



## STUDENT TEACHERS' ATTITUDES TOWARDS ENVIRONMENTAL PROBLEMS AND THEIR LEVEL OF ENVIRONMENTAL KNOWLEDGE

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### ABSTRACT

This study primarily aims to investigate primary school student teachers' environmental knowledge, to find out their attitudes about environmental problems and to see whether their attitudes vary significantly depending on some variables. As data collection tools, the Environmental Attitude Inventory and the Environmental Knowledge Test, adapted by Uzun and Sağlam (2006), were used. The data were collected in the 2007–2008 academic year. Five hundred forty-two student teachers from Cukurova University, The Elementary Education Department participated in the study. For the analysis of the data, t-test and variance analysis were used.

The results based on the mean values showed that the Environmental Behaviour sub-scale was 37.63 and the Environmental Opinion sub-scale was 29.55. The total score of the Environmental Attitude Inventory was 67.19 and the total score of the Environmental Knowledge test was 17.08. According to the grade variable, the meaningful differences were found in favor of the fourth grade students at the Environmental Behaviour sub-scale and the Environmental Knowledge test. As for gender, the meaningful differences were found in favor of the female students in the Environmental Behaviour sub-scale and in favor of the male students in the Environmental Opinion sub-scale. As for taking the Environment Course or not, the differences among scores were found to be meaningful in favor of the student teachers who took this course at the Environmental Behaviour sub-scale.

**Key Words:** *Environmental training; environmental knowledge; environmental attitude; student teacher.*

### ÖZET

Bu araştırmanın temel amacı, sınıf öğretmeni adaylarının çevre bilgisi ve çevre sorunlarına yönelik tutumlarını belirlemek ve bunların bazı değişkenler açısından anlamlı farklılıklar gösterip göstermediğini incelemektir. Verilerin toplanmasında Uzun ve Sağlam (2006) tarafından geliştirilen Çevresel Tutum Ölçeği, Çevre Bilgisi Testi kullanılmıştır. Veriler 2007–2008 öğretim yılı bahar döneminde ÇÜ Eğitim Fakültesi, Sınıf öğretmenliği bölümünde okuyan 542 öğrenciden elde edilmiştir. Verilerin analizinde t-testi ve varyans analizleri kullanılmıştır.

Verilerin analizi sonucunda hesaplanan aritmetik ortalamaların, Çevresel Davranış alt ölçeği için 37.63; Çevresel Düşünce alt ölçeği için 29.55; Çevresel Tutum Ölçeği toplam puanları için 67.19; Çevre Bilgisi Testi için de 17.08 olduğu görülmüştür. Ortalamalar arasındaki farklar sınıf düzeyine göre Çevresel Davranış alt ölçeği ile Çevre Bilgisi Testi'nde dördüncü sınıf

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öğrencileri lehine anlamlı farklar göstermiştir. Cinsiyete göre elde edilen puanlar arasındaki farklılıklar, Çevresel Davranış alt ölçeğinde bayan öğrenciler; Çevresel Düşünce alt ölçeğinde ise erkek öğrenciler lehine istatistiksel olarak anlamlı bulunmuştur. Anne-baba eğitim düzeyi, anne-baba mesleği ve ailenin aylık toplam geliri değişkenleri bakımından öğrencilerin puanları arasında anlamlı farklılıklar bulunmamıştır. Çevre dersi almış olma-olmama bakımından elde edilen puanlar arasındaki farklar, sadece Çevresel Davranış alt ölçeğinde çevre dersi alan öğretmen adayları lehine anlamlı bulunmuştur. Çevreyle ilgili bir kuruluşa üye olma-olmama durumuna göre ise puanlar arasında anlamlı fark bulunmamıştır.

