



Reverse Tullip Education

# **Environmental Education; A Qualitative Study On Sustainable Environment**

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## **Abstract**

Recently, environmental awareness, sustainable development, environmental literacy, and science literacy, combined with a new concept within the framework of the ecological and environmentally conscious citizens, who protect the environment, contributing to sustainability and environmental responsibility of individuals form the perception of citizenship called ecological citizenship. Ecological citizenship is an interdisciplinary concept both in terms of legal and social rights and the environment in terms of ecology, social sciences, covering natural sciences.

In this research, Science and Technology, and Social Studies teacher candidates' knowledge and ideas on sustainable environmental, ecological citizenship, the issues of environmental awareness were tried to put. For this purpose, 36 Science and Technology Teacher candidates and 31 Social Studies Teacher candidates studying in Kastamonu University, in the academic year 2012-2013 form a candidate sample consists of 67 teachers. The data of the research were obtained with 8 open-ended questions asked to 67 pre-service teachers sustainable environmental and ecological issues related to citizenship and environmental sensitivity. According to the data obtained an important part of Science and Technology, and Social Studies teacher candidates used expressions; for the sustainable environment as "to move the environment for future generations" and "the environment to sustain itself". A large number of the candidate science teachers, used a phrase for ecological citizenship as "the individuals protecting ecology with their behaviors". A large number of candidates of Social Studies Teachers used phrase "individuals who take responsibility for the environment". A large part of the study sample teachers' used a phrase for sensitivity to the environment as "to protect and not pollute the environment". A large number of teachers used a phrase for individuals who are environmentally friendly, as "love of plants is more important than love of animals".

Our goal in this research is to draw attention to the issue of an estimate according to the findings in terms of environmental sustainability issues in environmental education at the level of higher education that will arise as a result of the research, and to reveal the inadequacy of pupils to the increasingly important issues of environmental education in the current century, to find more space in its education system which began to be restructured.

**Keywords:** Environmental education, Environmental sustainability, Ecological citizenship, Environmental sensitivity.

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## **1. INTRODUCTION**

At the top of the elements required for the continuity of our lives comes, no doubt the “environment”. Environment; may be defined as a biological, physical, social, economic and cultural environmental medium where creatures continue relationships throughout their lives, with mutual interaction (T. C. Environmental Law, 1983). Today, the environment is understood, at the first place, as, the medium where people are in interaction. In other words, the environment, is expressing the interaction of human mutual relations with other people, the people in the process of these relationships affect each other, all living beings other than their own, so that their mutual relations, and the interaction of plant and animal species, but remaining outside of the world of the living creatures in the environment, all non living things like air, water, soil, and climate, the underground richness within the framework of bilateral relations (Keleş, Harmancı & Çoban, 2009).

Four topics attract attention as the components of the environment being as physical environment, chemical environment, biological environment, and social environment.

- a) Physical environment: climate, vegetation, precipitation type, temperature, waste and etc. which create a physical environment.
- b) Chemical environment: air, water and chemicals in the soil, minerals, vitamins, chemical wastes and etc. which create a chemical environment.
- c) Biological Environment: plants, animals, humans, microorganisms, fungi, decomposers and so on. which create a biological environment.
- d) Social Environment: interactions between live or dead, communications of them and etc. which create a social environment.

Environmental issues which strongly draw attention in the last century, threaten our Earth which’s the Living Planet. Many political and scientific work, meetings, contracts and etc. were made in order to find solutions to environmental problems. But a fully permanent and effective solution couldn’t be found. Instead, applications have emerged to slow down the destruction of our world. In the realization of these applications, may come true by the increase in the number of individuals who are concerned and trained about the environment. This seems to be possible by training of the individuals on the environment and environmental issues. Environmental education is a tool to eliminate the problems that can bring the end of the world (Erten, 2006).

Environmental education are the education efforts which are entered to give individuals information and awareness about the environment in which they live (Gülay & Önder, 2011). It provides the development of ecological data transfer as well as the individuals’ attitudes towards the environment and promoting environmental awareness (Erten, 2006). It may be defined as to develop the sense of environment for humans, going into positive and lasting behavior change; to provide their participation actively in the resolution of environmental issues and problems (Turkey Environmental Atlas, 2004).

Looking at the history of the work on environmental issues, the environment and environmental issues on a global scale studies since 1970, as well as first ideas have emerged, congresses, conferences, conventions and agreements on environmental education were began to be made at that time.

