The Effect of Education Programs on Students' Attitudes Towards Environmental Problems, A Case Study: Ege University (Izmir-Turkey)

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ABSTRACT

This study was conducted with 184 female and 112 male students at Ege University during the 2022/23 academic year, funded by the TUBITAK 2209/A University Students Research Projects program. The study aimed to determine whether education and training programs influence the attitudes of students at Ege University towards environmental issues. To achieve this, the first stage utilized the "Scale of Attitudes towards Environmental Problems," which is appropriate for university students. In the second stage, we examined the educational programs and course contents of the participating students to investigate any subjects related to environmental education within the course offerings. For this purpose, we referenced course catalogs published on Ege University's website. Data analysis was performed using the IBM SPSS Statistics 21 program. An independent groups t-test was applied when the independent variable contained two categories, while one-way analysis of variance (One-Way ANOVA) was used when the independent variable had more than two categories. The significance level was set at 0.05 for this study. According to the results, there were no significant differences in the attitudes of the students at Ege University towards the environment based on gender, parental education level, family income, or place of residence. Additionally, there were no significant differences in students' attitudes towards the environment between those who took environmental courses and those who did not. However, when attitudes towards environmental issues were analyzed in relation to the field of study, a significant difference was found.

Keywords: Environmental problems, environmental attitude scale, Ege University.

INTRODUCTION

Since the 1970s, when environmental problems gained importance, the concept of environment has been one of the most frequently used concepts and has been defined in various ways. For example, the physical-chemical conditions and other living things in the place where the living creature is located are defined as the environment of that living creature, while in the ecological sense, it is stated that the environment includes all living and non-living things related to the individual (Berkes and Kışlalıoğlu, 1990). Although there are various definitions, the common one is that the environment consists of living and non-living elements and that there are mutual relations between them. In the process of these ecological relations, the ability of both living organisms and the non-living environment to maintain their existence and life without any major damage reveals the concept of "ecological balance". However, as an element of the environment, human beings have generally been the problematic party in these relations. Indeed, it has long been known that irresponsible environmental behavior is at the root of many environmental problems and issues. Undoubtedly, one of the most important influences on behavior is attitude (Bradley et al. 1999). Attitude is a tendency consisting of a highly consistent (continuous) combination of feelings, thoughts, and behaviors developed towards an object, a situation, a phenomenon, or an event. People develop their attitudes

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throughout their lives, sometimes based on their own experiences, sometimes based on what other people convey, and sometimes based on the interaction of both (Ülgen, 1997). Young people's environmental attitudes are particularly important because young people will ultimately be affected by and have to find solutions to environmental problems resulting from today's actions. Therefore, education, which is the process of raising awareness, knowledge, skills, and attitudes in individuals, has great importance in solving environmental problems. Indeed, educators and environmental experts have repeatedly emphasized that a solution to the environmental crisis requires environmental awareness and proper understanding, which must be deeply embedded in the education system at all levels of schooling (Shobeiri et al. 2007).

Like environmental problems, the first internationalization of the phenomenon of environmental education was the UN Conference on the Human Environment in 1972. With the statement in the declaration of the conference that "humanity must protect and improve the environment for present and future generations", attention was drawn to the attitudes and behavior of people towards their environment. In 1975, the International Environmental Education Programme was prepared in cooperation with UNESCO and the UN Environment Programme (UNEP), and in 1977 an Intergovernmental Conference on Environmental Education was held at the ministerial level in Tbilisi. The Tbilisi Declaration is of great importance in terms of determining the goals, objectives, and principles of today's environmental education programs. In the Tbilisi Declaration, the aims of environmental education are listed as awareness, knowledge, attitude, skills, and participation. Therefore, a well-organized environmental education should be programmed in such a way that all these five steps can be achieved.