**Anahtar Sözcükler:** Çevre eğitimi, Çevre bilgisi, Çevresel tutum, Öğretmen adayı.

## INTRODUCTION

Environment is a combination of social factors and physical, chemical and biological forces which may be directly or indirectly effective on living organisms' and human beings' activities in the short or long term (Çetinçelik, 1987 in Şama, 1997, s.7). Besides, as a whole, environmental training is a process of preparing a world society, individually and socially, who cares environment and environment-related problems and who shows knowledge, behaviour, motivation and skills which are required to solve and to prevent today's and future's environmental problems (Ayvaz, 1998, s. 98).

In recent years, environmental sensitivity has been centered in the domain of environmental education by environment specialists and it has been used within a sense of emphatic perspective into the environment (Hungerford and Volk, 1990; Peterson, 1982; Sward and Marcinkowski, 2001; in Kim, 2003, s. 12). In developing environmental sensitivity, awareness and aims about attitudes are very important. Environmental awareness-related objectives aims at helping social groups and individuals to develop an awareness and sensitivity towards the environment, itself and environmental problems. Besides; attitude-related objectives help them to constitute a set of values about environment and to develop a feeling of responsibility and motivation for active participation into protection and improvement of the environment (UNESCO, 1978; in Kim, 2003, s.12). One of the pre-conditions in establishing sensitivity, values and attitudes at individuals is the knowledge about environmental issues. In order to solve environmental problems, education poses a significant responsibility in gaining knowledge and skills for active participation of people (Jordan, Hungerford, & Tomera, 1986; in DiEnno & Hilton, 2005, s. 14). It has been proposed that there is a close relationship between developing positive attitude towards environment and knowledge about environment. School has an important role in shaping these attitudes. This proposal implies that "one has to have an awareness and a body of knowledge about environment to care his environment" (DiEnno & Hilton, 2005, s. 16). Research findings in the related field have shown that behaviours based on environmental responsibility can be gained through acquiring detailed knowledge on that issue and knowledge influences individuals' attitudes. Also, individuals decide on their environment-related actions through their already acquired knowledge, so it can be said that establishment of true and detailed knowledge about environment is one of the appropriate ways for solution of environmental problems (Bailey & Watson, 1998; Tanner 1980, Hungerford & Volk, 1990; Chawla 1998; Newhouse, 1990, in Yılmaz, Bone & Andersen, 2004).

The Turkish Education System Primary School programme has also taught that a primary school graduate citizen has already learned to care all living and non-living organisms in his surrounding, to love and to protect them (Vural, 1999, s. 6). However; when different pollution types which are influential on daily life such as environment, noise, air, water

pollution and traffic problem are considered, it can not be said that individuals have already acquired environment consciousness and sensitivity. As Güney (2004, s.5) has stated, environment has been consumed unconsciously and in an unsensitive manner, so the consequences of those behaviours can not be ignored now. They also threaten our future. Gilbert (1997, s. 69-74) has said that these anxieties have increased the emphasis on environmental issues in training citizens.

The studies have indicated that there is a parallelism between how rich pre-school children's interaction with objects in their education atmosphere and what kind of perceptions they acquire about their environment (Elliott, 2003; Özdemir and Uzun, 2006; Bowker, 2007). The way children acquire their perception of environment works as a base for children's cognitive, emotional and physical developments (Phenice and Griffiore, 2003, s.167). Also, emotional behaviours are acquired more effectively when children are quite young. When these two beliefs are considered, children's primary school experiences and their primary school teachers have gained more attention. Therefore; the significant changes in the curriculum of primary school programs, developed by the Ministry of the National Education in 2005, can be regarded as an important step for environment education (Alim, 2006, s. 604-608). According to the previous primary school program, the themes about environment were covered in the 4th and 5th grade Social Sciences course and 4th, 6th and 7th grade Science course. However; the revised primary school programs have started to focus on environment-related issues, starting from the Knowledge of Life course (1st, 2nd and 3rd grades) to the Social Sciences course (4th, 5th, 6th and 7th grades). In addition to that, the scope and the quality of environmental issues in the syllabus of the extended Science and Technology course (4th – 8th grades) have been increased.

