

# **An Investigation for the Future Educators' Attitudes towards the Environmental Issues in the Context of Ecocentrism and Anthropocentrism<sup>1</sup>**

Ahmet Yumuşak

*Celal Bayar University, Faculty of Education, Manisa, TURKEY*

Serap Özbaş

*East University, Ataturk Faculty of Education, Department of Science Teaching, Nicosia, CYPRUS*

Seyit Ahmet Sargin

*Alanya Alaaddin Keykubat University, Faculty of Education, Alanya, Antalya, TURKEY*

Furkan Baltacı

*Akdeniz University, Faculty of Tourism, Department of Tourism Guidance, Antalya, TURKEY*

•Received 01 November 2015 •Revised 04 February 2016 •Accepted 24 April 2016

---

In this study, it was revealed that the factors influencing the future educators' attitudes towards the environment. The survey was conducted between 2013-2014, on the freshman and the senior students studying in two different education faculties providing training within the boundaries of Turkish Cypriot. As a result, it has been found that persons who take any course related to environment, become a member of any environmental organizations, join any environmental activities, and follow any publication related to the environment by throughout education life contribute the formation of environmental protection awareness for them. The majority of the participants had an ecocentric attitude. To be increased of the environmental awareness for teacher candidates studying in math and social sciences, the necessity and importance of a number of environmental activities performed were appeared. The teacher candidates, especially having with the environmental protection sensibility will shed light on the future will provide significant contributions in the conversion of this consciousness to a sustainable structure on behalf of the awareness to prevent disconnection between generations.

Correspondence: Ahmet Yumuşak,  
Celal Bayar University, Faculty of Education, Department of Primary Education  
Division, 45900 Demirci, Manisa, Turkey  
E-mail: ahmetyumusak@hotmail.com  
doi: 10.12973/ijese.2016.401a

---

<sup>1</sup> A part of this article was presented at the 3rd World Conference on Educational and Instructional Studies (WCIES 2014). November 6-8, Antalya.

## INTRODUCTION

Environment is the all kinds of biotic and abiotic (social, cultural, historical, climatic, physical) factors affecting organisms during lifelong (Armagan and Koksak, 2010:1585; Yücel and Morgil, 1998:84). In very general terms, environmental issues defined as adverse effects of the artificial environment created by people, in the natural environment (Kahyaoglu and Ozgen, 2012:173; Ozer, 1993).

Emerging technologies, changing lifestyles, increasing availability of information, and the unsustainable use of resources have caused and also been continuing to be the reasons of a number of environmental issues. The human behavior underlying on the basis of the environmental issues (Schultz, 2011), plays a major role in the solution of this problem again. Considering the relationship between attitudes and behavior in preventing the destruction of the environment and environmental protection, tendency of positive attitude (or behavior) is extremely important. Positive attitude towards the environment is affected by both his individual characteristics and the social structure he lives in (Gifford, Hay and Boros, 1983; İnceoğlu, 2010:108; McMillan et al., 1997:101; Sargin et al, 2016:200; Timur, Yılmaz and Timur, 2013:202).

It is possible to say that the definitions related to the environmental sustainability have been collected around two basic notions that determine the human approach to the nature. One of them is human centered (anthropocentric) approach and the other one is environment centered (anthropocentric) approach (MacKinnon 2007:339; Roney, 2011:120; Wapner and Matthew, 2009:212). According to the human centered approach, human is the most valuable creature compared with the others and all others have been created to serve him (Roney, 2011:120). As Buchdahl and Raper (1998:95) noted in their study, the environment is of utmost importance to continue human life and to raise his life quality. Like all other creatures, human is also addicted to the environment with regard to his fundamental food, nutrition, and housing needs (Macionis and Plummer, 2002:625). The human health runs into danger when the air pollution increases. When the value of the pollution exceeds the required standard value, human future and his life standard will run into danger. Therefore, environment must be protected and the natural sources must be used sparingly (Campbell, 1983; Katz and Oechsli, 2010:50). It will not be false to name the human centered approach as pragmatic approach. This approach requires the well-functioning systems to continue as well and supports every effort that would realize it. Especially, pays a lot of importance for the rehabilitation activities in regard to the environment. Because, all activities in accordance with this human centered approach is a good of human. So, the human has a right much more to benefit from environment compared to the other living creatures. Therefore, he can think that he has a right to change the nature towards his desires and wishes himself (Aytaç and Öngen, 2012:18). As reported by them, environmental threats, such destruction of the forests and being damaged of the ozone layer i.e., are untrue things (Erten, 2007:73). So it is not necessary to hold the activities towards the protection of the environment, awareness raising activities, different programs.

As pointed out by Calliot (1984:299), human centered-concept attaches importance to the human, but it attaches importance to the other things. This importance, also, depends on the grades of benefits given by them. Also Angeles (1981) has defined a bidirectional notion. The first side of this notion points out that the human is the center of all of the things in the universe and also it is the only goal of the universe. As to the second part of this notion depicts that human is very important and has a value. Concerning this, universe has come into being for the

sustainability and improvement of this value. Otherwise universe has no meaning and value alone. As it is seen, everything has been related with human and determined regarding his benefits. Benhabib (1984:109), especially, has called to the people to pay attention on its dangerous results if it is taken into account as it is. With respect to the author, if nature is only considered as a tool that aims to serve the people by ignoring its internal and metaphysical dimension, it will mean that the loss of this world. Because all living creatures able to continue its existence which depends on the persistence of natural resources.

