely different approach in which the students are active in

lessons. In the study carried out with the special case approach, environmental education course in biology teaching department was undertaken with an approach that was prepared completely with the creative skills of students and undertaken with a classic approach in classroom teaching department. Questions were directed to the students about acid rain, greenhouse effect, ozone layer, the protective filter concepts which were taught under the air pollution subject at the end of the semester and their views on the teaching of the lesson were asked. The views of students were evaluated qualitatively and quantitatively. Student-centered teaching was found to be significantly more effective in the course of execution of the concept. It was proposed that this course is given to all students enrolled in higher education, by ensuring the active participation of students.

Öznacar (2005), has examined the biological diversity, environmental pollution and erosion education taken by the 5th grade elementary students under the constructivist learning theory, and its effects on academic achievement and retention. During the implementation of constructivist learning theory, the test group which was applied by the methods as meaningful learning, project-based learning, cooperative learning, and the control group with traditional method of implementation were tested to find out whether there were any significant differences between their academic achievement and retention scores. The study was conducted on the 5th Grade students of Şehit İlbey Gülbey Elementary School, which is a state school with lower socio-economic level located within Şakirpaşa in Seyhan, Adana durind the 2004-2005 academic year fall semester. The students, who attended all the courses among those who participated in the study during the research, were accepted as subjects and the necessary analysis were performed just on the scores of those students. In this way, 63 students in total were defined as subjects, including the experimental group of 34 and the traditional academic group of 29. The application lasted 4 weeks and 25 hours. As a measuring tool, the "Success Test Towards Biodiversity, Pollution and Erosion Subject" developed by its researcher and its validity and reliability tests were completed, was given to both groups as pre-test, final test and retention test. The

findings of the research showed that there was a significant difference between the academic achievement and retention in terms of constructivist learning theory and the traditional teaching in terms of constructivist learning theory ($p < 0.0001$).

Sarıkaya (2006), examined the effectiveness of problem-based learning approach and learning cycle approach on the education towards environmental issues. Sarıkaya has conducted a study aimed at determining which one of the approaches between problem-based or learning cycle approach, compared to the traditional teaching methods, would lead to an increase in academic achievement and to determine the approach of students to these interactive teaching methods. In the study, three groups that was planned to use the traditional teaching, problem-based learning and the learning cycle approaches were determined randomly. Students in all three groups were trained by the researcher. As a result of statistical evaluation, problem-based learning method compared to traditional teaching method was found to increase the academic achievements of students in line with the learning cycle approach.

Küçükcankurtaran (2008), investigated the efficacy of using the internet in environmental education. It was emphasized that a student needs to encounter with the complex nature of the environment and needs to have the ability to seek solutions to people originated problems and noted that in order to gain these properties, the students should be active with the help of animation and simulations.

Taşkın & Özgür (2008), by performing group interviews with a total of 44 pre-school students with different socio-economic status, asked the students questions about the environment and the environmental concepts they want to live in. According to the survey, the children, between 0-6 age groups from different socio-economic status and different settlements, perceive the environmental concepts differently. While the children from higher income groups are aware of the fact that the environmental concept is a global or local problem, the children from families with low income levels seem to be far away from this awareness. In light of these findings, it was stated that in a pre-school education without a systematic

environmental program, relieving environmental education programs are needed to be given to the students. In this regard, on the 'environment and participation' report prepared under the National Environmental Action Plan, it was stated that the organizations providing pre-school education must increase their numbers in absolute terms and ensure that nearly 11 million children in the 0-6 age group benefit from the provision of environmental education, should ensure that the teachers employed in these schools learn to be sensitive to the environment through courses of in-service trainings, should perform issues related to the environmental field existing in pre-school training programs around school yards and let children experience them in their natural environment and address to the concepts from abstract to the concrete.

Güler (2009), aimed at determining in his study to investigate the effects of ecology-based environmental education on the teachers' views of environment and environmental education. Research data was gathered through interviews with participants for this purpose on the first and last day of nature education with qualitative research methods. Teachers stated that their pre-existing knowledge and skills in environmental education and the environment was insufficient. They also reported that they got multiple information regarding the nature of education as a result of environmental education. As a result of this research, teachers decided that they could do many activities in their areas on issues such as sharing their experiences with students and close circles, taking responsibility in bringing environmental awareness and stressed the importance and the need of nature to use as a laboratory.

Gökçe (2009), worked with a total of 88 people, 69 of those as classroom teachers and 19 of those as social studies teachers. First, teachers were informed on how to benefit from newspapers in lessons. Teacher candidates were asked to form groups in order to work on newspaper activity. Newspapers activity consisted of preparatory work, presentations and discussions and was completed in three weeks. During the preparatory work, students all cut newspaper reports, articles, pictures and cartoons related with environmental issues in class and pasted them on color fund paper.

Personal comments were written on the space left on the paper. They gave suitable titles to the material they created themselves and wrote slogans. Teacher candidates presented their studies in class after they were complete and discussed them. The studies were exhibited on boards and news on these issues were added on the boards during the semester. In the studies, it was identified that the students' sensitivity to the environment could be increased through newspapers, develop a sense of responsibility and a positive attitude. The findings obtained from the study indicates that the students' reading habits, research skills, critical thinking, creative thinking, empathetic thinking, problem solving skills and sense of responsibility could be developed, different perspectives could be gained, and the communication and collaboration between students could be increased.

Kışoğlu (2009), conducted a study with 60 teachers in order to examine the effects of student-centered activities implemented in the environmental course on environmental literacy level. The environmental health course under the Department of Biology Teaching, was given with the student-centered activities performed by the candidate teachers. The Environmental Literacy Scale, which consisted of sub dimensions applied to investigate the change in the environmental literacy level of teacher candidates, was administered at the beginning and end of the study. Also the students were interviewed at the end of the course and their views on lessons were asked. At the end of the study, the previous environmental literacy level of candidate teachers was found to be at a moderate level. However, the implementation of student-centered activities during the environmental courses was determined to significantly increase the level of environmental literacy of candidate teachers. Also the interviewed students stated that the activities applied in the course provide a better understanding of the environmental lessons.

Gökçe (2009), thought that newpapers could be utilized in achieving the objectives of environmental education in his research. In this research, how to benefit from the newspaper in the classroom in environmental education activities was explained and the vision of candidate teachers regarding the use of newspapers in environmental

education was given. 88 teachers attended this research from Anadolu University Classroom Teaching Education Faculty and Social Sciences Teaching. An open-ended questionnaire was used in the research. The data was analyzed by inductive analysis. According to the survey, it was observed that benefitting from newspapers under the learning-teaching environment has various additives on environmental education and the personal development of students.

Özdemir (2010), studied the impacts of "The Effects of Nature Experience-Based Environmental Education On the Perceptions and Behaviors of Elementary School Students' Toward Their Environment" environmental education program on the perceptions and behaviors of elementary school students towards the environment. The study was conducted on the basis of the conduct of experimental design with 2nd Grade elementary school students (n = 20), studying in a primary school in Muğla-Akyaka during the 2006/2007 education semester. Research data was gathered with the help of "environmental perception scale" developed by the researchers, the use of "environmental behavior observation form", instructing the students who participated to write "stories" and their analysis. At the end of the study, it was stated that the environmental values of students who participated in the application and the awareness of their deterioration, the concrete concern and reactions for environmental problems they face, and their environmentally responsible behavior tendencies are set to increase.

Gülay et al. (2010), with their "Analysis of MEB Preschool Education Program In terms of Environmental Education" study, intended not to analyze the objectives, benefits, concepts, specific days and weeks under MEB Preschool Education Program in terms of environmental education. When the program was examined, according to expert opinion, no aims and achievements were found in terms of psychomotor and language areas in environmental education in the field of development objectives in pre-school education programs. However, the objectives of the environment in the areas of social-emotional, cognitive, and self-care skills, was concluded to have 25,9% place within all the aims of the program. All of the gains related to

environmental education were determined to constitute 15.5%of gains. In addition, it was understood that 29.0% the concepts involved in the program and 26.3% of the days and weeks within the program was associated with environmental education.

Seçkin et al. (2010), in their study, candidates teachers were given an effective environmental education with an environmental course which allowed the students to active in lessons with a slightly different approach. In the study, the environmental education courses were carried out with an approach that was completely prepared by the creative skills of students in biology teaching department while it was carried out with conventional methods in classroom teaching department. At the end of the semester, the students' opinion about the course were evaluated qualitatively and quantitatively. Student-centered courses were shown to be significantly more effective in learning the concepts.

2.9.2. Researches Related to Environmental Literacy and Sub Dimensions

Although the studies related to environmental literacy in our country are limited, it can be said that in recent years, researchers started to show more interest and started to realise more discussions on the field.

Kuhlemeier et al. (1999), within the scope of their study "Environmental Knowledge, Behavior and Attitudes in Netherland Secondary Schools", worked with more than 206 secondary schools, 9000 students aged 15 years and older across the country. 57% of the students were found to have a very positive attitude towards the environment. Still, the students gave wrong answers to questions about the environmental problems. There was no significant relationship between environmental attitudes and knowledge.

Tikka et al. (2000), studied the effects of the students' educational background on their attitude towards their environment, degree of activity and knowledge. According to the findings, they observed that the female carry more responsibility to the environment than male students. The students of biology education fields scored higher as in attitude and knowledge, and that they were more willing to engage in

activities related to nature than the others. One of the results observed in this study was that those who were interested in technology and economy, showed negative attitudes and less interest in their environment.

Pooley & O'Connor (2000), applied their developed environmental attitude scale to 92 people with different educational backgrounds, aged between 18-55 years. They compared the findings obtained with the curriculum. They observed that the attitude and behaviors were neglected and mainly focused on the environmental knowledge ib the course.

Bradley et al. (2001), in their study that investigated the environmental attitudes and knowledge levels of high school students, the poll and test questions were applied to students before and afer a 10-day environmental science course. After the course, significant differences were determined both in the level of knowledge and attitude of students. 22% increase on the subject was determined in the knowledge levels of the students.

Yılmaz et al. (2002), applied a survey within the scope of the study to a total of 228 high school 3rd grade students studying at 6 different secondary schools. The results of the students showed that the students have insufficient knowledge about the environment, which mean particularly the environmental concepts within the scope of working not learned or taught enough. Accordingly, it was revealed that the students didnt have any information on the issues related to the environment. Yılmaz et al, (2002) applied a similar survey to candidate teachers studying at the university, and reached the same conclusion with some differences. It was seen that students studying at the university knew a lot more about environmental pollution compared to secondary school students and that they learned most of their knowledge about the environment through visual and written media.

Gayford (2002), conducted a study on the thoughts of teachers on environmental literacy in England. In this study, the participants shared their knowledge with a facilitator role by creating small groups of 5-6 people with 17 teachers from 4

different schools and having them operate efficiently. The difficulties of having science teachers add environmental literacy to the trainings were discussed. In science education programs, they defended the common opinion such as lack of expertise in the field of sustainable development issues and. in the field of sustainable education being a questionable case. The contribution of teachers to the environmental literacy were also discussed. Moreover, they evaluated strategies such as using newspaper stories in class, presenting the conflicting ideas of some scientists for environmental issues, role-playing, using the internet for different perspectives, allowing students to express their ideas, using some pictures and stories. As a result in the evaluation, it was expressed that science teachers could also provide good support to sustainable development.

Erten et al. (2003), did a survey that included the knowledge about the environment, the attitudes against the environment and the behaviors to protect the environment of 145 teachers in order to measure environmental literacy levels of pre-school teachers in terms of attitudes and behaviors and knowledge. In this study, while the attitudes and the environment knowledge of pre-school teachers candidates were at high levels in general, it was observed that many basic environmental knowledge of the candidates were not at accepteble levels. In addition, altought their knowledge and attitudes levels towards the environment were found to be high, it was observed that they did not demonstrate any environmentally responsible behaviors towards the environment. The researches showed that it will take time for positive attitudes to turn into behaviors. The stages of environmental literacy noted by Roth (1992) confirmed this study. Becase according to Roth (1992), the individual must experience the awareness first. Then, after experiencing anxiety and understanding stages, all the information and knowledge turns into behavior in time.

Şama (2003), investigated the Gazi Education Faculty students' "Attitudes of the University of Youth Towards Environment and Environmental Issues". He tried to identify cases that affected their attitudes towards the environment. According to the study, female students' attitudes towards the environment was more positive than

male students, that there was no significant difference between attitudes of the 1st and the 4th graders towards the environment, but he determined that students' attitudes points differ according to the departments they continue their education. No significant difference was found when the geographic areas students live in was examined to find its effects on their attitudes towards the environment. The father of students in professions with high reputations in the community was found to have a more positive attitude than others, and in the same way, fathers of students who have higher levels of education was found to have more positive attitudes than those with low education levels.

Kabaş (2004), in his "Environmental Knowledge and Education of Women Related to Environmental Issues" titled work; applied a training program in order to measure women's knowledge on environmental problems, their causes and the ways to prevent them and to cover missing or wrong information on needed topics. During the study, the same survey was applied to women before and after the education program. The success level of the education increased compared to pre education level.

Şahin et al. (2004), studied called "The Application Towards Higher Education Student-Centred Environmental Education Course", by giving student-centered environmental education to biology teachers, and giving environmental education courses with active instructors to classroom candidate teachers. It was revealed that student-centered courses were observed to be significantly more effective in learning the concepts.

Gezer & Erol (2006), conducted a study in order to determine the attitudes of classroom teachers and candidate teachers towards the environment and environmental issues. In their study, they also wanted to examine the variation in attitudes of the students' socio-economic characteristics. According to research findings it was determined that the students had generally weak attitudes towards the environment and environmental issues. Female students had higher attitudes than male students' attitudes towards environmental issues, and the profession of the

students' mother creates significant differences between attitudes towards their environment. While students' attitudes towards the environment showed significant differences by the number of siblings and their age, it was determined that their attitudes also differs according to the settlements they live in, the profession of their father, the educational level of their parents, the house they live in, their family income and the environmental lessons taken before.