- Environmental education gained global dimension at the United Nations Conference on the Human Environment held in Stockholm, Sweden in 1972 (Altınöz, 2010).
- In 1975, the International Environmental Education Programme (IEEP) was founded in Belgrade; an international workshop was made on environmental education.
- In 1977, a Congress was made on environmental education in Tbilisi.
- Environmental education and training congress was made in 1987 in Moscow.
- Policy decisions were taken in 1988 on environmental education in Europe.
- National curriculum on environmental education published in 1990 in the UK and on the state’s strategy on environmental education in 1996.
- The concept of sustainable development at the Earth Summit in Rio in 1992 has been associated with environmental education.
- The Decade of Education for Sustainable Development has been determined (2002) held in Johannesburg “World Summit on Sustainable Development” for the years 2005-2014 as (Karataş & Aslan, 2012).

Increasing the level of awareness of environmental issues has increased the importance of environmental education in the world; the most important factor in overcoming environmental problems is a good education not to be discussed. Environment is becoming more and more contaminated with increasingly uninhabitable with the development of industrialization, agriculture, fishing and other human activities. It can only be avoided by the training of individuals.

As the interests and attitudes of pre-school and school ages creating the basis for the future with appropriate behavior, values and attitudes of childhood and youth increase knowledge and awareness of the formation of love towards the nature is quite significant (Erten, 2006). The educators who are shareholders in the formation of information awareness and consciousness are helping the formation of behaviors (Altınöz, 2010).

The role and impact of education on formation of environmental awareness and the love of nature and in turning environmental protection into permanent behaviors is very great (Atasoy & Ertürk, 2008). Environmental awareness is emergence of the desired pattern of behaviors as a result of the environmental education of individuals. Eco-conscious individuals, have environmental knowledge, environmental attitudes and behaviors that are beneficial to the environment.

**Environmental Knowledge:** All knowledge about environment-related developments, environmental problems and solutions for them. **Attitudes towards the environment:** Positive or negative attitudes and thoughts shown by the people to useful or harmful behaviors towards the environment. **Environmentally beneficial behaviors:** The efforts shown for preservation of the environment to become more livable and to be transmitted for future generations (Erten, 2006).

Ecology-based environmental education is based on the nature education. In this training, individuals have interaction with the living or non-living beings in nature. The environment education based on ecology provides learning for individuals about science and environment. If the field studies in localities outside of school is planned well students will acquire positive attitudes and values towards nature and the environment (Güler, 2009). Science and technology education has a basic element the method of learning by doing expresses ecology-based environmental education. This type of training of individuals, even if short-time given, becomes permanent due to interactions and experiences.

The global search for a solution to the problems arising from the effects of environmental activities caused by factors such as the industrial revolution and the subsequent technological advances, the unconscious hunting, irresponsible consumption, unconscious urbanization, unconscious agriculture, etc. started in the mid 20th century. The concept of environmental education came out with in search of this solution and the importance of environmental education has been increasing in recent years. A good education is very important for the sustainability of the environment. Sustainable environment, means people using the environment in an efficient manner, and that the ability to transfer at least the same efficiency to the future generations to live in the same environment,. In fact, the concept of a sustainable is being used for sustainable development rather than environment. Sustainable development may be expressed as establishing the balance between man and nature without exhausting natural resources, so as to allow supply to meet their needs both today and in the future in the life and development and life of future generations (Afacan & Demirci-Güler, 2011).

In 1987, the United Nations, the World Commission on Environment and Development report, sustainable development is defined as "the process to meet the needs of today, without sacrificing offerings to meet the needs of future generations" (Aksu, 2011). Sustainable development, has become a global plan by implementation of the international treaties signed. The basic philosophy of sustainable development, which is a target of global-scale by evaluating economic and social structure and the interaction of the environment in a holistic manner supply present and future generations benefit from equitable development opportunities (URL-1).

Bolivia and Ecuador established ecological constitution for the environment in the light of global scale ecological studies. Bolivia is the leading country to declare ecological constitution which makes an equal footing with man and nature to prevent climate change, prevent the exploitation of natural assets to prevent and improve the quality of life of the people of Bolivia. Ecuador became the second country by adopting nature or Pachamama (Mother Earth ) where life nourishes as existing and took under protection in the 71st article of the Constitution approved by referendum on 28 September 2008 (URL-2). Most countries have started to behave more sensitive to environment by developing their environmental policies.

The concept of ecology reflected in both constitutions as well as in politics, has revealed the concept of ecological citizenship. Ecological citizenship as a new entrant to the literature aims at environmentalism and citizenship to be in dialogue globally (Bal, 2008). Bartvan Steenberg mentioned about the concept of ecological citizenship for the first time in 1994 (Van Steenberg, 1994). Andrew Dobson developed the concept of “ecological citizenship” in order to ensure personal contribution to sustainability in 2003 (Dobson, 2012).