With the content changes in the new primary school curriculum and especially rising attention in gaining emotional skills, it has been proposed that students' awareness about environmental problems should be increased. These revisions highlight the need of teachers who will be following these changes in classrooms. Different from the old system, the new primary school program has not given importance to memorization. Instead, it has based on the implementation of knowledge and skills into the actual life by relating subject themes into each other and establishing a complementary approach among them. Also, a more effective environmental education can be done by enriching student-centered class activities. This posits that primary school teachers should be trained in a way that they are equipped with environmental knowledge and positive attitude and behaviours towards environmental problems. Thi Than (2001; in Özden, 2008, s. 42) and Vlaardingerbroek and Neil Taylor (2007, s.121) have mentioned that "teacher" is one of the most important factors in determining the quality of environment education in primary schools, so the quality of environment education depends on teachers' awareness about environmental problems, environment protection and education (Özden, 2008, s.42).

A revision of the related studies has shown that researches have mostly been conducted about children's environmental knowledge and their attitudes towards environment (Atasoy, 2005; Tecer, 2007; Erten, 2005; Uzun and Sağlam, 2006, 2007; Özdemir and Uzun, 2006; Özdemir, 1998; Bowker, 2007; Magorzata Grodzi, Oska-Jurczak, and Nieszporek, 2007; Lesson, Stanisstreet and Boyes, 1997). However; the studies about teachers who function as a bridge in establishing attitudes and in acquiring knowledge, have been very scarce (Vlaardingerbroek and Taylor, 2007; Özden, 2008; Engin, 2003; Altın, 2001; Erol, 2005; Erten, 2005). Therefore; a study aiming to investigate primary school student teachers' environmental knowledge and their attitudes towards environmental problems has been needed. In line with this main objective; the research questions of this study are as below:

- (1) What is the level of student teachers' Environmental Attitude Inventory scores and Environmental Knowledge Test scores?
- (2) Are there significant differences between student teachers' Environmental Attitude Inventory scores and Environmental Knowledge Test scores in terms of their grade, gender and, whether they have taken the "Environment" course or not and whether they have a membership into an environmental organization or not?

## **METHOD**

### **The Research Model**

This is a descriptive and survey type-study, aiming to investigate student teachers' environmental knowledge and their attitudes towards environmental problems in terms of some variables.

### **Population and Sample**

The population of the study was student teachers from the University of Çukurova, the Faculty of Education, Elementary Education Department. As the population was easily accessible, no sampling was done. 146 first-year students, 114 second-year students, 118 third-year students and 164 fourth-year students -totally 542 student teachers- participated in the study. There were 321 female and 217 male participants but 4 participants did not mention their gender. 135 of the student teachers (24.9 %) stated that they took the elective environment course, 407 of them (75.1 %) stated that they did not take any academic course about environment. 23 of the student teachers (4.2 %) stated that they had a membership of an environmental organization. These organizations were TEMA (14 members), Green Peace (1 member), Turkey Environment Foundation (TEF) (1 member), Society Volunteers Foundation (1 member), Association in Support of Contemporary Living (1 member). However; 518 of them (95.7 %) stated that they did not have a membership of an environmental organization.

### **Data Collection Tools**

In this study, the Environmental Attitude Inventory (EAI, hereafter) developed by Uzun and Sağlam (2006) and the Environmental Knowledge Test (EKT, hereafter) were used as data collection tools. The EAI had a 5-likert type scale (always-never). It had two sub-scales as environmental behaviour and environmental opinion. The reliability coefficient of the EAI was 0.80 and the explained variance rate was 58.2 %. The EKT consisted of 25 questions exploring knowledge towards environment. Its reliability coefficient based on Kuder-Richardson 21 formula was 0.89. The lowest and the highest probable score to be taken from the Environmental Behaviour sub-scale were between 13-65, they were between 14-70 for the Environmental Opinion sub-scale, they were between 27-135 for the EAI and finally, they were between 0-25 for the EAI.

### **Data Analysis**

For the analysis of the data, descriptive statistics were used. In addition to that, one way ANOVA analysis was conducted for multi-comparisons depending on the characteristics of the independent variable. For pair-comparisons, t-test was used.