Tuncer et al. (2006), applied a survey to 2311 candidate teachers studying in public universities in Ankara in order to determine their level of environmental literacy. According to the results, it was observed that the environmental knowledge levels were not at a desired level, but it was noted that 33.2% received a passing grade from the environmental knowledge test. The participants were seen to have positive attitudes towards the environment.

Gezer et al. (2006), compared the attitudes towards the environment of three different types of high schools students. At the end of the results of the study, it was observed that normal high school students had more positive attitudes than .Anatolian high schools and tourism high school students.

Ökesli (2008), in a research conducted to examine the environmental literacy of the 6th, 7th and 8th grade students studying in primary schools in Bodrum. environmental literacy survey with 49 questions was applied to 848 students studying in state schools. The percentage of environmental literacy dimensions (knowledge, attitudes, usage, and interest) of the students were analyzed in the study. After all, despite the fact that the students had poor knowledge level about environment, it was found that they had high interest and positive attitude towards the environment. Also the students related to environmental issues, knew to give importance, knew to think that they had good knowledge about the environment, students with parents with better information about environmental issues and participate in environmental activities were found to have better knowledge, positive attitudes, opinions, and interest. Ökesli's study also reached the conclusion that the parents had an influence

on environmental literacy of the students. This showed us that environmental literacy was affected by not only formal but also informal training.

İstanbullu (2008), applied an environmental literacy questionnaire that included questions about the four elements (knowledge, attitudes, usage, and interest) of environmental literacy to 681 6th Grade students studying in a private school in Ankara. 64% of the total students were found to take the average 8.2 points from 11 questions. It was observed that the students exhibited a positive attitude towards the environment and was found to be aware of the importance of the human-environment relationship. Also it was concluded that parents participation in environmental activities had positive effects on the attitudes, use and size of interest towards the environment of the environmental literacy.

Genç & Deniz (2008), conducted a study to find out attitudes dimension of environmental literacy. The purpose of this study was to identfy and to compare the environmental knowledge and attitudes of 3rd Grade studens of Classroom Teacher Department who took Environmental Science course, and 1st Grade students who did not take Environmental Science course. The study was conducted with 110 3rd Grade students and 110 1st Grade students studying in classroom teacher department. The environmental knowledge of the students' was measured with the "Field information Test" and their environmental attitudes was measured with the "Scale of Attitudes Towards Environment". The success of the 3rd Grades was significantly higher than the success of the 1st Grades. It was concluded that these high levels were due to the effect of taking the Environmental Science course in the second grade, but 69% of success was considered low despite having taken the Environmental Science course in third year. In the study, the average values of the attitudes of the 1st grades and 3rd grades in the study were found significantly close. When looked at the attitude of genders average, attitudes of women were found to be higher than the attitudes of men.

Zak & Munson (2008), asked primary school teachers to create concept maps related to 16 ecological grasps in order to determine their understanding of basic ecological concepts and to test the hypothesis that classroom teachers have a critical role in training environmentally literate individuals. On the concept maps, the organizations between concepts, their relations and the ways on how to identify those relationship were evaluated. It was seen that teachers focused on creating two sets of concepts on nutrition and ecosystem in general, and gave no ground for the concepts such as biotic and abiotic factors. At the end of the study, it was determined that candidate teachers had a solid understanding of the ecological concept before becoming a teacher.

Erdoğan & Ok (2008), studied the effect of pre-school education on environmental literacy. In this study where the effect of different variables on elementary students' environmental literacy levels are examined, environmental literacy scale developed by the researchers was applied to the 4th Grader and 5th Grader of 673 elementary school students. In the environmental literacy scale, questions in order to measure the six basic elements of environmental literacy (socio-political, ecological and environmental problems, knowledge, emotions, cognitive skills, responsible environmental behavior) were given. As a result, it was determined that gender had a significant impact on the environmental literacy. In addition, it was observed that the knowledge dimension of the environmental literacy differed on class, gender, type of school, pre-school education and income.

Erdoğan (2009), aimed at investigating the impact of demographics on responsible behavior towards the environment and to measure students' environmental literacy levels within the study conducted with the 5th Grade elementary students in different provinces. In this study, an Environmental Literacy Survey consisting five parts was applied. As a result, it was found that the environmental information and emotional tendencies of students were at high levels, and the responsible behavior and problem-solving skills at moderate levels.

Kışoğlu (2009), conducted a study with 60 teachers in order to examine the effects of student-centered activities implemented in the environmental course on environmental literacy level. The environmental health course under the Department of Biology Teaching, was given with the student-centered activities performed by the teachers candidates. The Environmental Literacy Scale, which consisted of sub dimensions applied to investigate the change in the environmental literacy level of teacher candidates, was administered at the beginning and at the end of the study. Also the students were interviewed at the end of the course and their views on lessons were asked. At the end of the study, the previous environmental literacy level of teacher candidates was found to be at a moderate level. However, the implementation of student-centered activities during the environmental courses is determined to significantly increase the level of environmental literacy of candidate teachers. Also the interviewed students stated that the activities applied in the course provided a better understanding of the environmental lessons.

Erdoğan et al. (2009), analyzed comparatively the implementation of the curriculum in primary schools in Bulgaria and Turkey, to find out how much importance was given in proportion to the six basic elements of environmental literacy. For this purpose, four from Bulgaria and one book from Turkey of science education were subjected to comparative content analysis and reviewed. The result about the science education books in both countries concluded that the elements that form the environmental literacy were not given an equal rate in both countries. In science education textbooks of the two countries , it was seen that while the environmental knowledge element of the environmental literacy was given a much greater emphasis, the others elements were ignored. For example, the activities that encouraged the students to participate in environmental protection activities, were not given much space in course books and during educational activities either.

Gökçe (2009), worked with a total of 88 people, 69 of those as classroom teachers and 19 of those as social studies teachers. First, teachers were informed on how to benefit from newspapers in lessons. Candidate teacher were asked to form groups in

order to work on newspaper activities. Newspaper activities; consisted of preparatory work, presentations and discussions and was completed in three weeks. During the preparatory work, students cut newspaper reports, articles, pictures and cartoons related to environmental issues in class and pasted them on the color fund paper. Personal comments were written on the space left on the paper. They gave suitable titles to the material they created themselves and wrote slogans. Candidates Teachers presented their studies in class after they completed and discussed them. The studies were exhibited on boards and news on these issues were added on the boards during the semester. In the studies, it was identified that the students' sensitivity to the environment could be increased through newspapers, develop a sense of responsibility and a positive attitude. The findings obtained from the study indicated that the students' reading habits, research skills, critical thinking, creative thinking, empathetic thinking, problem solving skills and sense of responsibility could be developed, different perspectives could be gained, and the communication and collaboration between students could be increased.

Üray & Şahin (2010), in their study on thoughts related to environmental education and academic staff, the participants expressed the problems experienced in environmental education as a system, methods and support problem. According to the results obtained in the study of Üray and Şahin (2010), most participants stated the weight applied on training being heavier than necessary and not providing the necessary motivation as a problem. The biggest problem of environmental education was having books full of information and the lowest level of environmental literacy being the knowledge element even though the courses were weighted on knowledge. This indicated that the environmental education classes were not given enough emphasis on or the courses were processed with wrong method or techniques. As the environmental education philosophy changes (training for environmental education rather than training about the environment), the strategies, methods and techniques used during trainings should turn to practice oriented, and the students should be

ensured to learn through experiential learning and experiences. Environmental education must be experiential, in so be an instructive experiment (Özdemir, 2007).

Kalıpçı et al. (2010), in their study, which measured the skill levels of environmental engineering students to practice their environment-related knowledges in daily life, observed that they use the knowledge they have on concerning issues associating with daily life, and turn them into environmentally friendly behaviours. It was stated that the environmental engineer candidates with no knowledge on the subject, did not have positive attitudes towards the environment. This research showed that the size of the environmental literacy skills was directly proportional to the level of environmental knowledge.

Günindi (2010), is the investigation of pre-school students' environmentally friendly behaviors. In the study, it was concluded that positive behavior could not turn into attitudes in a short time, but it took time, and so was introducing children to environmentally friendly behaviors at an early age was very important. It was also emphasized that the eco-friendly preschool teachers, who also played an important role in bringing the action, should combine their attitude and behaviors towards the environment with knowledge and to show that they are at the highest level.

Köse (2010), applied a knowledge test consisting of 15 questions and an attitude test consisting of 38 questions to 100 high school students in order to measure the attitude and knowledge elements of environmental literacy. There were only two students who had a maximum of 10 correct answers in the knowledge test. In the survey conducted with teachers, it was observed that not enough time was given to use the laboratory facilities and open field studies on the environment, that the programs used were not up to date, and that training individuals with environmental awareness were not enough. A significant difference was observed in the longest place of residence unit, the level of knowledge, which was one of the factors that may affect the attitude of the students, their parents' protectionist behavior towards the environment. An

improvement in attitudes of the students towards the environment was determined with higher education level of the parents.

Timur (2011), conducted a descriptive study with 586 science teachers in order to determine the "environmental literacy" levels of science teachers and the factors affecting the level of environmental literacy. Research findings showed the environmental knowledge level of teachers as medium, the levels of the environmental attitudes as high and the environmental behavior level as moderate. In addition, the findings indicated that the overall environmental literacy of teachers were at moderate levels. The analysis results of the relationship between demographic variables and the environmental knowledge, attitude and behavior scores of teacher candidates showed that the factors that affect teachers' knowledge levels were based on the overall academic average, father's occupation, mother's education level and age the factor affecting the attitudes was based on gender, and the factors influencing their behavior towards the environment were based on gender and parental education status.

Karatekin & Aksoy (2012), within the scope of the work they intended to determine the environmental literacy level of social studies teachers and to carry out an assessment of the various variables, they implemented an environmental literacy survey, consisting of "Information, emotional tendencies, behavior and cognitive skills" components, to 1587 candidate teachers studying at every grade level under Social Studies Teaching Departments of Education Faculties of six different universities in Turkey. At the results of this research, environmentally literatacy levels of the social studies teachers were found to be moderate level. While the income had no evident effect on the environmental literacy of candidate teachers; the gender, level of environmental curiosity, presence of environmentally conscious individuals in the family, the frequency of natural areas, the frequency of participation in environmental activities and the variable of taking environmental education course at the university was shown to be effective.

CHAPTER III
METHODS

3.1. Research Model

The model of the study titled "Determination of the University Student's Environmental Literacy Level", its scope and sampling, data collection tool, the implementation of data collection tool and the descriptions related with the analysis of those collections are mentioned in this section (Gall et al, 2003).

"Relational Screening Model" is used in this survey which was conducted about the knowledge level of university students' environmental literacy (knowledge, attitude, behavior) In a correlative model, determining the presence or degree of change between two or more large number of variables is aimed (Karasar, 2009).

3.2. Research Scope and Sampling

The scope of research is formed by university students and its sampling was formed by 400 students receiving education during the 2015-2016 year. The distribution of students studying in universities are given in Table 1.

Table 1. Participant Status

Country	No of Students
Nigerian	100
Pakistanian	100
Libyan	100
Turkish	100
Total	**400**

3.3. Data Collection Tool and Its Improvement

In this study, "Environmental Knowledge Test", "Attitudes Towards the Environment" and "Behavior Towards the Environment" scales were used as a data collection tool. The literature (theses, articles, papers, books, etc.) on the subject of improving the data collection tool developed by researchers, creating the basic structure of the research, was

examined in order to reach the designated research purposes and the main frame was formed with the conceptual structure of the data collection tool.

3.4. Scoring of The Scale Article and Its Classification

The level of information according to the environmental education of the students who participated in the study has been raised observed through "Five Point Likert Scale" and interpreted. This scoring and grading of scale materials adopted for research is in shown in Table 2.

Table 2: Scoring And Grading of the Scale Materials

Scale	Rating	Avarage Weight	Percentage Weight
Completely Don't Agree	5	4.20-5.00	% 84.01-% 100.00
Don't Agree	4	3.40-4.20	% 68.01-% 84.00
Undecided	3	2.60-3.40	% 52.01-% 68.00
Agree	2	1.80-2.60	% 36.01-% 52.00
Completely Agree	1	1.00-1.80	% 20.00-% 36.00

"One-way analysis of variance" (ANOVA) test was used to find out if there was a significant difference in the responces given to the attitude and comment tests by the particinapt of the survey. "p = 0.05" level is based on the significance tests carried out between groups.

3.5. Reliability and Validity

"Cronbach Alpha Value", which is the reliability coefficients with for the reliability studies of Data Collection Tool, is calculated. The substances that may reduce the Alpha value from the scale was removed and the final version of the scale was created. Expert opinions were taken to determine the validity and scope of the scale, the expression was sought to be written in a clear and understandable language while creating statements regarding the dimensions, and means of expression which could lead to confusion was avoided.

Table 3. Reliability of Environmental Attitudes Scale

Cronbach's Alpha	N of Items
,721	18

Table 4. Reliability of Environmental Behavior Scale

Cronbach's Alpha	N of Items
,674	20

The current base percentages on the validity and reliability of the scale of environmental attitudes and behaviors that provide data are given in Tables 2 and 3. Gronbach Alpha reliability coefficient of Environmental Attitudes was found to be 721, while Gronbach Alpha reliability coefficient of the Environmental Behavior Scale was found to be 674. These values were considered adequate in terms of reliability of the scale value in the literature.

