

## College Students' Perceptions about the Current and Future Environmental Problems and Their Solutions

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**Abstract:** Since the beginning of 20 th century growing environmental problems has a global dimension. Unless necessary measures are taken, it is predicted to reach dangerous dimensions for human within the next 40-50 years. Therefore, environment education and the importance of positive attitudes and behaviors against the environment are getting more and more important. In this sense, especially, it is expected that people on the higher education to be more sensitive to the environment and environmental problems and to take an active role in the solution of problems. This study aimed to search university students' perceptions about future environmental problems and current environmental problems, suggestions and behaviors for solutions. This study was conducted with 121 students who were attending the Faculty of Education, Vocational School of Health Services and Faculty of Letters. The study was carried out by using qualitative data collection techniques and the results were assessed with the qualitative data analysis methods. As a result of the survey, it was found out that there was not a clear distinction between students' perceptions about current environmental problems and about those in the future. It is understood that they didn't put special effort to protect environment.

**Key words:**Environment • The Perception of Environment Problem • Environment and Geography Education • Today's Environmental Problems • Future's Environment Problems

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### INTRODUCTION

Currently, there are a lot of terms about environment and environmental problem although those terms are used interchangeably and do not mean necessarily mean the same. The term, environment, occasionally refers to the external setting at which all of the living organisms are born, live, maintain all of their relations and share their experiences with non-living organisms [1-4].

Environmental problems are defined as the unfavorable conditions that are rooted in the changes in the ecological balance of nature [2, 5-7]. The sources of environmental problems date back as old as the history of mankind. But with the industrial revolution, the rapid increase in population and over-consumption has started to force the toleration limit of the world.

The process of producing a new environment with different economical activities lead to negative changes, pollution and deterioration in nature which result in various environmental problems [8]. Those problems have serious effects on people, without any restriction on nationality, gender, welfare, illiteracy and also gradually turn the

world into something *non-live able* place. As a result, the important aspect of the current environmental problems is that they are a global threat now [9].

The protection of environment is not only the task of people working in the fields of environment or education, but should be everyone's duty. The environmental awareness is of great importance in solving ecological problems and it is also known that without the awareness, the attempts and plans to protect nature will remain as good intentions [10]. Especially, the considerate people who have received university education are expected to behave more sensitive and to do what they are supposed to protect nature. At this point, there are two things to do:

The aim of environmental awareness, as stated in many studies, is about the knowledge of environment, positive attitudes towards nature and beneficial activities for the environment. Those terms can be summarized as:

**The Knowledge of Environment:** The problems of environment, the solutions for those problems, the recent developments in the field of environment and all of the knowledge about nature.

**Attitudes Towards Environment:** The fear rooted in the environmental problems, anger, worries and values.

**Activities for the Environment:** The authentic behaviors to protect nature.

However, the studies on the environment have shown that the knowledge of environment has weak effect on the actions for the nature and that the attitudes towards the environment have less significant meaning in constructing the knowledge of environment [11-13].

There are many studies, done in Turkey and abroad, about the attitudes towards environment and solutions for environmental problems. The studies done in Turkey were mainly carried out with the students in primary and secondary education levels. However, since the university students are thought to be the most equipped group and since they are considered to be the ones ruling the country soon, the studies done with them are important. Some of the studies done with university students are:

In the study by Soran *et al.*, (2000), the students' knowledge on environment was examined to see whether their knowledge was enough or not [14]. In the study by Yılmaz *et al.*, (2002), the students' knowledge on environment was investigated according to the level of education they received [15]. In the study by Erol (2005), the students were found to have less interest in environment and environmental problems [16]. Karacaoglu and Cabuk (2003) found out that the students' characteristics play a role in their sensitivity of environment [17]. Kaya and Gundogdu (2007) in their study done with geography teachers stated that the teachers did not have enough knowledge and skills about environmental issues but would like to develop themselves [18].

The similar study done by Sama (2003) with candidate teachers showed that the students' gender and the education levels of their mothers and father played significant roles in developing attitudes towards the environment [19]. An important study in this field was the study done by Hacettepe University in Turkey and Heidelberg Education Higher Education Institution in Germany about nature, the awareness of environment and the protection of environment [20].

**The Purpose of the Research:** This study purposed at discovering the perceptions of students, who were attending the University of Adiyaman, towards the present and future environmental problems, their level of awareness, their solutions for those problems and what they did actually for those solutions.