**FINDINGS**

**Findings about student teachers' EAI and EKT scores**

Table 1 illustrates the Education Faculty students' means and standard deviations which they took from the Environmental Behaviour and Environmental Opinion sub-scales and from the EAI and the EKT.

**Table 1.** The means and standard deviations taken from the EAI and the EKT by student teachers

	N	$\bar{X}$	Ss
1. Environmental Behaviour sub-scale	542	37.63	7.99
2. Environmental Opinion sub-scale	542	29.55	4.42
3. The EAI total scores	542	67.19	8.39
4. The EKT	542	17.08	2.44

Note: The lowest and the highest probable score to be taken from the Environmental Behaviour sub-scale were between 13–65, they were between 14–70 for the Environmental Opinion sub-scale, they were between 0–25 for the EKT and finally, they were between 27–135 for the EAI.

As can be seen in Table 1, the mean of Environmental Behaviour sub-scale that student teachers took is 37.63 and the standard deviation is 7.99. The mean of Environmental Opinion sub-scale is 29.55 and the standard deviation is 4.42. The mean of the EAI scores is 67.19 and the standard deviation is 8.39. Lastly, the mean of the EKT is 17.08 and the standard deviation is 2.44.

**The distribution of student teachers' EAI and EKT scores according to grade**

Table 2 shows the means, the standard deviations and one-way variance analysis results based on student teachers' EAI and EKT scores.

**Table 2.** The means, standard deviations & F and p values of student teachers' EAI and EKT scores, shown in relation to grade

Scores	Grade								F	p
	I. Grade		II. Grade		III. Grade		IV. Grade			
	$\bar{X}$	Ss	$\bar{X}$	Ss	$\bar{X}$	Ss	$\bar{X}$	Ss		
Environmental Behaviour sub-scale	36.36	8.59	36.85	7.61	38.28	7.39	38.84	7.95	3.141	.025
Environmental Opinion sub-scale	29.67	4.54	29.60	4.33	30.23	5.22	28.92	3.63	2.093	.100
Environmental Attitude Inventory total scores	66.04	8.77	66.45	7.85	68.52	8.16	67.76	8.46	2.471	.061
Environmental Knowledge Test	16.76	2.31	16.70	2.11	16.91	3.01	17.75	2.16	6.310	.000

Table 2 reveals that the mean of Environmental Behaviour sub-scale for the first grade is 36.36, for the second grade, it is 36.85, for the third grade, it is 38.28 and for the fourth grade, it is 38.84. Also, Table 2 illustrates that the mean of Environmental Opinion sub-scale for the first grade is 29.67, for the second grade, it is 29.60, for the third grade, it is 30.23 and finally, for the fourth grade, it is 28.92. Next, the mean of EAI total scores for the first grade, it is 66.4, for the second grade, it is 66.45, for the third grade, it is 68.52, for the fourth grade, it is 67.76. As for the EKT, the mean for the first grade is 16.76, for the second year, it is 16.70, for the third year, it is 16.91 and finally for the fourth year, it is 17.75.

One-way variance analysis is conducted in order to see whether student teachers' EAI and EKT scores differ significantly according to their grades. This analysis shows that the difference between Environmental Opinion sub-scale and EAI total scores is not statistically significant. However; the difference between Environmental Behaviour sub-scale and EKT total scores is statistically significant at .05 level regarding the participants' grades. In order to see the rationale of this difference at Environmental Behaviour sub-scale, LSD test was done. This analysis indicates a statistically significant difference between the I. grade and the IV. grade students in favor of IV. grade students, between the II. grade and IV. grade students in favor of IV. grade students. No statistically significant difference is found between I., II., III. grade students and III. and IV. grade students. Scheffe-test is done on student teachers' EKT total scores. According to this analysis, meaningful difference is seen between IV. grade and I., II., III. grade students and this stems from the difference in favor of the IV. grade students. No significant difference is seen at other groups.