3.6. Data Analysis

Students' responses given to the questionnaires as Data Collection Tool were analyzed in quantitative methods. In quantitative research, quantitative measurements or experimental methods are used to test hypothetical generalizations with positivist approach. As a reflection of the positivist approach, quantitative research reality was seen as an objective existing independently and outside of the individual. Positive science is considered to be a single, objective reality. Therefore, the purpose of quantitative method of research; was to discover rights independent of time people, culture, and to generalize them with universal laws (Kuş, 2003).

Survey data obtained from the computer were analyzed using SPSS 20.0 (Statistical Packet For Social Sciences) program. Unbound "T" test was used in determined the levels of students' environmental literacy (knowledge, attitude, behavior) participating in the research according to gender, and ANOVA, Duncan's test was used in determining that varies according to their class and economic situation.

CHAPTER IV
FINDINGS AND COMMENTS

This section consists of the research findings, tables and interpretations of the findings.

4.1. Demographics Features

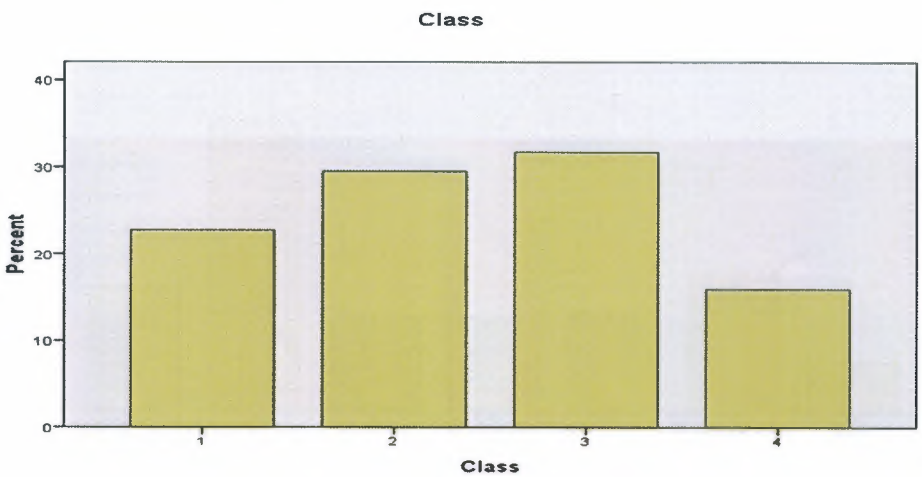
The findings and comments based on the question of demographics features can be found in this section.

Table 5. Distribution of the Sample According to Grade Levels.

		Frequency	Percent (%)
Class	1st class	91	22,8
	2nd class	118	29,5
	3rd class	127	31,8
	4th class	64	16,0
	Total	**400**	**100,0**

When looked at Table 5, we see that 22.8% are in 1st Grade, 29,5% are in 2nd Grade, 31,8% are in 3rd Grade and 16% of the students consisting the sampling are in 4th Grade.

Figure 2. Percentage of the Sample According to Grade Levels.



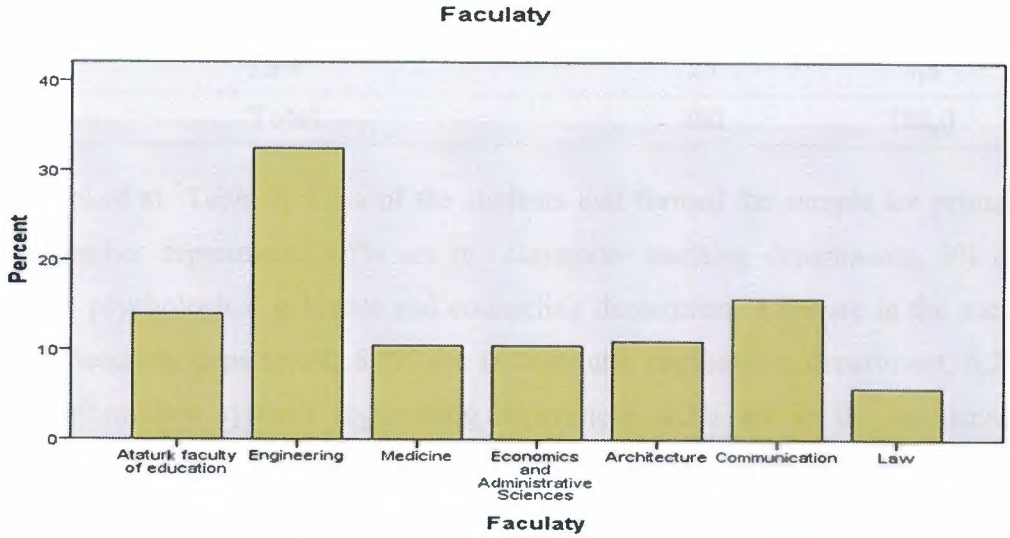
When looked at Figure 2, we see that most of the students, aka 31,8% are in their 3rd year.

Table 6. Distribution of the Sample According to Faculties

		Frequency	Percent (%)
Faculaty	Ataturk faculty of education	56	14,0
	Engineering	130	32,5
	Medicine	42	10,5
	Economics and Administrative Sciences	42	10,5
	Architecture	44	11,0
	Communication	63	15,8
	Law	23	5,8
	Total	**400**	**100,0**

As seen in Table 6, 14% of the sdtudents are from Atatürk education faculty, 15% from medical school, 32.5% from the engineering faculty, 10.5% from medical school, 10.5% from administrative sciences, 11% from architecture faculty, 15.8% from communication faculty and 5.8% from law school. In the distribution of the sample according to the faculties, the number of faculty of engineering students is higher than those in other faculties.

Figure 3. Percentage of the Sample According to Faculties.



When looked at Figure 3, we see that most of the students, aka 32,5% are studying in engineering faculty.

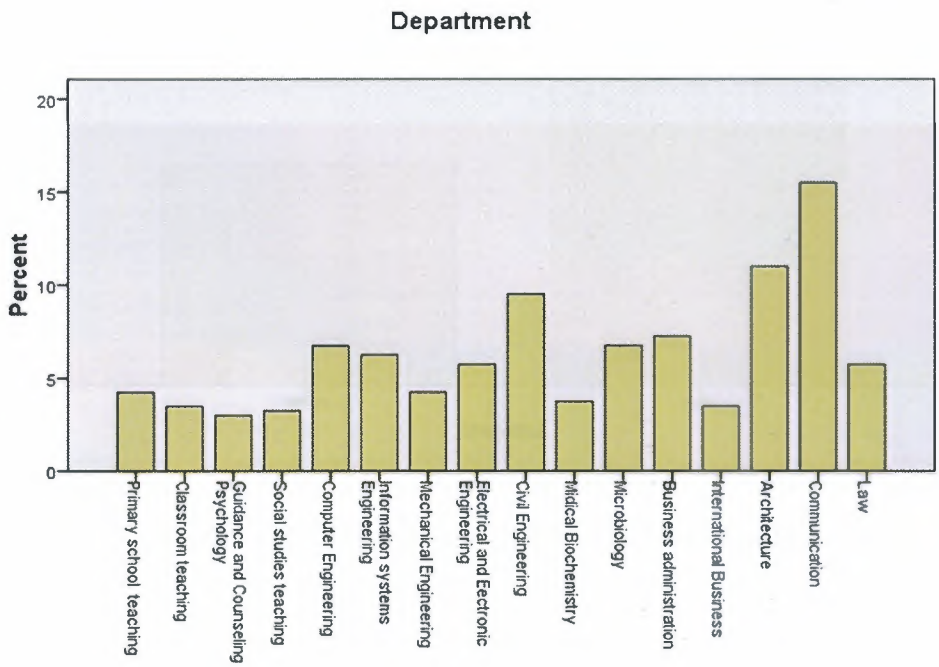
Table 7. Distribution of the Sample According to Departments

		Frequency	Percent (%)
Department	Primary school teaching	17	4,2
	Classroom teaching	14	3,5
	Guidance and Counseling Psychology	12	3,0
	Social studies teaching	13	3,2
	Computer Engineering	27	6,8
	Information systems Engineering	25	6,2
	Mechanical Engineering	17	4,2
	Electrical and Eectronic Engineering	23	5,8
	Civil Engineering	38	9,5
	Midical Biochemistry	15	3,8
	Microbiology	27	6,8
	Business administration	29	7,2
	International Business	14	3,5
	Architecture	44	11,0
	Communication	62	15,5
	Law	23	5,8
	Total	**400**	**100,0**

When looked at Table 7, 4.2% of the students that formed the sample are primary school teacher department, 3.5% are in classroom teaching departments, 3% are under the psychological guidance and counseling department, 3.2% are in the social sciences teaching department, 6,8% are in computer engineering department, 6,2% are in information systems engineering department, 4,2% are in the mechanical engineering department, 5,8% are in electrical and electronic engineering department, 9,5% are in the civil engineering department, 3,8% are in the medical biochemistry

department, 6,8% are in microbiology depatment, 7,2% are in the business department, 11% are in the architecture department, 15.5% are in communications department, 5.8% are in law department. In the distribution of the sample according to the faculties, the number of communication department (15,5%) students is higher than those in other departments.

Figure 4. Percentage of the Sample According to Departments



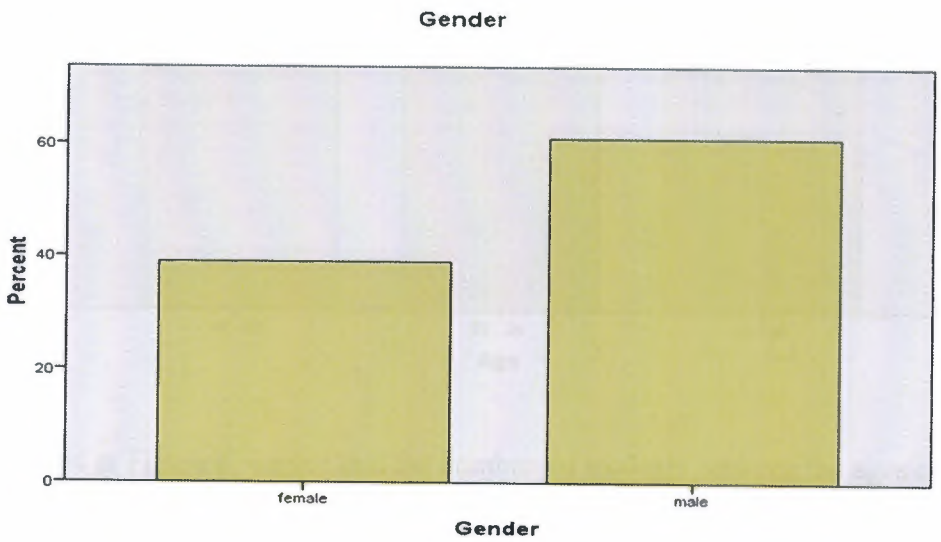
When looked at Figure 4, we see that most of the students, aka 15,5% are in the communication department.

Table 8. Distribution of the Sample According to Genders

		Frequency	Percent (%)
Gender	Female	156	39,0
	Male	244	61,0
	Total	**400**	**100,0**

As seen in Table 8, total of 400 people participated in the study, 39% of these participants are female and 61% are male. In the distribution of sample by gender, we see that the number of male are more than the number of females.

Figure 5. Percentage of the Sample According to Gender



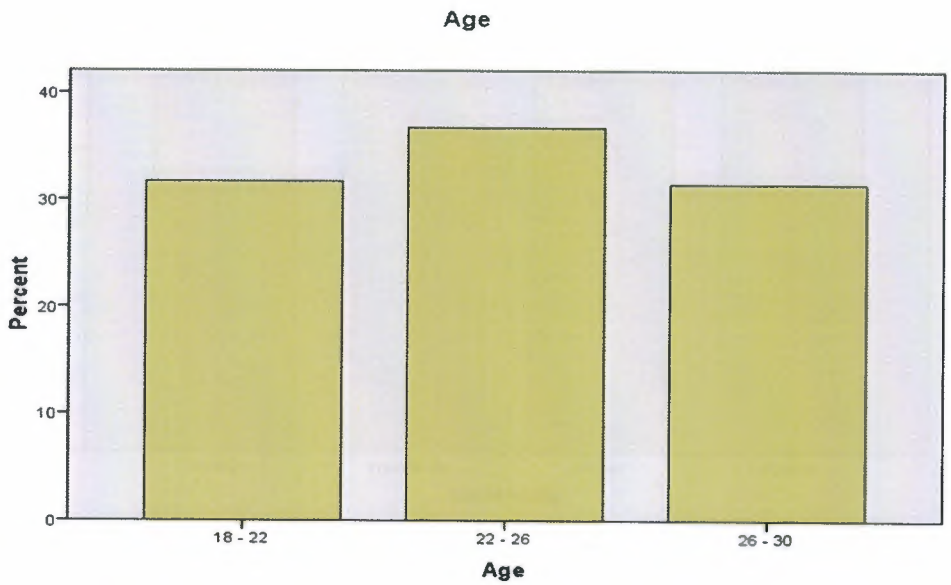
As seen in Figure 5, most of the students who participated in the survey are male.

Table 9. Distribution of the Sample According to Age

		Frequency	Percent (%)
Age	18 – 22	127	31,8
	22 – 26	147	36,8
	26 – 30	126	31,5
	Total	**400**	**100,0**

When looked at Table 9, we see that 31.8% of the the students who made up the sample is between the ages of 18-22, 36.8% is between the ages of 22-26 and 31.5% is between the ages of 26-30. In the distribution of the sample by age, we see that the the number of students between the ages of 22-26 are more than other age groups.