Many studies try to reveal students' attitudes toward the environment and environmental problems and the factors affecting these attitudes. In the studies, the relationships between students' age, gender, department, grade level, environmental knowledge, educational status of the family, or monthly income of the family, and students' attitudes towards the environment were examined. In some of them, a significant relationship was found with attitudes, while in some of them, statistically significant relationships could not be revealed (Şama 2003, Atasoy 2005, Güven 2013, Kanbak 2015, Demir 2016, Bülbül and Yılmaz 2019, Asrib and Ibrahim 2023). For example, Asrib and Ibrahim (2023) stated in their study that the environmental knowledge of the students was not effective in their attitudes toward the environment, therefore, environmental protection awareness was still in the understanding stage and could not reach the application stage.

The environment is an important part of education programs in Turkey from primary education onwards. Within the scope of primary education, students are given basic information about environmental protection and sustainability. At higher levels of education, more detailed topics such as environmental protection strategies, environmental science, climate change, ecological systems, and methods to protect the environment are covered. Thanks to the environmental education provided, it is expected to raise individuals with high environmental awareness and responsibility for the environment. However, studies on environmental problems show that individuals can define environmental problems, and have knowledge about their causes, but their attitudes towards environmental problems are at medium or low (weak) levels (Görümlü 2003, Erol 2005, Köğce et al. 2009). From this point of view, the main question of our research is: "Does the faculty, department or division of study have an effect on university students' attitudes towards the environment?". As the sample of the study, Ege University, the oldest university in Izmir, was chosen.

METHOD

Research Model

A descriptive research method was used in the study. Descriptive research aims to describe a past or current situation as it exists. In this research model, the event, individual or situation subject to the study is tried to be defined as it is in its conditions (Epçaçan, 2016). In addition, since both quantitative and qualitative data were analyzed in the study, our method is also a mixed research method.

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Working Group

The study group of the research consists of a total of 296 students, 184 women and 112 men, who were randomly selected and studied in different departments at Ege University in 2022-2023.

Data Collection Tools

The data of the study were collected using the attitude scale developed by Güven (2013). The scale is organized as a triple Likert scale. The respondents were given 2 points for "agree", 0 points for "disagree", and 1 point for "undecided" responses to the positive items. This scoring was reversed for the negative items. In addition, questions that we thought might affect student attitudes, such as students' gender, mother/father education level, monthly income of the family, where the family lives, and whether they have taken environmental education courses, were also included in the study. While some of the data were collected through face-to-face interviews with students, some of the data were collected through Google Forms since universities switched to online education after the earthquake disaster in the southeast of Turkey in February 2023.

In line with the aims of the research, the information package/course catalogues on the Ege University web page were scanned, and courses related to environment, environmental education, and environmental problems were determined (https://ege.edu.tr/tr-0/anasayfa.html).

Analyzing the Data

The IBM SPSS Statistics 21 program was used to analyze the data obtained in the study. Independent Groups t-test was used when the independent variable had two categories, and one-way analysis of variance (One-Way ANOVA) techniques were used when the independent variable had more than two categories. In the study, .05 was accepted as the significance level.

RESULTS AND CONCLUSION

Examination of Information Package/Course Catalogues

As a result of scanning the course catalogs of 12 faculties and 1 Vocational High School (Ege Vocational High School) included in the Ege University Information Package, 7 faculties and 5 programs within the school are named environmental education or related to the environment (sustainable development, renewable energy sources, chemical waste and environmental pollution environmental awareness, environmental chemistry, etc.) it has been observed that there are compulsory/elective courses. On the other hand, it was observed that there were neither compulsory nor elective courses related to the environment in 5 faculties and 9 programs within the school of higher education. Apart from this, environmental and environmental relations courses are also in the Ege University shared elective course pool. When 296 students participating in the survey were asked whether they took courses related to the environment, 171 students (57.8% of the participants) stated that they did not take any courses.

Environmental Attitude

In the study, the relationship between students' attitudes towards the environment and their gender, mother's education level, father's education level, monthly income of the family, the place where the family lives, the faculty of study, and whether they have taken courses on environmental education or environmental problems was examined. In this context, the results of the data analysis are as follows.