Since the level of pollution in Adiyaman is one of the most alarming ones in Turkey [21] what the students living in this city thought about the environmental problems and what they proposed as solutions for those problems had more meaning for the study. The students were asked the following questions:

- What environmental problems do you think will be the most alarming ones in the world?
- What kind of precautions should be taken to prevent those problems?
- What do you do personally to prevent those problems?
- What are the most alarming environmental problems nowadays for you?
- What should be done to prevent those current environmental problems?
- What do you do personally for those problems?

## MATERIALS AND METHODS

This study was based on qualitative research methods. In order to collect data, the form including 6 open-ended questions was given to the students. This form asked the university students to note down their perceptions of current and future environmental problems and their personal solutions to those problems. After the forms were distributed to the students, the necessary information was given to the students.

**Data Collection Tool:** There was no time limitation for the students who answered the questions in the form. For the data analysis, descriptive statistical and qualitative document analysis methods were used. The descriptive analysis was actually about categorizing what was written and counting them [22].

The descriptive statistics could be defined as the processes of adding the numbers on one variable, describing and then presenting them [23]. At this stage, the students' answers for each question were analyzed and the answers that meant the same but put into words in different ways were categorized under the same headings and then were displayed by tables.

**Sample:** The population of the study was the students who were attending the University of Adiyaman, Turkey. The sample in the study included the 121 students from Faculty of Education, Vocational School of Health Services and Faculty of Letters (Table 1). The sampling strategy was random selection from the volunteered students. A limitation in the study was the number of

Table 1: The Number of Students According to The Schools

Schools	Frequencies	Percentage
Faculty of Education	41	34,4
Faculty of letters	40	33,3
Vocational School of Health Services	40	33,3
Total	121	100,0

students because the university was established in a few years ago and thus the students were only from those faculties. The representation of students was shown in Table 1.

### FINDINGS AND DISCUSSION

The data from the study were analyzed according to the sub questions and then interpreted.

#### What Environmental Problems Do You Think Will Be the Most Alarming Ones in the World?

The answers to this question were coded as:

- Drought and water scarcity (% 48.4)
- Global warming ( % 33.8)
- Environmental pollution and litters (% 16.9)
- Air pollution (% 13.3)
- Decreasing amount of green areas and deforestation (%12.0)
- Ozone layer (% 18.8)
- Ice melting in Antarctica (% 8.4)

As seen in the table, the most important environmental problem for the students was draught and water scarcity. This problem was regarded as the most alarming problem in the future by the 1/3 of the students. This is really a true point. One of the most important problems of today's world is rapid decrease in water resources and increase in the demand of water. In each continent, the Aquifers being overused, over watering, the over consumption of drinking water in big cities and more consumption than the amount of rain filling in Aquifers have recently threatened everyone [24]. This global problem is also Turkey's problem. Today 40% of people in the world have the problem of water scarcity. Increasingly more countries are added to the list. 65% of people are estimated to have the problem of water scarcity around 2050s [25]. According to the data in the 3<sup>rd</sup> Global Environment Report by United Nations Environment Agency in 2002, 1,1 billion people, especially mainly people living in Africa and Asia, are devoid of clean drinking water. Besides, 2,5 billion people lack the water purifier systems [16].

According to the students' views, the second important problem was global warming, but, some students could not explain what they meant with global warming. Ozone layer and ice melting are not directly global warming but the results of global warming. At this point, it could be said that there were some misconceptions among the students. The issue of misconception was supported by Kabapinar's study (2006) on The Perspective towards Global Warming and Ozone Layer, at which he found out that the students, could not define the environmental problems and confuse the sources [26].

The third problem was pollution. This was followed by air pollution, the decreasing amount of green areas and forest fires. It was interesting to see that the problems that students put forward were actually the ones that the world was dealing with closely. As a result, this is an indication that the students were interested in tomorrow's problems. The students' answers, economical crisis (%2.4), noise (%6.5), hunger (%4.8), illness (%1.6), slums (%1.2), unemployment (%2.4), over consumption (%1.2), wars (%4.8), uncertainty (%2.4), were considered to be rooted in their personal views. Cabuk and Karacaoglu (2003) found out that there were some differences about their views of environment because of their personal characteristics [17].