Figure 6. Percentage of the Sample According to Age



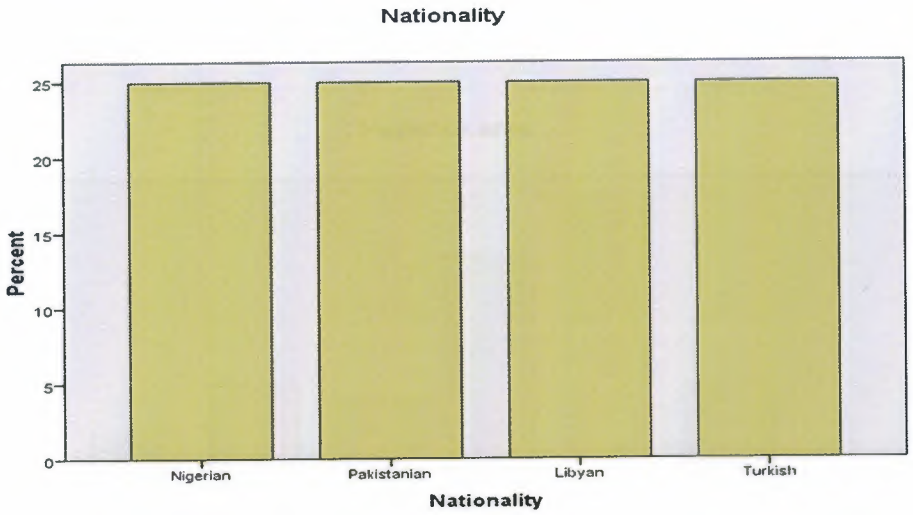
When looked at Figure 6, we see that the number of students between the ages of 22-26, is more than others.

Table 10. Distribution of the Sample According to Nationalities

		Frequency	Percent
Nationality	Nigerian	100	25,0
	Pakistanian	100	25,0
	Libyan	100	25,0
	Turkish	100	25,0
	Total	**400**	**100,0**

In Table 10, we see that the 25% of the students are Nigerian, 25% are Pakistani, and 25% are Libyan, and 25% are Turkish.

Figure 7. Percentage of the Sample According to Nationalities



When looked at Figure 7, we see that equal number of students ((%25) 100x4=400) participated in the survey.

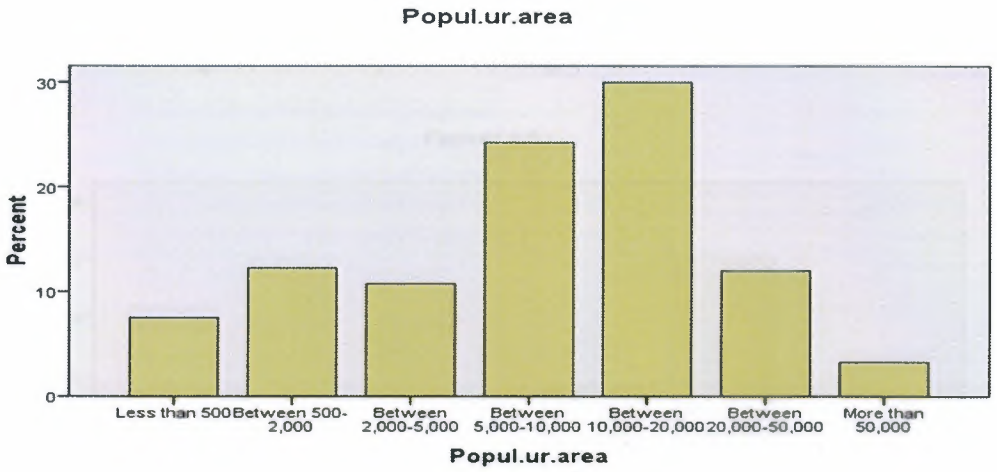
Table 11. Distribution of the Sample According to Population

		Frequency	Percent
Population	Less than 500	30	7,5
	Between 500-2,000	49	12,2
	Between 2,000-5,000	43	10,8
	Between 5,000-10,000	97	24,2
	Between 10,000-20,000	120	30,0
	Between 20,000-50,000	48	12,0
	More than 50,000	13	3,2
	Total	**400**	**100,0**

As shown in Table 11, when looked at the distribution of the sample population, we see that %7,5 is less than 500, 12,2% is between 500-2000, 10,8% is between 2000-5000, 24.2% is between 5000-10.000, 30% is between 10.000-20.000, 12% is beween 20.000-50.000, 3.2% is more than 50,000. When we look at the distribution of the

population based on the sample, we see that it is between the numbers of 10,000-20,000.

Figure 8. Percentage of the Sample According to Population



In Figure 8, we see that the distribution of population is between 10,000-20,000 (30%).

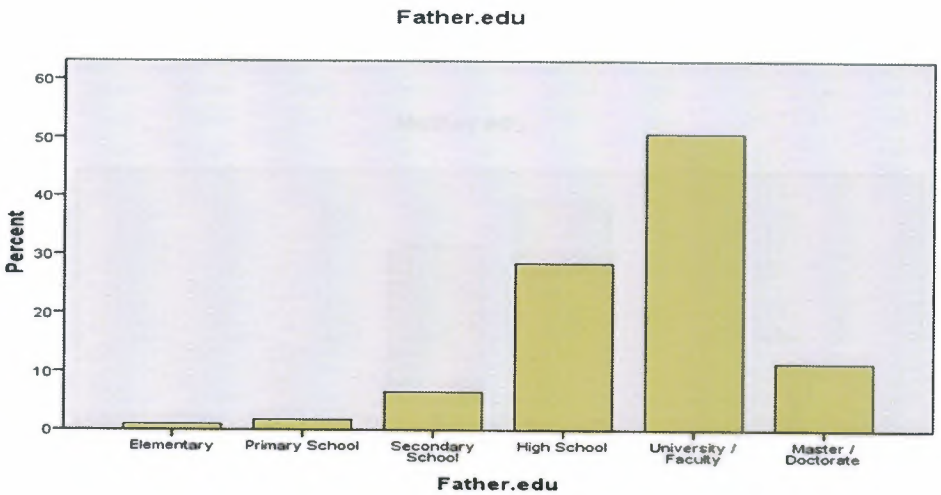
Table 12. Distribution of the Sample According to the Education Status of Fathers

		Frequency	Percent
Father's Education	Elementary	4	1,0
	Primary School	7	1,8
	Secondary School	26	6,5
	High School	114	28,5
	University / Faculty	203	50,8
	Master / Doctorate	46	11,5
	Total	**400**	**100,0**

As seen from Table 12, 1% of the fathers of the students in the sample have primary school education, 1.8% have secondary school education, 6.5% have high school education, 28.5% have college education, 50.8% have license education and 11.5 %

have master's and doctorate education. When we look at the distribution of the sample of fathers according to educational level, we see that fathers are mostly university graduates. The least distribution of the sample is (1%) primary school education, while the most (50.8%) are university graduates.

Figure 9. Percentage of the Sample According to the Education Status of Fathers



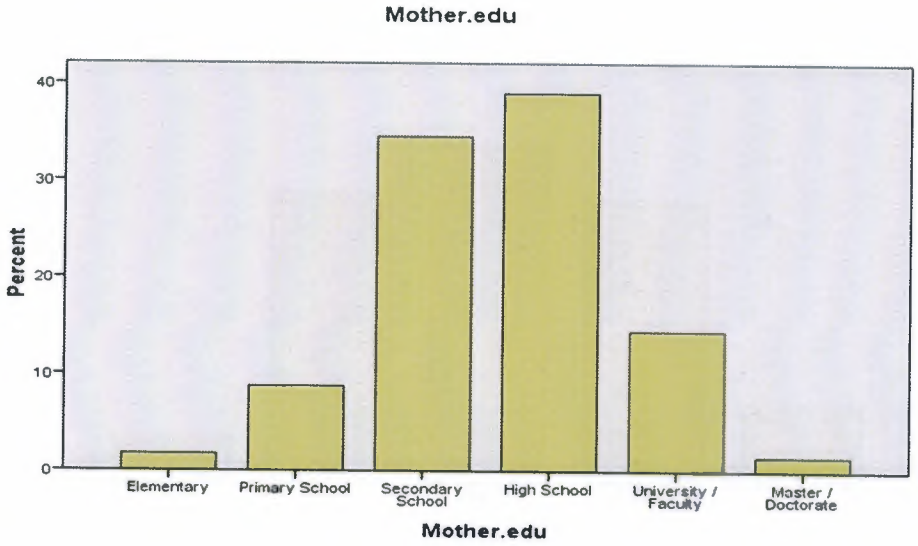
When we look at the distribution of samples according to the father's education status in Figure 9, we see that the fathers are mostly university graduates. The least distribution of the sample consists of the primary school education (1%), while most of them (50.8%) are university graduates.

Table 13. Distribution of the Sample According to the Education Status of Mothers

		Frequency	Percent
Mother's Education	Elementary	7	1,8
	Primary School	35	8,8
	Secondary School	138	34,5
	High School	156	39,0
	University / Faculty	58	14,5
	Master / Doctorate	6	1,5
	Total	**400**	**100,0**

As seen in Table 13, 1,1% of the mothers of the students in the sample have primary school education, 8.8% have secondary school education, 34.5% have high school education, 39% have college education, 14,5% have license education and 1.5% have master's and doctorate education. The least distribution of the sample is (1,5%) master's and doctorate education, while the most (39%) are university graduates.

Figure 10. Percentage of the Sample According to the Education Status of Mothers



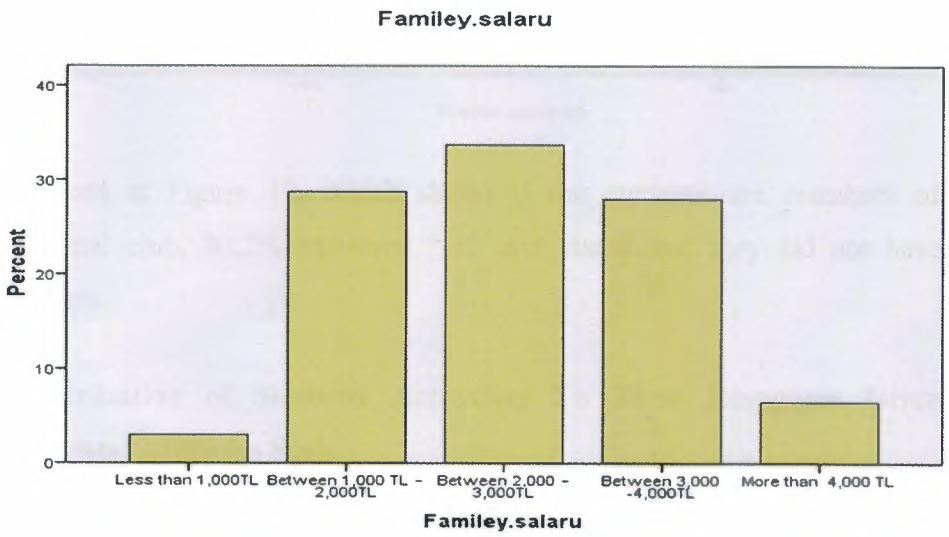
In Figure 10, the least distribution of the sample consists of the masters and doctorate education (1,5%), while most of them (50.8%) have university education.

Table 14. The Percentage of the Students' Family is Average Monthly income

		Frequency	Percent (%)
Family Monthly Salary	Less than 1,000TL	12	3,0
	Between 1,000 TL – 2,000TL	115	28,8
	Between 2,000 – 3,000TL	135	33,8
	Between 3,000 -4, 000TL	112	28,0
	More than 4,000 TL	26	6,5
	Total	**400**	**100,0**

As it can be seen in Table 14, 3% have less than 1000 TL, 28,8% have between 1.000-2.000 TL, 33,5% have between 2.000-3.000 TL, 28% have 3.000-4.000 TL, 6,5% have more than 4000TL monthly family income. When looked at the distribution of monthly incomes, we see that the monthly family income of the sample distribution is 1,000TL (3%) the lowest, and 2000-4000 TL (33.8%) the highest.

Figure 11. The Percentage of The Students' Average Monthly Family Incomes



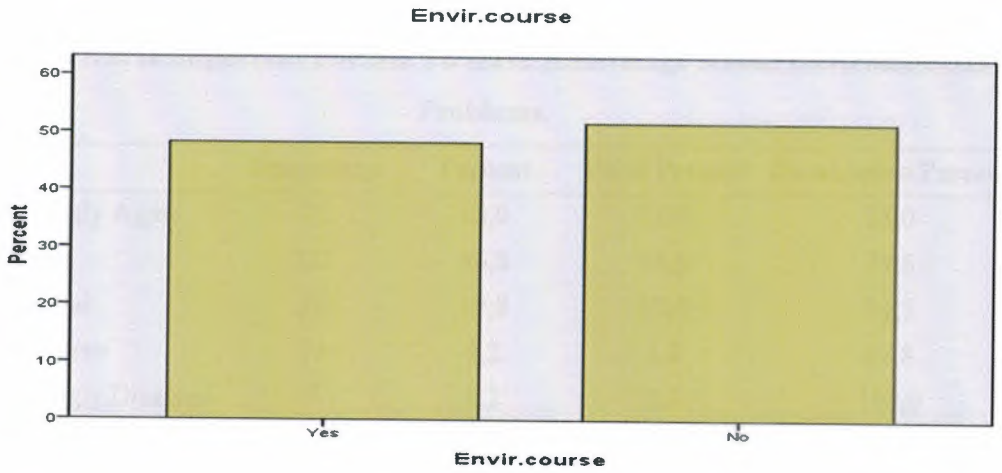
When looked at Figure 11, we see that the monthly family income of the sample distribution is 1,000TL (3%) the lowest, and 2000-4000 TL (33.8%) the highest.

Table 15. The Percentage of The Students Taking Environment Courses

		Frequency	Percent (%)
Environmental Course	Yes	193	48,2
	No	207	51,8
	Total	**400**	**100,0**

When looked at Table 15, which shows if the students take any environmental courses, 48,2% answered "Yes" and 51,8% answered "No" .