#### The distribution of student teachers' EAI and EKT scores according to gender

Table 3 illustrates t-test results which is done to see whether student teachers' EAI and EKT scores differ significantly according to gender.

**Table 3.** The means, standard deviations, t and p values based on student teachers' EAI and EKT scores shown in relation to gender

Scores	Female (N= 321)		Male (N= 217)		t	p
	$\bar{X}$	Ss	$\bar{X}$	Ss		
Environmental Behaviour sub-scale	38.63	7.77	36.12	8.15	3.599	.000
Environmental Opinion sub-scale	29.09	4.01	30.24	4.92	-2.970	.003
Environmental Attitude Inventory total scores	67.73	8.20	66.37	8.68	1.841	.066
Environmental Knowledge Test	17.09	2.23	17.04	2.73	.197	.844

According to Table 3, the mean of female student teachers' Environmental Behaviour sub-scale is 38.63 and for male student teachers, it is 36.12. The mean of female student teachers' Environmental Opinion sub-scale is 29.09 and it is 30.24 for male student teachers. The mean of EAI of female student teachers is 67.73 and it is 66.37 for male student teachers. The mean of female student teachers' EKT scores is 17.09 and the mean of male student teachers' EKT scores is 17.04. The differences between two groups' scores are found to be significant in favor of male student teachers ( $p < .05$ ). No significant difference is found at other scores.

**The distribution of student teachers' EAI and EKT scores according to the situation whether they have taken the "environment" course or not**

Table 4. shows t-test results which aim at investigating whether student teachers' EAI and EKT scores differ significantly in relation to the fact that whether they have taken "Environment" course or not.

**Table 4.** The means, standard deviations, t and p values of student teachers' EAI and EKT scores, shown in relation to the fact that whether they have already taken "environment" course or not

Scores	I have taken the "Environment" class (N= 135)		I have not taken the "Environment" class (N= 407)		t	p
	$\bar{X}$	Ss	$\bar{X}$	Ss		
	Environmental Behaviour	38.82	7.56	37.23		
Environmental Opinion	29.41	4.50	29.60	4.40	-.422	.673
Environmental Attitude	68.24	8.44	66.84	8.36	1.685	.093
Environmental Knowledge	17.13	2.51	17.06	2.42	.297	.766

According to Table 4, the mean of Environmental Behaviour sub-scale is 38.82 for student teachers who have already taken the "Environment" course and it is 37.23 for those who have not taken the "Environment" course. As for Environmental Opinion sub-scale, the mean is 29.41 for those who have already taken the "Environment" course and it is 29.60 for those who have not taken the "Environment" course. Next, the mean of student teachers who have already taken the "Environment" course is 68.24 at EAI and it is 66.84 for student teachers who have not taken the "Environment" course. Regarding EKT scores, the mean of student teachers who have already taken the "Environment" course is 17.13 and the mean of student teachers who have not taken the "Environment" course is 17.06. Statistically meaningful differences have been found out at Environmental Behaviour sub-scale, which is in favor of student teachers who have already taken the "Environment" course ( $p < .05$ ). No meaningful differences have been seen among other scores regarding whether student teachers have taken the "Environment" course or not.

**The distribution of student teachers' EAI and EKT scores according to the fact that whether they have a membership into an environmental organization or not**

Table 5 shows t-test results which aim at investigating whether student teachers are a member of an environmental organization or not. T-test is conducted in order to see whether student teachers' EAI and EKT scores differ significantly in relation to their membership into an environmental organization (a voluntary foundation, club or association).