#### What Kind of Precautions Should Be Taken to Prevent Those Problems?

The answers were:

- Less water consumption (%49.6)
- Education about environmental awareness (%36.3)
- Reforestation (%22.9)
- Preventing air pollution (%38.7)
- Trash collection (%18.1)
- No suggestion (%9.6)

The list shows us that the most important precaution to be taken is less water consumption. This result was considered to be the direct result of frequent water cuts in the summer, less rain in the winter and the troubles in finding clean water. This answer was followed with educating people on environmental awareness, reforestation, preventing air pollution, trash collection. The answer, trash collection, shows us that this is not a problem of future's world but a current problem. Since the students did not exactly tell what types of trash should be collected, this can be seen as a problem. It was observed that the students' precautions were immediate solutions to the environmental problems and they were

about the savings of natural sources at all. Besides, few answers were put as no suggestion (%6.5), punishments should be put into action (%3.6), people should personally take part (%2.4), governments should be enthusiastic (%4.8), countries should work together (%1.2). This situation was considered to be rooted in the local context where the students lived. This idea was also supported by Baylan (2009). According to Baylan, people living in different contexts have different ideas about the solutions to environmental problems [27]. Another study supporting this idea is Sama's study (1997) [28]. In this study, it was found out that the students living in different places have different awareness levels of environment. As a result, the roles of age, education, political views, religion, settings and gender in a society have been studied more recently [29, 30].

#### **What Do You Do Personally to Prevent Those Problems?**

The answers to these questions follow:

- I consume water economically (%52.0)
- I collect garbage and keep environment clean (%37.5)
- I do nothing (%29.0)
- I warn the people around me (%15.7)
- I join the forestation activities (%12.1)

In order to prevent the environmental problems of future world, most of the students told that they consumed water economically and collected garbage. These are the problems that will cause trouble for them. However, using water economically might be the cause of financial worries instead of protecting nature. This idea is also supported by Tuna (2007). Tuna stated that when faced between deciding on environmental worries and financial worries, people tend to prefer financial matters [31]. Dunlap *et al.*, (1992) found out that financial worries came first before environmental worries. There was no explanation about how the students were collecting garbage although collecting garbage was a positive action [29].

The students' answers, I warn the people around me, I join the forestation activities, show that they have positive perception towards the environment. Besides, when we think about the answers, I consume electricity economically (%3.6), I use recyclable boxes (%2.4), I do my activities in control, from the students, it can be said that the students do the sort of activities to protect the environment. However, the answer, I do nothing, with %29 shows that the students take the subject less serious and act insensitive.

**What Are the Most Alarming Environmental Problems Nowadays for You?:** This question aimed at collecting the students' views on the environmental problems that bother them. The students' answers are:

- Garbage and pollution (%72)
- Air pollution, fume from cars and home heating (%43.5)
- Lack of water (22.9)
- Noise (10.8)
- Deforestation and forest fires (7.2)

When the students' answers were analyzed, the problems that cause problems most are garbage, environmental pollution. However, it was also seen that the students made a difference between garbage and environmental problems and air pollution, fume from cars and home heating. These problems also are the three most frequently stated environmental problems of future world. As a result, it will not be a mistake to state that the students think that the problems that are causing problems for them now will be the problems of future world. The answers, violence against women (%2.4), customs murders (%6.0), male female inequality (%7.2), economical situations (%4.8), jargons (%1.2), not being free (%2.4), spitting (%3.6) are thought to be affected by the local characteristics. This was also supported by Baylan (2009) [27].

**What Should Be Done to Prevent Those Current Environmental Problems?:** This question aimed at finding out the students' ideas on what actions should be done to prevent current environmental problems. Their answers are:

- People should be educated about environment (%61.7)
- Consuming water, electricity and other natural sources economically (%24.2)
- No pollution and more environmental awareness (%14.5)
- No idea or solution (%12.1)
- Systematic garbage disposal (%12.1)
- Municipality working efficiently (%12.1)
- Government should take some precautions (%8.4),

As seen in the list, the students stressed the importance of education on environment as the first thing to do. It was followed by their answer, using resources economically, as a solution for environmental problems. The other answers were like punishments (%1.2), rewards (%1.2), cleanliness as a law (%3.6), ban on hunting (%3.6), Those answers showed that the students were expecting actions from someone else, trying to prevent the problems by taking harsh precautions and punishments.

The students' stress on education was an important issue. The fundamental condition to live in a convenient place in the future depends on the change in people's perspectives on environmental awareness, their sensitiveness towards the nature, their attitudes and behavior. This can be possible only with the radical change in our understanding of environment [32]. It is necessary to raise awareness in environment and environmental education and to educate them to create changes in their behavior [33]. Environmental education aims at providing objectives and methods that will enable individuals to be more responsible and ready for the problems that can be faced while taking precautions for environmental troubles [34].