Figure 12. The Percentage of The Students Taking Environment Courses



When looked at Figure 12, which shows if the students are members of any environmental club, 80,2% answered "no" and stated that they did not have any memberships.

4.1.1. Distribution of Students According To Their Responses Given To Environmental Attitudes Scale

The distribution of the participants according to the responses given to environmental attitude scale are given in the table below.

Table 16. I Like Watching Television Programs About The Environment.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	155	38,8	38,8	38,8
Agree	176	44,0	44,0	82,8
Neutral	35	8,8	8,8	91,5
Disagree	9	2,2	2,2	93,8
Strongly Disagree	25	6,2	6,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 16, given by participants to the question *"I like watching television programs about the environment"*, we see that 38,8% completely

agreed, 44% agreed, 8,8% undecided, 2,2% disagreed and 6,2% completely disagreed.

Table 17. It is Important For Me To Have Knowledge About Environmental Problems.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	72	18,0	18,0	18,0
Agree	227	56,8	56,8	74,8
Neutral	79	19,8	19,8	94,5
Disagree	13	3,2	3,2	97,8
Strongly Disagree	9	2,2	2,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 17, given by participants to the question *"It is important for me to have knowledge about environmental problems"*, we see that 18% completely agreed, 56,8% agreed, 19,8% undecided, 3,2% disagreed and 2,2% completely disagreed.

Table 18. It Worries Me That The Forests Are Rapidly Disappearing.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	89	22,2	22,2	22,2
Agree	202	50,5	50,5	72,8
Neutral	60	15,0	15,0	87,8
Disagree	37	9,2	9,2	97,0
Strongly Disagree	12	3,0	3,0	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 18, given by participants to the question *"It worries me that the forests are rapidly disappearing"*, we see that 22,2 % completely agreed, 50,5% agreed, 15% undecided, 9,2% disagreed and 3% completely disagreed.

Table 19. I Think Everyone Should Be Worried About The Ozone Layer Problem.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	101	25,2	25,2	25,2
Agree	178	44,5	44,5	69,8
Neutral	65	16,2	16,2	86,0
Disagree	32	8,0	8,0	94,0
Strongly Disagree	24	6,0	6,0	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 19, given by participants to the question *"I think everyone should be worried about the the ozone layer problem"*, we see that 25,2 % completely agreed, 44,5% agreed, 16,2% undecided, 8% disagreed and 6% completely disagreed.

Table 20. I Think Legal Obstacles on The Use of Fossil Fuels Should Be Removed.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	79	19,8	19,8	19,8
Agree	134	33,5	33,5	53,2
Neutral	110	27,5	27,5	80,8
Disagree	57	14,2	14,2	95,0
Strongly Disagree	20	5,0	5,0	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 20, given by participants to the question *"I think legal obstacles on the use of fossil fuels should be removed"*, we see that 19,8% completely agreed, 33,5% agreed, 27,5% undecided, 14,2% disagreed and 5% completely disagreed.

Table 21. I Want to Help to Prevent Environmental Problems.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	71	17,8	17,8	17,8
Agree	137	34,2	34,2	52,0
Neutral	108	27,0	27,0	79,0
Disagree	54	13,5	13,5	92,5
Strongly Disagree	30	7,5	7,5	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 21, given by participants to the question *"I want to help in preventing environmental problems"*, we see that 17,8% completely agreed, 34,2% agreed, 27% undecided, 13,5% disagreed and 7,5% completely disagreed.

Table 22. I Believe That My Behavior Will Contribute To The Prevention of Environmental Problems.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	72	18,0	18,0	18,0
Agree	131	32,8	32,8	50,8
Neutral	99	24,8	24,8	75,5
Disagree	58	14,5	14,5	90,0
Strongly Disagree	40	10,0	10,0	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 22, given by participants to the question *"I believe that my behavior will contribute to the prevention of environmental problems"*, we see that 18% completely agreed, 32,8% agreed, 24,8% undecided, 14,5% disagreed and 10% completely disagreed.

Table 23. I Feel Responsible For The Prevention of Environmental Problems.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	66	16,5	16,5	16,5
Agree	131	32,8	32,8	49,2
Neutral	99	24,8	24,8	74,0
Disagree	60	15,0	15,0	89,0
Strongly Disagree	44	11,0	11,0	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 23, given by participants to the question *"I feel responsible for the prevention of environmental problems"*, we see that 16,5% completely agreed, 32,8% agreed, 24,8% undecided, 15% disagreed and 11% completely disagreed.

Table 24. Environmental Programs Made By Mass Media Programs, Change My Attitude Towards The Environment.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	57	14,2	14,2	14,2
Agree	142	35,5	35,5	49,8
Neutral	102	25,5	25,5	75,2
Disagree	57	14,2	14,2	89,5
Strongly Disagree	42	10,5	10,5	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 24, given by participants to the question *"Environmental programs made by mass media programs, change my attitude towards the environment"*, we see that 14,2% completely agreed, 35,5% agreed, 25,5% undecided, 14,2% disagreed and 10,5% completely disagreed.

Table 25. The Idea of Environmental Protection Is Fabricated By Westerners To Prevent The Growth of Developing Countries.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	60	15,0	15,0	15,0
Agree	94	23,5	23,5	38,5
Neutral	115	28,8	28,8	67,2
Disagree	69	17,2	17,2	84,5
Strongly Disagree	62	15,5	15,5	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 25, given by participants to the question *"The idea of environmental protection is fabricated by Westerners to prevent the growth of developing countries"*, we see that 15% completely agreed, 23,5% agreed, 28,8% undecided, 17,2% disagreed and 15,5% completely disagreed.

Table 26. Mankind Has The Right To Make Changes To The Environment In Order To Meet Their Needs.

	Frequency	Percent	Valid Percent	Cumulative Percent
Strongly Agree	72	18,0	18,0	18,0
Agree	90	22,5	22,5	40,5
Neutral	119	29,8	29,8	70,2
Disagree	55	13,8	13,8	84,0
Strongly Disagree	64	16,0	16,0	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 26, given by participants to the question *"Mankind has the right to make changes to the environment in order to meet their needs"*, we see that 18% completely agreed, 22,5% agreed, 29,8% undecided, 13,8% disagreed and 16% completely disagreed.

4.1.2. Distribution of the Answers Given By The Students To Environmental Behavior Scale.

The distribution of responses given to the environmental behavior scale by participants is shown in the following table:

Table 27. I Dont Buy Packaged Products.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	68	17,0	17,0	17,0
Occasionally	283	70,8	70,8	87,8
Always	49	12,2	12,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 27, given by participants to the question *"I dont buy packaged products"*, we see that 17% responded as Never, 70,8% responded as Occasionally, and 12,2% responded as Always.

Table 28. I Turn Off The Lights And Electrical Appliances That I Don't Use To Save Electricity".

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	88	22,0	22,0	22,0
Occasionally	230	57,5	57,5	79,5
Always	82	20,5	20,5	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 28, given by participants to the question *"I turn off the lights and electrical appliances that i dont use to save electricity"*, we see that 22% responded as Never, 57,5% responded as Occasionally, and 20,5% responded as Always.

Table 29. When I See People With Harmful Behaviors Towards The Environment, I Try To Talk To Them About Behaviors.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	87	21,8	21,8	21,8
Occasionally	240	60,0	60,0	81,8
Always	73	18,2	18,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 29, given by participants to the question "When i see people with harmfull behaviors towards the environment,I try to talk to them about those behaviors", we see that 21,8% responded as Never, 60% responded as Occasionally, and 18,2% responded as Always.

Table 30. I Try To Be A Positive Example To My Friends on Environmentally Conscious Behaviors.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	100	25,0	25,0	25,0
Occasionally	217	54,2	54,2	79,2
Always	83	20,8	20,8	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 30, given by participants to the question *"I try to be a positive example to my friends on environmentally conscious behaviors"*, we see that 25% responded as Never, 54,2% responded as Occasionally, and 20,8% responded as Always.

Table 31. I Support Candidates Who Are Interested in Environmental Problems During Elections.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	99	24,8	24,8	24,8
Occasionally	194	48,5	48,5	73,2
Always	107	26,8	26,8	100,0
Total	400	100,0	100,0	

When looked at the answers on Table 31, given by participants to the question *"I support candidates who are interested in environmental problems during elections"*, we see that 24,8% responded as Never, 48,5% responded as Occasionally, and 26,2% responded as Always.

Table 32. I Throw Wastes Such As Newspaper, Glass or Metal Box Into The Recycle Bin.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	101	25,2	25,2	25,2
Occasionally	206	51,5	51,5	76,8
Always	93	23,2	23,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 32, given by participants to the question *"I throw wastes such as Newspaper, glass or metal box into the recycle bin"*, we see that 25,2% responded as Never, 51,5% responded as Occasionally, and 23,2% responded as Always.

Table 33. I Do Not Buy Products With Negative Environmental Impacts.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	106	26,5	26,5	26,5
Occasionally	174	43,5	43,5	70,0
Always	120	30,0	30,0	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 33, given by participants to the question *"I do not buy products with negative environmental impacts"*, we see that 26,5% responded as Never, 43,5% responded as Occasionally, and 30% responded as Always.

Table 34. I Talk to Friends and Families About What We Can Do To Prevent Environmental Problems.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	97	24,2	24,2	24,2
Occasionally	194	48,5	48,5	72,8
Always	109	27,2	27,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 34, given by participants to the question *"I talk to with friends and Families about what we can do to prevent environmental problems"*, we see that 24,2% responded as Never, 48,5% responded as Occasionally, and 27,2% responded as Always.

Table 35. I Read the Articles About the Environment in Newspapers And Magazines

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	108	27,0	27,0	27,0
Occasionally	191	47,8	47,8	74,8
Always	101	25,2	25,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 35, given by participants to the question *"I read the articles about the environment in newspapers and magazines*", we see that 27% responded as Never, 47,8% responded as Occasionally, and 25,2% responded as always.

Table 34. I Talk to Friends and Families About What We Can Do To Prevent Environmental Problems.

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	97	24,2	24,2	24,2
Occasionally	194	48,5	48,5	72,8
Always	109	27,2	27,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 34, given by participants to the question *"I talk to with friends and Families about what we can do to prevent environmental problems"*, we see that 24,2% responded as Never, 48,5% responded as Occasionally, and 27,2% responded as Always.

Table 35. I Read the Articles About the Environment in Newspapers And Magazines

	Frequency	Percent	Valid Percent	Cumulative Percent
Never	108	27,0	27,0	27,0
Occasionally	191	47,8	47,8	74,8
Always	101	25,2	25,2	100,0
Total	**400**	**100,0**	**100,0**	

When looked at the answers on Table 35, given by participants to the question *"I read the articles about the environment in newspapers and magazines"*, we see that 27% responded as Never, 47,8% responded as Occasionally, and 25,2% responded as always.

4.2. Findings Based on Sub-Problems

The followings are the sub-problems of the study based on the problem sentence mentioned above.

4.2.1. The Environmental Attitude and Behavior Levels of University Students

Table 36. The Comparison between the Environmental Attitude and Behavior Levels of University Students

		Sum of Squares	Df	Mean Square	F	p	Explanation
Environmental Attitude	Between Groups	20,566	3	25,215	1,09	,043	P>.05
	Within Groups	43947,373	294	82,731			
	Total	43531,151	298				
Environmental Behaviour	Between Groups	40,389	3	52,216		,567	P<.05
	Within Groups	15304,701	295	43,712			
	Total	15115,117	299				

As seen in Table 36, there is a significant difference in the environmental attitudes (p =, 043) among university students (P <.05). But no significant difference was observed in the environmental behavior of the participants (p =, 567).

4.2.2.The Relationship between the Environmental Knowledge Levels of University Students

19 questions were asked to the students within the scope of Environmental Knowledge Test. The data obtained from the results of the Environmental Knowledge Test (the results of the participants' responses to environmental knowledge questions) are presented in the table below.

Table 37. Comparison of the Answers Given By Students to the Questions about Environmental Knowledge by Grades

Articles	Correct Answer Percentage				Sig. (%5)
	1.Grade	2.Grade	3.Grade	4.Grade	
1.Which of the following is not included in the hazardous waste class? *(Spoilt foods)*	,359	,216	,441	,083	,041
2.Ozone, located in the upper atmosphere protects us against which of the following? *(Ultraviolet rays coming from the sun)*	,142	,216	,083	,225	,164
3.Chlorofluorocarbon gas ..... *(Causes a depletion of the atmospheric ozone layer)*	,168	,227	,006	,052	,146
4.Which of the following are examples of non-construction noise? *(Washing machine)*	,047	,032	,144	,097	,828
5.Which ofn the following arethe most sensitive cells of the human bod against radiation?*(Lymph node and spleen cells in blood).*	,061	,212	,273	,003	,178
6.Which of the following is the most sensitive aquatic environment against pollution? *(Streams)*	,360	,045	,176	,230	,175
7.All living organisms living in a particular region of the forest has same..... live / have been / are used. *(Habitat)*	,080	,002	,039	,041	,952
8) Which of the following is the measurement unit of noise? *(Decibel)*	,173	,165	,008	,266	,078
9.Which of the following is not true about the world human population? *(A majority of the world's population lives in developed countries)*	,021	,012	,099	,111	,037
10.Which of the following are the most important causes of pollution of groundwater? *(The use of agricultural fertilizer)*	,138	,018	,175	,219	,050
11.Rate of extinction of living species, has reached the highest level in the period up to the present time from the disappearance of the dinosaurs.The main reason for this reduction.....*(Destruction of the habitat of living species by humans)*	,082	,044	,019	,185	,706
12.In our country, in what common ways do the municipalities dispose solid waste? *(By moving the waste to the garbage collecting area).*	,078	,127	,049	,155	,749
13.Which of the following is the most important advantage of the use of nuclear energy in power generation plants?*(Leadstominimal air pollution)*	,398	,349	,093	,049	,022
14.Which of the following are the most important causes of the disappearance of usable	,245	,032	,215	,030	,274

water? *(The unconscious use of the water)*					
15.Which of the following is a renewable energy source? *(None)*	,002	,040	,095	,096	,819
16.Which of the following naturally occurring in soil, rock and water is a colorless and odorless gas that leads to various health problems by infiltrate into the house?	,077	,045	,091	,507	,603
17.Most important nuclear power plant accident in 1986 occurred at the .....nuclear power plant? *(Chernobyl)*	,115	,129	,054	,014	,678
18.What is the most effective way to ensure the reduction of solid waste problem in the long term? *(Instead of throwing materials reuse it for other purposes)*	, 178	, 076	,247	,102	,610
19.What is the longest material that has the longest disintegration time in nature? *(Plastic)*	,162	,264	,025	,289	,157
Total	**0,150444**	**0,120833**	**0,122737**	**0,144947**	**0,382474**

[*p<0,05]

The comparison of the answers given by students about environmental behaviors by grades is as given in Table 37. As seen from the table, significant differences were found between genders only in four questions.