**Table 5.** The mean, standard deviations, t and p values of student teachers' EAI and EKT scores, in relation to the situation whether they are a member of an environmental organization or not

Scores	I am a member of an environmental organization (N= 23)		I am not a member an environmental organization (N= 518)		t	p
	$\bar{X}$	Ss	$\bar{X}$	Ss		
Environmental Behaviour sub-scale	39.78	7.64	37.52	8.00	1.382	.186
Environmental Opinion sub-scale	30.95	5.28	29.50	4.37	1.299	.124
EAI total scores	70.73	8.48	67.02	8.37	2.053	.051
EKT	17.14	3.23	17.08	2.40	.094	.926

According to Table 5, the mean of student teachers who are a member of an environmental organization is 39.78; whereas, that of student teachers who are not a member of an environmental organization is 37.52. As for Environmental Behaviour sub-scale, the mean of student teachers who are a member of an environmental organization is 39.78; whereas, the mean of student teachers who are not a member of an environmental organization is 37.52. Next, for Environmental Opinion sub-scale, the mean of student teachers who are a member of an environmental organization is 30.95; whereas, the mean of student teachers who are not a member of an environmental organization is 29.50. Regarding EAI scores, the mean of student teachers who are a member of an environmental organization is 70.73; whereas, the mean of student teachers who are not a member of an environmental organization is 67.02. Lastly, for EKT scores, the mean of student teachers who are a member of an environmental organization is 17.14; whereas, the mean of student teachers who are not a member of an environmental organization is 17.08. No significant differences have been found out among two groups' scores in terms of being or not being a member of an environmental organization ( $p < .05$ ).

## DISCUSSION AND CONCLUSION

The research findings have shown that the mean of student teachers at Environmental Behaviour sub-scale of which score range has been between 13 and 65 is 37.63. Next, the mean of student teachers at Environmental Opinion sub-scale of which score range has been between 14 and 70 is 29.55. Then, it has been found out that the mean of student teachers at EAI total scores of which have been between 24 and 15 is 67.19 and lastly, the mean of student teachers' scores at EKT of which range have been between 0 and 25 is 17.08. Regarding total scores, it can be said that student teachers' environmental attitudes are at mid-level and positive and their environmental knowledge is good in spite of their low mean values at Environmental Opinion sub-scale. This finding is in line with the research results of Altın (2001) and Erten (2005). Altın (2001) has found out that student teachers of biology department acquire positive attitudes towards environment and environmental problems. Similarly, Erten (2005) has reinforced this finding in his study with student teachers of pre-school education department. According to Atasoy (2005, s.215), the fundamentals of first experiences about the natural environment, love of nature, and the environmental awareness are built in elementary school level, tolerance and understandings to elements of the nature and especially environmental morality (comprehension of what is acceptable and unacceptable in the children-nature relationships) are shaped in this period. When the critical role of the first life experiences in shaping the whole-life attitudes, values and behavioural patterns (Wilson, 1996, s.1) is

considered, it can be said that positive that student teachers who will be teaching in elementary education have mid-level attitude scores about environment and environmental problems.

According to One-way variance analysis results the difference between student teachers' Environmental Behaviour sub-scale and EKT scores have been found to be statistically significant, which has been in favor of 4th grade students at .05 level. The mean of Environmental Knowledge raised as student teachers' grades went up. This finding is consistent with the related literature and is an expected result because of student teachers' accumulation of knowledge parallel to their grades. For example; the studies by Altın (2001) with 4th grade biology student teachers, by Yılmaz et al. (2002) with secondary school students and university students and by Uzun and Sağlam (2006) with secondary school students have provided supporting findings. Similarly; Engin (2003) conducted a study with science and biology student teachers and found that their level of environmental knowledge increased after they took the ecology class.