Attitude towards environmental problems	Gender	n	$\bar{x}$	ss	t	p
	Female	184	72,38	7,51	-1.35	.18
	Male	112	73,79	9,92		

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It was determined that there was no significant difference (t(282)=-1.35, p>.05) in attitudes towards environmental problems in terms of gender. According to this result, it was seen that the attitudes of women and men towards environmental problems were similar to each other.

	Course-taking status	n	$\bar{x}$	ss	t	p
Attitude towards environmental problems	No	171	73,5497	9,37278	1.19	.24
	Yes	125	72,3520	7,34765		

It was determined that there was no significant difference (t(294)=1.19, p>.05) in attitudes towards environmental problems in terms of whether they had taken elective/compulsory courses related to environmental problems or environmental education before. According to this result, it was seen that the attitudes towards environmental problems of those who took the course and those who did not take the course were similar to each other.

Mother Education Status

	n	$\bar{x}$	ss	F	p
Primary School	86	72,37	8,90	.75	.55
High School	106	73,58	8,84		
Secondary School	42	71,92	6,28		
University	62	73,80	9,05		

It was determined that there was no significant difference (F(3-292)=.75, p>.05) in attitudes toward environmental problems in terms of the mother's education level. According to this result, it was seen that the attitudes towards environmental problems in terms of mothers' educational status were similar to each other.

Father's Education Status

	n	$\bar{x}$	ss	F	p
University	85	73,45	7,57	.56	.64
Secondary School	62	73,38	8,55		
High School	97	73,20	8,98		
İlkokul Mezunu	52	71,65	9,47		

It was determined that there was no significant difference (F(3-292)=.75, p>.05) in attitudes towards environmental problems in terms of the father's education level. According to this result, it was seen that the attitudes towards environmental problems in terms of the father's educational status were similar to each other.

Monthly income

Income	n	$\bar{x}$	ss	F	p
5500-10.000	53	71,62	9,74	.67	.57
15.000+	162	73,32	8,75		
1000-5500	13	72,30	5,97		
10.000-15.000	68	73,61	7,59		

It was determined that there was no significant difference (F(3-292)=.67, p>.05) in attitudes towards environmental problems in terms of the monthly income of the family. According to this result, it was seen

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that the attitudes towards environmental problems in terms of the monthly income status of the family were similar to each other.

Where the family lives

	n	$\bar{x}$	ss	F	p
City	247	73,32	8,31	.79	.45
District	34	71,58	9,36		
Village	15	71,73	11,12		

It was determined that there was no significant difference (F(2-293)=.79, p>.05) in attitudes towards environmental problems in terms of where the family lived. According to this result, it was seen that the attitudes towards environmental problems were similar to each other in Terms of where the family lived.

Investigation of attitudes towards environmental problems in terms of the faculty/college of study

	Sum of squares	sd	Mean squares	F	p
Between groups	1483,955	11	134,905	1,892	,04*
Within groups	20248,474	284	71,297		
Total	21732,429	295			

*p<.05

It was determined that there was a significant difference (F(11-284)=1.89, p<.05) in attitudes towards environmental problems in terms of faculty/school of study. To determine from which group this difference emerged, the LSD test, one of the post hoc tests, was conducted.

	n	$\bar{x}$	ss	Variation
Dentistry	9	70,44	15,32	Ege Vocational School- Dentistry, Education, Economics, and Administrative Sciences, Nursing
Pharmacy	4	73,00	11,48	
Literature	26	75,69	8,71	
Ege Vocational School	12	78,00	7,01	
Education	122	72,13	7,51	
Science	23	75,52	8,07	
Nursing	9	70,22	8,71	
Economics and Administrative Sciences	20	68,05	7,09	
Communication	17	73,76	10,37	
Engineering	31	74,64	10,91	
Medicine	5	71,20	3,42	
Agriculture	18	74,27	4,58	

According to the LSD test, the attitudes of students studying at Ege Vocational School towards environmental problems are more positive compared to students studying at the Faculty of Dentistry, Education, Economics and Administrative Sciences and Nursing.