4.2.3. The Relationship Between the Attitude and Behavior Levels of University Students and Grades

Table 38. Comparison of the Answers Given By Students to the Questions about Environmental Behaviors by Grades (ANOVA) (***5=Definitely Agree; 1= Definitely Not Agree***)

Articles	Correct Answer Percentage				Sig.
	1.Grade	2.Grade	3.Grade	4.Grade	(%5)
I like watching television programs about the environment.	1,219	1,008	1,002	1,044	,721
I appreciate people who are sensitive to and aware of environmental issues.	,929	,706	,815	,724	,480
Being knowledgeable about environmental issues are important to me.	,929	,697	,878	,820	,686
Rapidly disappearing forests worries me.	1,049	,911	,968	1,067	,445
I think everyone should be concerned about the ozone layer problem.	1,076	1,166	1,049	1,144	,909
I would like to further improve controls over industrial and agricultural areas for the protection	1,087	1,126	1,106	1,144	,916

of quality of the environment, even if the price of the products I use increase.					
I believe that all plant and animal species are exist for human use.	1,128	1,036	1,095	1,022	,898
I think that legal obstacles on the use of fossil fuels should be removed.	1,092	1,167	1,059	1,140	,661
Even if it means paying more tax, the state should give financial support to work on renewable energy sources.	1,185	1,175	1,059	1,082	,828
Even if restricts the freedom of the individual, laws relating to environmental protection must be made.	,999	1,115	2,054	,917	,503
I want to help prevent environmental problems.	1,162	1,107	1,205	1,027	,023
I believe that my behavior will contribute to prevention of environmental problems.	1,258	1,160	1,144	1,272	,001
I feel responsible for the prevention of environmental problems.	1,214	1,231	1,116	1,315	,002
Environment-related programs which are made by media changed my attitude towards the environment.	1,125	1,208	1,030	1,308	,000
Environmental protection concept is invented by Westerners in order to prevent the development of developing countries.	1,313	1,243	1,198	1,360	,006
In order to sustain human beings life's they need to maintain harmony with the environment.	1,286	1,314	1,212	1,266	,312
To meet the needs of human beings, they have the right to make changes in the environment.	1,278	1,349	1,313	1,240	,173
I will not just become a member of a club that is interested in environmental issues.	1,324	1,261	1,209	1,288	,420
Total	**1,147389**	**1,11**	**1,139556**	**1,121111**	**0,443556**

[*p<0,05]

The comparison of the answers given by students about environmental behaviors by the grades is as given in Table 38. As seen from the table, significant differences were found between genders only in five questions.

Table 39. Comparison of the Answers Given By Students to the Questions about Environmental Attitudes by Grades (ANOVA) (***5=Definitely Agree; 1= Definitely Not Agree***)

Articles	Correct Answer Percentage				Sig. (%5)
	1.Grade	2.Grade	3.Grade	4.Grade	
I turn off the lights and electrical appliances I 66xpress power saving.	,675	,631	,673	,628	,769
I don't buy products that are not covered.	,557	,548	,507	,563	,501
When I see people behaving environmentally harmful, I talk to them about these behaviors.	,636	,619	,612	,689	,429
Make an effort to be a less consumer.	,644	,643	,639	,678	,098

I try to be a positive example to my friends about environmentally responsible behavior.	,734	,656	,673	,642	,774
I support candidates in elections dealing with environmental problems.	,722	,728	,734	,674	,815
When I see an empty aluminum cans on the 67xpr I pick it up.	,636	,767	,746	,753	,316
I thrown waste such as, newspapers, glass or metal boxes into the recycling bins.	,666	,713	,678	,755	,801
I won't buy products that have a negative impact on the environment.	,734	,772	,697	,841	,440
I speak what we can do to prevent environmental problems with friends and family.	,738	,681	,729	,737	,518
I 67xpress my views on environmental issues by writing a letter or calling the officials.	,730	,695	,741	,669	,122
I read the articles in newspapers and magazines about the environment.	,767	,751	,699	,666	,818
I buy recycled products instead of buying cheaper products.	,706	,741	,718	,710	,581
write articles for newspapers about environmental problems.	,690	,709	,741	,695	,076
If I hear or see environmental violations I report them immediately to the authorities.	,709	,694	,706	,744	,865
I participate in activities such as conferences and panels about the environment.	,641	,569	,639	,642	,563
I wont start the washing machines and dishwashers before it's full.	,767	,654	,695	,651	,532
I turn off the tap when I soap my hands and brush my teeth.	,718	,682	,654	,634	,287
I dibble on each birthday.	,739	,691	,721	,706	,780
I prefer buying fruits and vegetables with organic agricultural products.	,800	,703	,700	,714	,761
Total	**0,70045**	**0,68235**	**0,6851**	**0,68955**	**0,5423**

[*p<0,05]

The comparison of the answers given by students about environmental attitudes by classes is as given in Table 39. As seen from the table, there is no significant difference statistically in the answers given by the participants to the questions about the environmental behaviours. The fact that there is no difference, indicates that all grades have the same individual thoughts on environmental attitudes.

4.2.4. The Relationship Between the Attitude and Behavior Levels of University Students and Nationalities

Table 40. Comparison of the Answers Given By Students to the Questions about Environmental Attitudes by Nationalities (ANOVA) (*5=Definitely Agree; 1= Definitely Not Agree*)

Articles	Correct Answer Percentage				Sig. (%5)
	Nigerian	Pakistanian	Libyan	Turkish	
I like watching television programs about the environment.	,940	1,031	1,244	,770	,000
I appreciate people who are sensitive to and aware of environmental issues.	,646	,835	,886	,690	,000
Being knowledgeable about environmental issues are important to me.	,681	,982	,824	,736	,000
Rapidly disappearing forests worries me.	,964	,892	1,191	,861	,250
I think everyone should be concerned about the ozone layer problem.	1,134	1,009	1,275	,950	,140
I would like to further improve controls over industrial and agricultural areas for the protection of quality of the environment, even if the price of the products I use increase.	1,198	,947	1,232	1,031	,223
I believe that all plant and animal species are exist for human use.	1,107	1,072	1,029	1,048	045
I think that legal obstacles on the use of fossil fuels should be removed.	1,270	1,016	1,076	1,025	,027
Even if it means paying more tax, the state should give financial support to work on renewable energy sources.	1,200	1,010	1,176	1,054	,013
Even if restricts the freedom of the individual, laws relating to environmental protection must be made.	2,271	1,009	1,005	,983	,034
I want to help prevent environmental problems.	,765	,725	,761	,603	,000
I believe that my behavior will contribute to prevention of environmental problems.	1,130	1,106	1,120	1,074	,000
I feel responsible for the prevention of environmental problems.	1,212	1,109	1,149	1,173	,000
Environment-related programs which are made by media changed my attitude towards the environment.	1,075	1,227	1,183	1,240	,000
Environmental protection concept is invented by Westerners in order to prevent the development of developing countries.	1,015	1,126	1,146	1,294	,000
In order to sustain human beings life's they need to maintain harmony with the environment.	1,259	1,226	1,215	1,386	,000
To meet the needs of human beings, they have the right to make changes in the environment.	1,202	1,152	1,180	1,471	,000
I will not just become a member of a club that is interested in environmental issues.	1,115	1,210	1,127	1,503	,006
Total	**1,115**	**1,21**	**1,127**	**1,503**	**1,115**

[*p<0,05]

The comparison of the answers given by students about environmental attitudes by genders is as given in Table 40. As seen from the table, significant differences were found between the genders and the answers given to the questions asked.

Table 41. Comparison of the Answers Given By Students to the Questions about Environmental Behaviours by Nationalities (ANOVA) (*5=Definitely Agree; 1= Definitely Not Agree*)

Questions	Correct Answer Percentage				Sig. (%5)
	Nigerian	Pakistanian	Libyan	Turkish	
I turn off the lights and electrical appliances I 69xpress power saving.	,652	,598	,717	,545	,000
I don't buy products that are not covered.	,592	,588	,492	,464	,090
When I see people behaving environmentally harmful, I talk to them about these behaviors.	,677	,655	,695	,470	,170
Make an effort to be a less consumer.	,665	,658	,671	,583	,029
I try to be a positive example to my friends about environmentally responsible behavior.	,752	,634	,683	,627	,387
I support candidates in elections dealing with environmental problems.	,765	,725	,761	,603	,187
When I see an empty aluminum cans on the 69xpr I pick it up.	,687	,791	,716	,682	,003
I thrown waste such as, newspapers, glass or metal boxes into the recycling bins.	,598	,771	,611	,726	,000
I won't buy products that have a negative impact on the environment.	,696	,820	,687	,767	,013
I speak what we can do to prevent environmental problems with friends and family.	,698	,732	,683	,692	,000
I 69xpress my views on environmental issues by writing a letter or calling the officials.	,756	,719	,603	,705	,000
I read the articles in newspapers and magazines about the environment.	,752	,701	,724	,677	,004
I buy recycled products instead of buying cheaper products.	,771	,677	,717	,660	,001
write articles for newspapers about environmental problems.	,796	,611	,722	,692	,008
If I hear or see environmental violations I report them immediately to the authorities.	,715	,683	,722	,570	,000
I participate in activities such as conferences and panels about the environment.	,582	,642	,702	,514	,021
I wont start the washing machines and dishwashers before it's full.	,688	,702	,719	,612	,001
I turn off the tap when I soap my hands and brush my teeth.	,697	,647	,649	,588	,000
I dibble on each birthday.	,709	,709	,696	,605	,000
I prefer buying fruits and vegetables with organic agricultural products.	,765	,662	,720	,655	,000

Total	**0,70065**	**0,68625**	**0,6845**	**0,62185**	**0,0457**

[*p<0,05]

The comparison of the answers given by students about environmental behaviors by nationalities is as given in Table 41. As seen from the table, significant differences were found between nationalities and the answers given to the questions asked.

4.2.5. The Relationship Between the Attitude and Behavior Levels of Students and Genders

Tablo 42. Comparison of the Answers Given By Students to the Questions about Environmental Attitudes by Gender *x(T-Test) (5=Definitely Agree; 1= Definitely Not Agree)*

Questions	Avarage Attitude		Sig.
	Woman	Man	2-tailed
I like watching television programs about the environment.	1,084	1,047	,411
I appreciate people who are sensitive to and aware of environmental issues.	1,847	1,767	,826
Being knowledgeable about environmental issues are important to me.	1,897	1,767	,588
Rapidly disappearing forests worries me.	1,995	1,984	,966
I think everyone should be concerned about the ozone layer problem.	1,101	1,105	,578
I would like to further improve controls over industrial and agricultural areas for the protection of quality of the environment, even if the price of the products I use increase.	1,159	1,079	,433
I believe that all plant and animal species are exist for human use.	1,081	1,067	,840
I think that legal obstacles on the use of fossil fuels should be removed.	1,172	1,071	,996
Even if it means paying more tax, the state should give financial support to work on renewable energy sources.	1,127	1,124	,719
Even if restricts the freedom of the individual, laws relating to environmental protection must be made.	1,027	1,650	,946
I want to help prevent environmental problems.	1,177	1,131	,271
I believe that my behavior will contribute to prevention of environmental problems.	1,298	1,161	,380
I feel responsible for the prevention of environmental problems.	1,289	1,181	282
Environment-related programs which are made by media changed my attitude towards the environment.	1,260	1,140	,657
Environmental protection concept is invented by Westerners in order to prevent the development of developing countries.	1,289	1,268	,343
In order to sustain human beings life's they need to maintain harmony with the environment.	1,293	1,255	,550
To meet the needs of human beings, they have the right to make changes in the environment.	1,265	1,337	,183

I will not just become a member of a club that is interested in environmental issues.	1,261	1,263	,931
Total	**1,312333**	**1,299833**	**16,25656**

[*p<0,05]

The comparison of the answers given by students about environmental attitudes by genders is as given in Table 40. As seen from the table, no significant difference was found between genders from the answers given to the questions asked. In general, there is no significant difference statistically in the answers given by women and men to the questions about the environmental attitude. The fact that there is no difference, indicates that male and female groups have the same individual thoughts on environmental attitudes.