## **2. METHODOLOGY**

The Research was conducted with a total of 67 teacher candidate students of Kastamonu University, studying in the academic year 2012-2013, 36 Science and Technology Teacher Education students, 31 Social Studies Teacher Education students. The data were obtained by asking 8 open-ended questions to pre-service teachers to understand knowledge of sustainable environmental and ecological citizenship. The data obtained are grouped in terms of content. Qualitative analysis of the data was dubbed namely by abbreviations for Research in Science and Technology Education students in the F1, F2, F3... F36, and for Social Studies Education students S1, S2, S3... S31

## **3. FINDINGS**

Question 1. What think about “the sustainable environment”?

91.66% of Science and Technology Teacher candidates this question, 93.55% of Social Studies Teacher candidates replied this question. 25.81% of candidate answers the question “carry-on the environment transfer to future generations” The answers of the candidates were 22.58% by “to sustain of the environment itself”, 17.74% by “to bring people to make a more livable environment”. F23 Science and Technology Teacher candidates gave answers to the question with “to organize and protect the environment to carry it for future generations”, S28 Social Studies Teacher Candidates state with the response of “to bring people to become more livable state and to continue to provide that” the answers are remarkable.

Question 2. What think about “ecological citizenship”?

This question was replied by 80.56% of the Science and Technology Teacher candidates, and 80.65% of the Social Studies Teacher candidates. 46% of teacher candidates responding to the question “people who are sensitive to the environment”, 27.78% as “citizens who take responsibility for the environment” and 22.22% as “people that contribute to the ecology by their behaviors”. S11 Social Studies Teacher candidates gave answers to the question of with “to protect the environment and nature by fulfilling the duties of citizenship on our part”, Candidates of Science and Technology Teachers F6 with the response “to fulfill the tasks of man by respectful acting to the environment” those responses are noteworthy.

Question 3. What think about “the naturalist”?

This question has been replied by all (100%) of the Social Studies Teacher candidates and of Science and Technology Teacher candidates. A large part, 71.64% of teacher candidates answered the question “the people who live intertwine and in harmony with nature, without harm to the environment”. F2 Candidates of Science and Technology Teachers gave answers to the question as “People who are intertwined with nature, protecting the environment are those who strive to preserve it” shape and F29 as “person who is intertwined with the nature, living according to the laws of nature, uses all the beauties of nature full sense” and S20 Social Studies Teacher Candidate States gave answers, “people’s attitudes towards the environment and how extent sensitive are they by consistency” and S31 “sensitive people living in nature, preserve plants, animals and nature with love and give least loss to nature” those answers draw attention.

Question 4. What is “Organic Product”?

All (100%) of Science and Technology Teacher candidates replied this question, 93.55% of Social Studies Teacher candidates replied this question. 66.15% of teacher candidates answering the question, said “chemical pesticides and additive-free product” and 26.15% said “naturally grown products in natural conditions”. Answers given to the question by F2 the Candidates of Science and Technology Teacher by “any additive-free, all-natural grown product” and S11 Social Studies Teacher Candidates state with the response of “pure naturally grown products without being exposed to any effect” the answer is noteworthy.

Question 5. How do you aware the environmental issues?

97.22 % of the Science and Technology Teacher candidates and 96.77% of the Social Studies Teacher candidates have replied this question. The question was replied by 72.31% of teacher candidates as “protect and not pollute the environment” and 15.38% as “to be conscious of responsibility towards nature”. F4’s answer of Science and Technology Teacher candidates given to the question as “to avoid behaviors that harm the environment and to be conscious of that” and S28’s response of Social Studies Teacher Candidates states with “to seek solutions to environmental problems without ignorance” as the answer is noteworthy.

Question 6. Animal and Plant love; which is more important?

91.67 % of the Science and Technology Teacher candidates and 96.77% of Social Studies Teacher candidates have answered this question. Answering the question, 73.02% of teacher candidates replied “both are important”, 20.63% replied “the love of plants is more important”, 4.76% percent replied “the love of animals is more important” and 1.59% of Social Studies Teachers replied “human love is more important”. Candidate F9 from Science and Technology Teacher candidates gave an answer to the question with the “we enjoy flesh, milk of animals and lots of benefits and love of animals is more important”, F33 “is the source of oxygen supply food for animals and plants, and people so plant love is more important” with the answers S28 Social Science teacher candidate “ecosystem is in order, and if one of them is disrupted ecosystem will be destroyed and both are important” and by S31 “love of plant is important because plants allow many life forms living space” and S8’s reply “human love is more important than if human exists then the protection of animals and plants becomes possible” those answers draw the attention.

Question 7. How do you reach knowledge on the environment?