CONCLUSION

According to the research results, there was no difference in the attitudes of the students studying at Ege University towards the environment according to gender. This result is in line with the studies of Teyfur

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(2008), Özay Köse (2010), Genç and Genç (2013), Karadağ and Acar (2020). However, some studies indicate that girls form significantly more positive attitudes towards the environment than boys (Şama 2003, Öcal 2013, Naz et al. 2023).

As with gender, no significant relationship was found between the mother's education level, the father's education level, the monthly income of the family, the place of residence of the family, and students' attitudes. When the literature is examined, it is seen that some studies (Genç and Genç 2013, Öcal 2013) have similar results to our study, while some studies (Şama 2003) have significant relationships different from our study.

One of the other analyses conducted in the study was whether the courses on environmental problems or environmental education have any effect on students' attitudes toward the environment. Accordingly, 171 of the students who participated in the research stated that they did not take such a course, while 125 of them said that they took an environmental course. However, the analysis showed that there was no significant difference between those who took environmental courses and those who did not in terms of their attitudes toward the environment. A similar result is observed in Asrib and Ibrahim (2023). However, the main goal of environmental education is to raise awareness of all segments of society about the environment, to gain positive and permanent behavioral changes towards the environment, and to realize active participation. In this case, it can be concluded that students taking environmental education courses do not reach the main objectives of the course. This may be related to the content of the course, the way the course is taught, or the course hours. However, it should be noted here that, according to the survey results, Ege University students' attitudes towards the environment were high. The highest score that can be obtained on the scale applied is 90, and the average of the students participating in the survey is 73.07, which is a very high average.

When the attitude towards environmental problems was analyzed in terms of the faculty of study, it was found that there was a significant difference. Accordingly, the students studying at the Ege Vocational School have more positive attitudes toward environmental problems than the students studying at the Faculties of Dentistry, Education, Economics and Administrative Sciences, and Nursing. A similar result is also observed in the study of Özgen (2011). In his study on pre-service teachers' attitudes towards environmental problems, Özgen found statistically significant differences between pre-service teachers' department of study and their attitudes towards environmental problems. The reason for the significant difference in attitudes towards environmental problems between faculties of education cannot be clearly revealed (at least with our current data). For example, when we look at the course catalogs of these faculties with the idea that the reason for this difference may be related to the weight of environmental courses in their curricula, it is seen that there is a course called "Environmental Health and Nursing" in the Faculty of Nursing, a course called "Environmental Economics and Policy" in the Faculty of Economics and Administrative Sciences, courses called "Environmental Education", "Sustainable Development and Education", "Chemical Wastes and Environmental Pollution" in elective courses in the Faculty of Education, and there is no environmental course in the Faculty of Dentistry. In Ege Vocational School, the elective courses include "Environmental Protection", "Renewable Energy Resources", "Renewable Energy Technologies", "Energy Efficiency" and "Environment and Human Health". In this context, for example, although it can be said that students' attitudes towards environmental problems are relatively lower than those of Ege Vocational School due to the absence of an environmental course in the Faculty of Dentistry, it is not sufficient to explain the difference in attitudes towards the environment between faculties. Therefore, perhaps the reasons for this difference can be emphasized in another study that can be planned in the future. Again, as stated above, the fact that Ege University students' attitudes towards the environment (average 73.07) were quite high, regardless of whether they took environmental courses or not, is another issue that we think needs to be studied. For example, some studies show that when people are directly confronted with serious environmental problems, they become more concerned about the environment, and their attitudes towards the environment change (Inglehart, 1995; Gelissen, 2007). Şama (2003) stated in his study that the attitudes towards the environment of those living in places with a large population (1 million and over) are more positive than those living in places with a small population (20 thousand and less), and explained this

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difference with the intensity of environmental problems in settlements with a large population. In this context, the city of Izmir, where Ege University is located, affects Ege University students' attitudes towards the environment with its population of approximately 5 million and many environmental problems. But this is an issue that needs to be studied. As a result, in our opinion, it would be appropriate to organize the questions accordingly to collect this data in the new environmental attitude scales to be created. Again, in our opinion, conducting a similar study with students from other universities in the city of Izmir may provide a more accurate understanding of the factors affecting students' attitudes towards the environment.

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