Table 43. Comparison of the Answers Given By Students to the Questions about Environmental Behaviors *x(T-Test) (5=Definitely Agree; 1= Definitely Not Agree)*

Questions	Average Attitude		Sig.
	Woman	Man	2-tailed
I turn off the lights and electrical appliances I use for power saving.	,571	,700	,296
I don't buy products that are not covered.	,530	,544	,003
When I see people behaving environmentally harmful, I talk to them about these behaviors.	,617	,641	,290
Make an effort to be a less consumer.	,685	,628	,394
Spacing example to my friends about environmentally responsible behavior.	,690	,668	,691
I support candidates in elections dealing with environmental problems.	,768	,685	,327
When I see an empty aluminum cans on the floor I pick it up.	,772	,694	,002
I thrown waste such as, newspapers, glass or metal boxes into the recycling bins.	,689	,700	,702
I won't buy products that have a negative impact on the environment.	,767	,740	,116
I speak what we can do to prevent environmental problems with friends and family.	,723	,716	,600
I express my views on environmental issues by writing a letter or calling the officials.	,700	,729	,867
I read the articles in newspapers and magazines about the environment.	,712	,731	,001
I buy recycled products instead of buying cheaper products.	,680	,744	,308
write articles for newspapers about environmental problems.	,700	,728	,499
Spacing environmental violations I report them immediately to the authorities.	,708	,706	,225

I participate in activities such as conferences and panels about the environment.	,605	,629	,343
I wont start the washing machines and dishwashers before it's full.	,706	,686	,005
I turn off the tap when I soap my hands and brush my teeth.	,665	,676	,140
I dibble on each birthday.	,717	,709	,247
I prefer buying fruits and vegetables with organic agricultural products.	,750	,715	,858
Total	**0,68775**	**0,68845**	**0,3457**

[*p<0,05]

The comparison of the answers given by students about environmental behaviors by genders is as given in Table 41. As seen from the table, significant differences were found between genders in four questions.

4.2.6. The Relationship between the Attitude and Behavior of University Students and Economic Status of Families

Table 44. Comparison Of The Answers Given By Students To The Question *"I Like Watching Television Programs About The Environment"* (Duncan %5).

Family Salary	N	Duncan %0.05	
		1	2
More than 4,000 TL	26	1,42	
Between 3,000 -4,000TL	112	1,86	1,86
Less than 1,000TL	12	1,92	1,92
Between 2,000 – 3,000TL	135		2,00
Between 1,000 TL – 2,000TL	115		2,04

Among the students who participated in the survey in Table 44 and answered the question *"I Like Watching Television Programs About The Environment"*, those with more then 4000 TL monthly family income got the lowest number (1.42), while those with 1000-2000 TL monthly family income got the the highest number (2.04).

Table 45. Comparison Of The Answers Given By Students To The Question "*I Appreciate People Who Are Sensitive To And Aware Of Environmental Issues*" (Duncan%5).

Familey Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	26	1,77	
Between 3,000 -4,000TL	12	2,00	2,00
Less than 1,000TL	112	2,09	2,09
Between 2,000 – 3,000TL	115	2,15	2,15
Between 1,000 TL – 2,000TL	135		2,20

Just as in the previous article, among the students who participated in the survey in Table 45 and answered the question *"I Appreciate People Who Are Sensitive To And Aware Of Environmental Issues"*, those with income more than 4000 TL monthly family got the lowest number (1.77), while those with 1000-2000 TL monthly family income got the the highest number (2.20). The answers given by students show that they are hesitant and that their environmental awareness is lower than expected. According to these results; students more than 4000 TL family income have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 46. Comparison Of The Answers Given By Students To The Question *"Being Knowledgeable About Environmental Issues Are Important To Me"* (Duncan % 5)

Family Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	1,67	
Between 3,000 -4,000TL	26	1,88	1,88
Less than 1,000TL	135		2,17
Between 2,000 – 3,000TL	115		2,17
Between 1,000 TL – 2,000TL	112		2,21

Among the students who participated in the survey in Table 46 and answered the question *"Being Knowledgeable About Environmental Issues Are Important To Me"*, those with more than 4000 TL monthly family income got the lowest number (1.67),

while those with 1000-2000 TL monthly family income got the the highest number (2.21). According to these results; students with more than 4000 TL monthly family income have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 47. Comparison Of The Answers Given By Students To The Question *"Rapidly Disappearing Forests Worries Me"* (Duncan %5).

Family Salary		Duncan %0.05		
	N	1	2	3
Less than 1,000TL	12	1,67		
More than 4,000 TL	26	1,85	1,85	
Between 1,000 TL – 2,000TL	115		2,21	2,17
Between 2,000 – 3,000TL	135		2,21	2,17
Between 3,000 -4,000TL	112			2,37

Among the students who participated in the survey in Table 47 and answered the question *"Rapidly Disappearing Forests Worries Me"*, those with less than 1000 TL monthly family income got the lowest number (1.67), while those with 3000-4000 TL monthly family income got the the highest number (2.37). According to these results; students with less than 1000 TL monthly family income have lower environmental awareness, while those with 3000-4000 TL monthly family income are the ones who have higher environmental awareness.

Table 48. Comparison of The Answers Given By Students To The Question *"I Think Everyone Should Be Concerned About The Ozone Layer Problem"* (Duncan %5).

Family Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	1,50	
Between 3,000 -4,000TL	26		2,04
Less than 1,000TL	115		2,23
Between 2,000 – 3,000TL	135		2,42
Between 1,000 TL – 2,000TL	112		2,24

Among the students who participated in the survey in Table 48 and answered the question *"Think Everyone Should Be Concerned About The Ozone Layer Problem"*, those with more than 4000 TL monthly family income got the lowest number (1.50), while those with 1000-2000 TL monthly family income got the the highest number (2.42). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 49. Comparison of The Answers Given By Students To The Question *"I Would Like To Further Improve Controls Over Industrial And Agricultural Areas For The Protection of Quality of The Environment, Even If The Price of The Products I Use Increases"* (Duncan %5).

Family Salary	N	Duncan %0.05	
		1	2
More than 4,000 TL	12	1,58	
Between 3,000-4,000TL	26		2,35
Less than 1,000TL	112		2,37
Between 2,000 – 3,000TL	135		2,40
Between 1,000 TL – 2,000TL	115		2,44

Just as in the previous article, among the students who participated in the survey in Table 49 and answered the question *"I Would Like To Further Improve Controls Over Industrial And Agricultural Areas For The Protection Of Quality Of The Environment, Even If The Price Of The Products I Use Increase"*, those with more than 4000 TL monthly family income got the lowest number (1.58), while those with 1000-2000 TL monthly family income got the the highest number (2.44). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 50. Comparison of The Answers Given By Students To The Question *"I Believe That All Plant And Animal Species Are Exist For Human Use"* (Duncan %5).

Famiy Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	2,00	
Between 3,000 -4,000TL	26	2,42	2,42
Less than 1,000TL	115	2,43	2,43
Between 2,000 – 3,000TL	135	2,48	2,48
Between 1,000 TL – 2,000TL	112		2,59

Among the students who participated in the survey in Table 50 and answered the question *"I Believe That All Plant And Animal Species Are Exist For Human Use"*, those with more than 4000 TL monthly family income got the lowest number (2.00), while those with 1000-2000 TL monthly family income got the the highest number (2.59). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 51. Comparison of The Answers Given By Students To The Question *"I Believe That My Behavior Will Contribute To Prevention of Environmental Problems"* (Duncan %5).

Family Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	2,17	
Between 3,000 -4,000TL	115	2,31	2,31
Less than 1,000TL	112		2,81
Between 2,000 – 3,000TL	135		2,83
Between 1,000 TL – 2,000TL	26		2,85

Among the students who participated in the survey in Table 51 and answered the question *"I Believe That My Behavior Will Contribute To Prevention Of Environmental Problems"*, those with more than 4000 TL monthly family income got the lowest number (2.17), while those with 1000-2000 TL monthly family income got the the highest number (2.85). According to these results; students with more then 4000 TL monthly family

income have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 52. Comparison of The Answers Given By Students To The Question *"I Feel Responsible For The Prevention of Environmental Problems"* (Duncan %5).

Family Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	2,17	
Between 3,000 -4,000TL	115	2,49	2,49
Less than 1,000TL	135	2,70	2,70
Between 2,000 – 3,000TL	112		2,94
Between 1,000 TL – 2,000TL	26		3,08

Among the students who participated in the survey in Table 52 and answered the question *"I Feel Responsible For The Prevention Of Environmental Problems"*, those with more than 4000 TL monthly family income got the lowest number (2.17), while those with 1000-2000 TL monthly family income got the the highest number (3.08). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 53. Comparison of The Answers Given By Students To The Question *"Environmental Protection Concept Is Invented By Westerners In Order To Prevent The Development of Developing Countries"* (Duncan %5).

Familey Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	2,50	
Between 3,000 -4,000TL	115	2,78	
Less than 1,000TL	135	2,83	
Between 2,000 – 3,000TL	112	3,14	3,14
Between 1,000 TL – 2,000TL	26		3,65

Among the students who participated in the survey in Table 53 and answered the question *"Environmental Protection Concept Is Invented By Westerners In Order To Prevent The Development Of Developing Countries"*, those with more than 4000 TL monthly family income got the lowest number (2.50), while those with 1000-2000 TL monthly

family income got the the highest number (3.65). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 54. Comparison of The Answers Given By Students To The Question *"In Order To Sustain Human Beings Life's They Need To Maintain Harmony With The Environment"* (Duncan %5).

Familey Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	2,25	
Between 3,000 -4,000TL	115	2,70	2,70
Less than 1,000TL	112	2,80	2,80
Between 2,000 – 3,000TL	135	2,84	2,84
Between 1,000 TL – 2,000TL	26		3,23

Among the students who participated in the survey in Table 54 and answered the question *"In Order To Sustain Human Beings Life's They Need To Maintain Harmony With The Environment"*, those with more than 4000 TL monthly family income got the lowest number (2.25), while those with1000-2000 TL monthly family income got the the highest number (3.23). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 55. Comparison of The Answers Given By Students To The Question *"To Meet The Needs Of Human Beings, They Have The Right To Make Changes In The Environment"* (Duncan %5).

Familey Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	12	2,42	
Between 3,000 -4,000TL	115	2,77	2,77
Less than 1,000TL	112	2,82	2,82
Between 2,000 – 3,000TL	135	3,00	3,00
Between 1,000 TL – 2,000TL	26		3,23

Just as in the previous article, among the students who participated in the survey in Table 55 and answered the question *"To Meet The Needs Of Human Beings, They Have The Right To Make Changes In The Environment"*, those with more than 4000 TL monthly family income got the lowest number (2.25), while those with 1000-2000 TL monthly family income got the the highest number (3.23). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 56. Comparison of The Answers Given By Students To The Question *"Make An Effort To Be A Less Consumer"* (Duncan %5).

Family Salary		Duncan % 0.05	
	N	1	2
More than 4,000 TL	112	1,91	
Between 3,000 -4,000TL	115	1,91	
Less than 1,000TL	135	1,95	
Between 2,000 – 3,000TL	26	2,04	2,04
Between 1,000 TL – 2,000TL	12		2,33

Among the students who participated in the survey in Table 56 and answered the question *"Make An Effort To Be A Less Consumer"*, those with more than 4000 TL monthly family income got the lowest number (1.91), while those with 1000-2000 TL monthly family income got the the highest number (2.33). According to these results; students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 57. Comparison of The Answers Given By Students To The Question *"I Try To Be A Positive Example To My Friends About Environmentally Responsible Behavior"* (Duncan %5).

Family Salary		Duncan %0.05	
	N	1	2
More than 4,000 TL	112	1,86	
Between 3,000 -4,000TL	115	1,90	
Less than 1,000TL	135	2,01	2,01
Between 2,000 – 3,000TL	12		2,27
Between 1,000 TL – 2,000TL	26		2,25

Among the students who participated in the survey in Table 57 and answered the question *"I Try To Be Positive Example To My Friends About Environmentally Responsible Behavior"*, those with more than 4000 TL monthly family income got the lowest number (1.86), while those with 2000-3000 TL monthly family income got the the highest number (2.27). According to these results students with more than 4000 TL monthly family incomes have lower environmental awareness, while those with 2000-3000 TL monthly family income are the ones who have higher environmental awareness.

Table 58. Comparison of The Answers Given By Students To The Question *"I Read The Articles İn Newspapers And Magazines About The Environment"* (Duncan %5).

Family Salary		Duncan = 0.05	
	N	1	2
More than 4,000 TL	12	1,91	
Between 3,000 -4,000TL	112	1,58	1,91
Less than 1,000TL	26		1,96
Between 2,000 – 3,000TL	115		1,99
Between 1,000 TL – 2,000TL	135		2,07

Among the students who participated in the survey in Table 58 and answered "I Read The Articles In Newspapers And Magazines About The Environment" question; those with 3000-4000 TL monthly family income got the lowest number (1.58) and those with 1000-2000 TL monthly family income got the highest number (3.23). According to these results; students with 3000-4000 TL monthly family incomes have lower environmental

awareness, while those with 1000-2000 TL monthly family income are the ones who have higher environmental awareness.

Table 59. Comparison between the Students' Environmental Attitudes and Behaviors and Education Status of Their Parents

	Dependent Variable	Sum of Squares	df	Mean Square	F	p	
Father Education	Attitudes	233,6173	5	114,0933	,115	,641	p>,05
	Behaviors	352,2674	5	1,410764	,120	,327	P>,05
	Dependent Variable	**Sum of Squares**	**df**	**Mean Square**	**F**	**p**	
Mother Education	Attitudes	126,8323	5	0,517798	,119	,529	p>,05
	Behaviors	352,2674	5	1,680115	,155	,267	p>,05

As seen in Table 59, no significant difference was found when attitudes and behaviors towards environment of university students are compared to the education status of their parents.

CHAPTER V
RESULTS AND RECOMMENDATIONS

In this part of the research, obtained findings were reviewed in line with the purposes. In order to protect the integrity, this research focused on the main questions and then, reviewed.