This question, were answered by the vast majority of candidates of the Social Studies Teacher and Science and Technology Teacher candidates. The answers given to this question were presented in Table 1.

Table-1: “How do you reach information on the environment?” The frequency and percentage of responses to the question

	Science and Technology Teacher		Social Studies Teacher	
	f	%	f	%
Written Media	11	30.56	5	16.13
Audio Visual Media	7	19.45	9	29.03
Internet	23	63.89	14	45.16
Printed Publications	10	27.78	3	9.68
Organizations and Institutions	3	8.34	5	16.13
Adverts, Billboards and Banners	4	11.12	-	-
Congress, Conference and Seminars	3	8.34	-	-
Observation	10	27.78	7	22.58
Experts	1	2.78	6	19.35

Percentages in Table 1, the frequencies of Science and Technology Teacher and Social Studies Teacher of the total calculated according to the number of candidates.

Question 8. Which institutions and foundations have you heard about environmental issues?

This question was answered by the vast majority of candidates of the Social Studies Teachers and Science and Technology Teacher candidates. The answers given to this question were presented in Table 2.

Table-2: “What environment agency or agencies working do you know?” Frequencies and percentages of given responses to the question.

	Science and Technology Teachers		Social Studies Teachers	
	f	%	f	%
World Wild Foundation (WWF)	3	8.34	-	-
(TEMA)Turkish Foundation for Combating Soil Erosion, for Reforestation and the Protection	22	61.11	17	54.84
Greenpeace	1	2.78	7	22.58
Ministries	4	11.11	2	6.45
Province and Township Directorates of Agriculture	5	13.89	-	-
Environmental Protection Foundation of Turkey (TÜÇEV)	1	2.78	-	-
(TÜRÇEV) Foundation for Environmental Education in Turkey	2	5.56	-	-
(TÜRÇEK) Environmental Protection and Greening Agency For Turkey	2	5.56	-	-
(ÇEKÜL)Promotion and Protection of Environment and Cultural Heritage Foundation	1	2.78	-	-
(ÇEVKO)Foundation for Environmental Protection and Packaging Waste	3	8.34	1	3.23
Nature Protection Association	2	5.56	1	3.23
Nature and Environment Foundation (DOÇEV)	-	-	4	12.90
Non-Governmental Organizations	1	2.78	-	-
Provincial and Township Forestry Directorates	-	-	3	9.68

Table-2 percentages, the total frequencies and Social Studies Teacher of Science and Technology Teacher calculated according to the number of candidates.

#### 4. DISCUSSION AND CONCLUSIONS

Major developments in the industry, applications, and increases in production in science, technology are realized in last two centuries. This rapid change in the people’s living conditions and the differences we have cause change as well as in the “Living World”. Here, what we understand from the “Living World”, is that every moment that we interact with everything around us can be described as living and nonliving. Including changes in nature like life, especially in agriculture, forestry, fisheries, such as residential areas are also affected. Also the changes in nature, either directly or indirectly, impact on transport, industry, tourism and other areas such as the economy. Sustainable environment and high quality of life is possible by understanding of nature. If we commit our duties and responsibilities to the nature we can understand it. Today, the rapid degradation of the environment stems from the desire to consume more than nature can give us. Therefore, people equipped with good education must learn to live intimately with nature and to adapt to the changes in it. To give our children who are going to be future citizens a good environmental education, due to interdisciplinary property, environmental education should be given effectively by starting from pre school science education thru primary, secondary and high education levels (Yılmaz, Morgil, Aktuğ, & Göbekli, 2002).

When we look at the education system in the classes that make up a field of its own “environmental education” course content other than a few are going into more detail. Tanrıverdi in his study (2009) having researched on the elementary education programs from the stand point of purpose, content and gains, determined that the environmental concepts are mostly dealt in the scope of Science and Technology lessons and also given to some extent in life science and social studies lessons (Tanrıverdi, 2009).

As a result, pre-school, primary and secondary education students who are at the beginning of their higher education were revealed as insufficient or incorrect information about "sustainable environment". In the same way, for "ecological citizenship" when it comes to knowledge of the students are not mostly sufficient with their existing knowledge, their answers were based on the assumptions. In today's society, "organic products" which are often mentioned were answered by important majority with hearsay ideas. Also on environment-related agencies or organizations, mostly university students and to be organizations that are highly popular are aware, but it has been revealed that a lot of other organizations are not aware of the fact that as a society we don't not show sufficient sensitivity to environment.

In our study, "sustainable environment" and "ecological citizenship" which have an important role in environmental education have been concluded about the education system as insufficient. A training program will be restructured to be more issues in the field of environmental education are required and it should be a stand-alone course should also be considered.

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