In the study, student teachers' environmental behaviour sub-scale scores went up in line with the increase in their environmental knowledge, which was in favor of the 4th grade student teachers. This finding can be regarded as a consistent result as it shows the transfer of knowledge into behaviour. Next, no difference was observed between 1st grade and 4th grade student teachers' EAI total scores. This may imply that attitudes are shaped towards the end of high school years and significant changes occur during youth. In the following years, attitudes are reinforced and they become difficult to change. Ma and Batesson (1999, s. 28) have asserted that even if children become university students, their beliefs are similar to their family members' beliefs. Therefore; Ma and Batesson propose that students' environmental attitudes reflect their family values if there is no effective training and strategy for behaviour changing (in 2001, s. 61). This may also stem from the inadequacy of pre-service teacher training programs and inconvenience of training atmospheres. In addition to that, it is thought that environmental training should be done systematically as well as overall acknowledgement about environmental problems, so knowledge can be transformed into behaviour easily and positive attitudes can be acquired. There are studies supporting this perspective. For example; Tüfenkçi (2006) did an ethnobotanic study with biology student teachers and claimed that their awareness about biovariety increased. Özdemir and Uzun (2006) carried out a research by means of science and nature activities based on green class model and found the same results with pre-school students. Lastly, Lindemann-Matthies (2002) conducted out a study and found out that elementary and secondary school students' awareness about environmental perception and attitudes increased through active observation of nature.

Student teachers' EAI and EKT scores have differed significantly, which has been in favor of female participants in Environmental Behaviour sub-scale and which has been in favor of male participants in Environmental Opinion sub-scale ( $p < .05$ ). However; no differences have been seen between EAI and EKT scores in terms of gender factor. This result is not only parallel to some studies but also contradictory for others. For example; Altın (2001) has found out that biology student teachers' EAI scores are higher for female ones but this is not statistically significant. Unlike Altın's result, Erol (2005), Uzun and Sağlam (2006) and Şama (1997) have found out that female student teachers have more positive environmental attitudes than their male peers. Studies conducted abroad have also provided supporting evidence about females' more positive attitudes towards environment than males (Britner, 1999; Davidson and Freudenburg 1996, Gardos and Dodd 1995, Tikka et al. 2000; Akt: Yılmaz, Bone & Andersen, 2004, s. 1528). As a conclusion, it can be said that the female participants of this specific study have tended to show more positive environmental attitudes than male participants despite both females' and males' equal amount of environmental knowledge.

Then, this research has indicated that environmental behaviours of student teachers who have already taken “environment” course are more positive ( $p < .05$ ) and have higher environmental attitude total scores than environmental behaviours of student teachers who have not taken “environment” course. Student teachers’ environmental knowledge and behaviours have increased as they move along a higher grade. In line with this, environmental behaviour sub-scale scores of student teachers who have already taken “environment” course have differed significantly from the ones who have not taken this course. These two parallel findings imply that the results of the study are consistent. In this research, in spite of no meaningful difference in terms of being a member of an environmental organization (a voluntary foundation, club or association), EAI and EKT means of student teachers who have been a member of an environmental organization are higher. In a study by Uzun and Saglam, it has also been found out that Environmental Opinion and Behaviour Inventory means and Knowledge Test scores of secondary school students who have taken “Environment and Human Beings” course and who have been a member of an environmental organization are higher. The mean of their environmental behaviour and academic achievement is found to be meaningful in favor of those who have taken the course.

The overall results of this study illustrate that student teachers retain general environmental knowledge but their environmental opinion and behaviours are not at a desirable level. The number of student teachers who have taken “environment” course (24.9 %) and who volunteer to participate in the activities of environmental organizations (4.2 %) is very limited. This indicates that student teachers do not participate in environmental organizations. The similar findings have also been obtained in studies conducted with university students (Yılmaz et al., 2002; Erol, 2005; Altın, 2001; Yücel and Morgil, 1999, Çabuk and Karacaoğlu, 2003). This is an alarming situation for Turkey. As the attendees of “environment” class and the members of environmental organizations are mostly female student teachers, it is clear that some regulations are required in order to attract male students for such activities. Environment courses should be expanded into overall university by means of integration of other instructors from related departments such as biology, physics, chemistry, environmental engineering etc.). In addition to that, it is advised to cooperate with non-governmental organizations about environment training. This can contribute into development of environmental behaviours and attitudes. It is important to remember that apart from family members, teachers are responsible for one’s education, starting from pre-school education till university, so student teachers should be trained as well-equipped environmentalists. In the long run, student teachers’ high-level consciousness about environmental issues will transfer into future generation through their education. This must be given utmost attention in order to establish a more sensitive society.

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