5.1. Research Results

In this study, environmental literacy levels (knowledge, attitude, behavior) of university students was observed. As a result of the research, students' knowledge of the environment was identified and some suggestions were offered depending on the deficiencies.

While a significant difference is encountered ($p<.05$), between the environmental attitudes of university students ($p=,043$) who has participated in the survey, no difference ($p>.05$) was found between the environmental behaviors ($p=,567$). According to this result, although the high attitude towards the environment among university students, it can be said that their behavior is not at the desired level. Erol (2005)., Çabuk and Karacaoğlu, (2003) obtained the similar results in many studies conducted on university students.

When the results of the survey given by the university students about environmental literacy levels (knowledge, attitude, behavior) are compared according to the grades, we see that there is a difference between the 1st, 2nd, 3rd, and 4th grade students. The students studying in the 1st and 2nd grade have information on almost the same level, 3rd graders have less information than the other classes, while 4th graders have more information than 1st, 2nd, and the 3rd graders. As the grade level of students increase, the number of topics that are relevant to the environment also increases. We observed that the levels of attitude and behavior also increased. Sağır et al, (2008) found significant differences in his several studies on the attitude towards the environment in terms of classes. The results of this study is parallel to the results of those studies.

When the students' attitudes towards the environment studying in the university were compared by gender, no significant difference was found. But when looked at the level of environmental behaviors, a significant difference was found ($p < 0.05$). The environmental attitudes and behaviors of female students have higher scores than male students. The studies supporting the results of the environmental attitude scale analysis by gender are: Alp et al, (2006) stated that female students have more positive attitudes towards the environment. Gündüz Ş., Aslanova F. (2015)., Gökçe et al, (2006) found significant differences in favor of female students regarding the students' attitude towards the environment. Kaya et al, (2009) reported that attitudes towards sex affect the environment in favor of girls. Erol and Gezer (2004) reported that female students' attitudes towards environmental problems are higher than male students and that the difference is significantly big. Atasoy (2005), found that based on the attitude scale results, the attitudes of female students were higher than male students.

When the environmental literacy size of the university students participating in the research (knowledge, attitude, behavior levels) is analyzed according to their families' monthly income, a significant difference was found between the environmental attitudes and behavior levels. We obsereved that the students, with a family with more than 4000 TL monthly income, have lower levels of environmental attitudes and behavior and students, with a family with 1000-2000 TL monthly income, have higher level of environmental attitudes and behaviors. This result is similar to an extent with the work done by Şerenli (2010).

When the environmental literacy levels (attitude and behavior levels) of the university students were analyzed according to their parents' level of education, any significant difference could not be found between environmental attitudes and behavior levels. When looked at this results, the environmental attitudes and behaviors of the participants are not influenced by the educational status of their parents. According to the study of Kışoğlu (2009), any significant difference could not be found between the eduation status of the parents of biology teachers and their environmental

knowledge, attitudes, behaviors and perception scores. Altınöz (2010) could not detect a significant difference between environmental knowledge, attitudes, behavior and perception scores of the parents of biology teachers according to their education status'.

Within the same approach, Gökçe and others (2007) were not able to detect significant differences in their study between the scores of environmental attitudes and educational levels of parents. While Varişli (2009) was investigating the role of other sociodemographic variables in assessing the environmental literacy of the 8th grade students in his study, he reached to the conclusion that the mother and father's education level affect the students' level of knowledge about the environment. In our study, a significant difference could not be found between the parents' educational status of education faculty students and the scores they received in the environmental variables.

When looked at the responses given to the knowledge questions by university students within the scope of the research, it can be said that the participants have information about the environment. Some of the environmental researches conducted earlier by academics showed similar values to these results Gündüz &Aslanova (2011)., Altınözü, (2010)., Kışoğlu, (2009)., Kibert, (2000)., Karatekin, (2011). When the answers given by university students to the questions asked about the environmental behavior were compared based on nationality, some significant differences were also found.

As a result of the research we see that the environmental literacy levels of students (knowledge, attitude and behavior) are in the medium level. One of the aims of the environmental education in our schools is to educate environmental literacy individuals.

In addition, the environmental literacy level is the measure that will allow the determination of wheter the goal of this training is reached or not, and which points are needed to focus on. The intermediate level of environmental literacy we obtained

is not a desired level. The expectations are of that the environmental literacy level of future environmental educators should be a high in order to be successful in providing this training to the students who will take them as role models.

5.2. Recommendations

After the findings and conclusions of this study, the following recommendations can be obtained:

- Starting from the pre-school, the programs and environmental education courses that will be given to students at all educational levels should be organized This environmental education that is to be re-organized should be prepared in a way that can increase their environmental literacy levels and encourage them to turn their sustainable environmental awareness into an attitude and behavior.

- To raise environmentally literate individuals, the teachers are required to have environmental literacy primarily. When the relevant literature is observed, it is seen that the studies were mainly related to the environmental literacy of students and teachers. But works related to teachers with various majors who work in schools and teach environmental issues is close to none. Work on environmental literacy levels of teachers can be made.

- Students should comprehend that the world we live in is everyone else's living area, future generations have rights on this world and environment, and other living creatures also have rights on these living areas and that's why the students need to be sensitive towards the environment.

- All sectors of society should be informed about environmental literacy with non-formal education programs that will be organized.

- Educational institutions should be centers for environmental organizations and related environmental projects should be produced there.

- In-service training courses should be organized in order to inform all the teachers, that work in education institutions all around the country and give environmental courses, about the implementation of the active learning approach in environment courses.

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Appendix-1:

PERSONAL INFORMATION FORM

Dear Students,

Thank you for your oarticipation. This survey is related to a scientific study. As a result, you will not be given any grades. Therefore, pleace do not write your name. Please read the questions carefully and answer them sincerly. The survey should take no longer than 20 minutes to complete.

Khaled S.M . Alemari
Master Student,

Class:..... Age.:.....
Faculty: .....
Department: .....
Gender: Female☐ Male☐
Nationality: **Nigerian**☐ **Syrian**☐ **Libyan**☐ **Turkish**☐

The population of the area where you live: Less than 500 ☐Between 500-2,000 ☐Between 2,000-5,000 ☐Between 5,000-10,000 ☐Between 10,000-20,000☐ Between 20,000-50,000 ☐ More than 50,000 ☐

Education status of your mother:

Elementary ☐1
Primary School ☐2
Secondary School ☐3
High School ☐4
University / Faculty☐5
Master / Doctorate☐6

Education status of your father:

Elementary ☐1
Primary School ☐2
Secondary School ☐3
High School ☐4
University / Faculty☐5
Master / Doctorate☐6

What is your familys monthly income? Who are involved?

Less than 1,000TL ☐ Between 1,000 TL – 2,000TL ☐ Between 2,000 – 3,000TL☐
Between 3,000 -4,000TL ☐ More than 4,000 TL ☐

Please tick the appropriate option in the following question:

1.Have you received any environmental lessons before?

Yes☐1 No☐2

2.Do you actively join in any environmental group's (foundations, associations, voluntary organizations and etc.)to work?

Yes ☐1 Name:..... No ☐ 2

Appendİx-2

ENVIRONMENTAL INFORMATION TEST

1) Which of the following is not included in the hazardous waste class? A) plastic package B) Glass C) Battery D) spoilt food
2) Ozone, located in the upper atmosphere protects us against which of the following? A) Carbon dioxide B) Radon gas C) Photochemical smog D) ultraviolet rays coming from the sun
3) Chlorofluorocarbon gas ..... A) Is naturally produced in the atmosphere. B) Causes the formation of acid rain. C) Causes a depletion of the atmospheric ozone layer. D) Is no longer an environmental problem.
4) Which of the following are examples of non-construction noise? A) Washing machines B) Stereos C) Industrial vehicles and machines D) the noise from the sanitary wares
5) Which of the following arethe most sensitive cells of the human body against radiation? A) Kidney tube cells B) muscle cells C) bile duct cells D) lymph node and spleen cells in blood
6) Which of the following is the most sensitive aquatic environment against pollution? A) Lakes B) Rivers C) Streams D) Creeks
7) All living organisms living in a particular region of the forest has same..... live / have been / are used. A) Niche B) Habitat C) Lifestyle D) Food supply
8) Which of the following is the measurement unit of noise? A) Decibel B) Hertz C) Curie D) Weber
9) Which of the following is not true about the world human population? A) A majority of the world's population lives in developed countries. B) United States and Canada's and other developed countries population growth rate are lower than other countries. C) Increasing human population causes the extinction of many plant and animal species. D) The largest population growth rates are in developing countries such as South America and Africa.
10) Which of the following are the most important causes of pollution of groundwater? A) Organic farming activities B) wastewater treatment plant C) The use of agricultural fertilizer D) water storage facilities of municipalities
11) Rate of extinction of living species, has reached the highest level in the period up to the present time from the disappearance of the dinosaurs. The main reason for this reduction..... A) Is the destruction of the habitat of living species by humans. B) Illegal hunting of animals and collecting plant species.

C) Changes in the Earth's atmosphere because of human activities. D) Hunting of animals for sport and food.
12) In our country, in what common ways do the municipalities dispose solid waste? A) Burning in a confined space B) Allowing the recycle C) by moving the waste by ships and unloading it to the offshore D) by moving the waste to the garbage collecting area
13) Which of the following is the most important advantage of the use of nuclear energy in power generation plants? A) The construction of nuclear power plants is very expensive. B) Storing products is much easier now. C) Leads to minimal air pollution. D) To be completely safe.
14) Which of the following are the most important causes of the disappearance of usable water? A) Water polluted with bacteria B) Uncontrolled drainage works C) The unconscious use of the water D) Water stored in improperly way
15) Which of the following is a renewable energy source? A) Oil B) Natural gas C) Biomass D) None
16) Which of the following naturally occurring in soil, rock and water is a colorless and odorless gas that leads to various health problems by infiltrate into the house? A) Ethane B) Krypton C) Radon D) Chlorofluorocarbons
17) Most important nuclear power plant accident in 1986 occurred at the .....nuclear power plant? A) Belgrade B) Nagasaki C) Chernobyl D) Three Mile Island
18) What is the most effective way to ensure the reduction of solid waste problem in the long term? A) Burning waste materials. B) To reduce the amount of consumed materials. C) Instead of throwing materials reuse it for other purposes. D) To provide recycling for re-use of materials.
19) What is the longest material that has the longest disintegration time in nature? A) Plastic B) Glass C) Steel D) Aluminum

Appendix-3:

SCALE OF ENVIRONMENTAL ATTITUDES

NO		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
T1	I like watching television programs about the environment.					
T2	I appreciate people who are sensitive to and aware of environmental issues.					
T3	Being knowledgeable about environmental issues is important to me.					
T4	Rapidly disappearing forests worries me.					
T5	I think everyone should be concerned about the ozone layer problem.					
T6	I would like to further improve controls over industrial and agricultural areas for the protection of quality of the environment, even if the price of the products I use increase.					
T7	I believe that all plant and animal species exist for human use.					
T8	I think that legal obstacles on the use of fossil fuels should be removed.					
T9	Even if it means paying more tax, the state should give financial support to work on renewable energy sources.					
T10	Even if it restricts the freedom of the individual, laws relating to environmental protection must be made.					
T11	I want to help prevent environmental problems.					
T12	I believe that my behavior will contribute to prevention of environmental problems.					
T13	I feel responsible for the prevention of environmental problems.					
T14	Environment-related programs which are made by media changed my attitude towards the environment.					
T15	Environmental protection concept is invented by Westerners in order to prevent the development of developing countries.					
T16	In order to sustain human beings life they need to maintain harmony with the environment.					
T17	To meet the needs of human beings, they have the right to make changes in the environment.					
T18	I will not just become a member of a club that is interested in environmental issues.					

Appendix-4

SCALE OF ENVIRONMENTAL BEHAVIOR

NO		Never	Occasionall	Always
D1	I turn off the lights and electrical appliances I use for power saving.			
D2	I don't buy products that are not covered.			
D3	When I see people behaving environmentally harmful, I talk to them about these behaviors.			
D4	Make an effort to be a less consumer.			
D5	I try to be a positive example to my friends about environmentally responsible behavior.			
D6	I support candidates in elections dealing with environmental problems.			
D7	When I see an empty aluminum can on the floor I pick it up.			
D8	I throw waste such as, newspapers, glass or metal boxes into the recycling bins.			
D9	I won't buy products that have a negative impact on the environment.			
D10	I speak what we can do to prevent environmental problems with friends and family.			
D11	I express my views on environmental issues by writing a letter or calling the officials.			
D12	I read the articles in newspapers and magazines about the environment.			
D13	I buy recycled products instead of buying cheaper products.			
D14	I write articles for newspapers about environmental problems.			
D15	If I hear or see environmental violations, I report them immediately to the authorities.			
D16	I participate in activities such as conferences and panels about the environment.			
D17	I won't start the washing machines and dishwashers before it's full.			
D18	I turn off the tap when I soap my hands and brush my teeth.			
D19	I dibble on each birthday.			
D20	I prefer buying fruits and vegetables with organic agricultural products.			

CURRUCULUM VITAE

My name is Khaled S.M Alemari. I was born on 08.03.1982 in Libya in Alqaragholli city. In 1999 I started high school and of completed in 2000-2001. I got my high Diploma in fall 2001 in the filed of Medical and Health technology, Environment Section. I obtained a High Diploma degree in spring 2005. I got a job at the end of 2008 as teaching assistant at the same Higher Institute where I graduated from. In 2014 I left my country to complete my education and get a master's degree. Here I had the opportunity to travel to the Republic of North Cyprus to receive a good education in this country. My master's study began in (2014-2015) in the field of Science and Environmental Education Management in Near East University.