**What Do You Do Personally for Those Problems?:** This question aimed at discovering what kind of actions the students did to prevent the environmental problems that bothered them. Their answers:

- I collect garbage, not litter (%53.2)
- I use water economically (%48.4)
- I do nothing (%27.8)
- I warn people around me (%14.5)
- I do what I am supposed to do (%2.4) tür.

When we look at their answers, we can say that the students are sensitive to the environment. However, the answer, I do nothing (%27.8) is an important indication showing that some students are not that much sensitive. Besides, the answer, I do what I am supposed to do, is a general explanation and does not show a specific behavior. The other interesting point in this section is the similarity between what the students do personally to prevent the current environmental problems and what they do personally to prevent the future problems. The students' using water economically and not throwing garbage are two positive items showing that they act responsible for environment?.

## **CONCLUSIONS AND SUGGESTIONS**

This study investigated what the college students' perspectives on the current and future environmental problems were, what their ideas about what to do to prevent these problems were and what they did personally about this issue. Because of the type of education or training they received in the university, the sort of services they would work in the future was thought to include many sectors, graduates of the Faculty of Education working in the education field,

graduates of the Vocational School of Health Services in the medicine field. As a result, the students' perception of environmental problems and their attitudes and behavior about the solutions to those problems raised the level of importance of the study.

As a result of the study, we can conclude that the students had some views on environmental problems. For the students in the study, the most alarming current and future problems were global warming, water scarcity, draught, environmental pollution and garbage. The findings also showed that there was no clear difference in the perspectives on current environmental problems and future problems that the students assumed that those problems were the same and that they confused about the results and causes of environmental problems. For the solutions, the students mainly stressed the issues of educating people on environment and the use of water and other natural resources economically. The personal actions the student did to prevent environmental problems included collecting garbage, using water economically, warning the people around them, or doing nothing.

As a consequence, it is not possible to say that the students had positive attitudes and behavior of producing solutions to environmental problems. However, it is comforting to know that they did not pollute the nature and used water economically. For positive attitudes and behaviors towards environment play an important role in providing support for solving environmental problems. This idea is also supported by Kabapinar (2006) and Uzun and Saglam (2005). They suggested that the education of the students, from primary school education level to university level, their awareness on their actions in the nature, the acknowledge of their actions played a key role in raising the sensitivity to the environment. It was also seen that the students held the authorities as the main actors for providing solutions to the problems [26, 35].

One of the items found in the study was the fact that the university students were not sensitive enough for the environmental problems and also could not produce solutions to those problems. This is thought to be rooted in the lack of their education on environment.

For developing positive attitude and behavior and producing solutions to environmental problems can take place only with the high levels of conscienciness of environment. The studies by Erol (2005) and Topaloğlu (1999) support this idea [16, 36]. It was also noted in the study that the issue of environment was a topic that everyone should be interested in and that the problems can't be solved by technology or regulations on law and

that the level of awareness is a key factor in preventing environmental problems. As a result, the following suggestions were listed:

People should start receiving environmental education at early ages. The earlier people start their environmental education, the better it is. According to De Haan (1991), the attitudes and interests that are shaped in pre-school education period and at later stages base the future behaviors. Environmental education should also aim at developing the skills of questioning, problem solving and decision making [37].

There should be some legal regulations on the practical aspect of environmental education.

By revising the environmental education curricula at all educational institutions, starting with primary schools, those programs should be redesigned to include practice. There should be also some arrangements in the plans that can coordinate activities at schools and out of schools. According to Ozaner (2004), in order to obtain the desired outcomes from the environmental education, the education should be arranged to include activities at schools and outside schools [38].

The environmental education in the university level should be organized to provide solutions and should be done in the nature. According to Yildiz (2009), since the information is gained from the primary source in the authentic setting, environmental education given in the nature teaches the scientific process more conveniently [39].

The environmental education in the university should also involve the type of training based on ecology. This type of training includes workshops from different disciplines in order to change the students' scientific knowledge, skills and attitudes.

The local authorities should take initiatives by organizing project competition on environmental protection, should put some projects into action and reward people working on this topic.

There should be collaboration between universities and local authorities. While the local governments are motivating local people to join in the activities about environmental awareness, the universities should support the youth. For, according to Gungor (1995) in order to gain successful results in the environmental education, the first thing to do is starting with youth [40].

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