People's value judgment and lifestyles constitute the main reasons of the environmental issues. From this point; it will be possible that people's behavior turn onto ecocentric from anthropocentric attitudes only by changing the value judgments and ways of life. Experiencing the change in question depends on raising environmental awareness, efficiency and prevalence of education for the environment, of the theoretical and practical courses in schools (Atasoy and Ertürk, 2008:106).

To have a sustainable structure requires recognition of the presence of human beings and nature and also other living things in the nature. Moreover, it is necessary to indicate that living together in harmony is necessary to ensure existence of all living system sand guarantee life of the next generations, and the rules must be set out in order to ensure such co-existence in a healthy way (Victor et al., 1998:247). Establishment of such system is inevitable in order to provide a sustainable structure. Taking only one of the existing living systems to the center it is not likely to establish a sustainable system; such an approach will be in contrary to the nature and its rules of sustainability.

In this study, it was examined that the environmental attitudes of future of educators will shed light on the community. The results of this study have an important potential will shed light in the environmental education programs to be given for the development of the environmentally friendly behavior trends, and in terms of contribution to ensure in the formation of public awareness.

## **METHODOLOGY**

As the sample of this study, Near East University, located in the Northern Cyprus has been selected since it is one of the universities having with a charm and potential of attracting students from Turkey and many countries, and the ease of testability of the reliability of the results. In this context, a scale of the environmental attitudes prepared by Bjerke and Kaltenborn (1999) was used. Its adaptation to Turkish language had been realized by Aytaç and Öngen (2012), and Erten (2007). This scale was firstly adapted to Turkish and used in the study of Erten (2007) at which the Cronbach alpha value of the ecocentric attitudes was found .77, and the anthropocentric attitudes was found .78.

Totally, it includes 20 items consisting of 10 anthropocentric and 10 ecocentric items and it has been rated at 5-point Likert-type. The validity and reliability test studies of the scale for the ecocentric and anthropocentric attitudes have been conducted. To the questionnaire including the scale, 9 demographic questions were added in order to determine the characteristics of the participants. Demographic Characteristics of the candidate teachers are given in Table 1.

As seen on the Table 1, 61.6% and 38.4 % of the participants are from Turkey and Cyprus, respectively. The most of these participants are female (66.8%) and the number of the freshman students is 137 (66.8%). More than half of the participating students are the students (58.3%) attending to ECE department and are their ages are in range 21-23 years-old.

**Table 1.** Distribution of participants in line with demographic characteristics

Nationality	N	%
Turkish	130	61.6
Turkish Cypriot	81	38.4
Gender	N	%
Male	70	33.2
Female	141	66.8
Grade	N	%
Senior	74	35.1
Freshman	137	64.9
Age	N	%
18-20	49	23.2
21-23	112	53.1
24 and over	50	23.7
Department	N	%
Psychological Counseling and Guidance (PCG)	61	28.9
Early Childhood Teacher Education (ECE)	123	58.3
Geography Education (GE)	27	12.8

## FINDINGS AND DISCUSSIONS

The survey was conducted between 2013 - 2014, on the freshman & the senior students studying in two different education faculties providing training within the boundaries of Turkish Cypriot. A total of 211 candidate teachers, attending Early Childhood Teacher Education (ECE), Geography Education (GE) and Psychological Counseling & Guidance (PCG) departments, have been chosen pursuant to the random sampling method. In the process of selecting candidates are considered voluntary principle.

Our study is a survey and it consists of two parts. First section includes the propositions for the participants about the environment prepared by us and in the investigation at the end; the obtained results are given in Table 2. Answers received for each of the 6 propositions is only yes / no. In consonance with the answers given in the first question, 90% of the students answered this question as "no", as presented in the Table 2. This means that nearly all of them are not interested in environmental events. The answers given Question 2 shows that more than half of them (%51.2) have taken any courses related to environment before. The percentages of participants who are interested in or not interested in publishes (newspaper, magazine, TV or radio program) are 51 and 49 %, respectively.

**Table 2.** Ratio of the participants' answers to environmental issues

Questions about the environmental issues	Yes		No	
	n	%	n	%
1. Are you member of the any environment organization?	21	10.0	190	90.0
2. Did you take any courses related environment before?	108	51.2	103	48.8
3. Are you interested in publishes (newspaper, magazine, TV or radio programs) related the environment?	107	51.0	103	49.0
4. Do you join the activities related to the environment?	77	36.5	132	62.6
5. Do you support to environment campaign (financial or mentally)?	144	68.2	66	31.3
6. Are environment-related activities conducted in your university?	76	36.0	134	63.5

They are nearly equal each other. This is not a good result. On the other hand, the result obtained about the answers given for the question related joining the activities related to the environment is very bad. Because the percentage of the students giving “no” answer is very large and it is 62.6%. The answers given to the fifth question are amazing compared previous question. The results are contrasted with each other since the subjects referred by these two questions are similar. The answers given to the last question by the students is interesting. 63.5 % of the students say that there are no environment-related activities conducted in their university. This means that the universities must conduct some environmental activities in their universities in order to raise awareness of the students about the environment.

**Table 3.** Factor analysis results of the scale

Items	Factor Loading	Value	$\bar{X}$	Reliability ( $\alpha$ )
<b>FACTOR 1 - ECOCENTRISM</b>		<b>5.740</b>	<b>3.91</b>	
<b>ECO4.</b> Animals and plants have the right to life at least as much as human beings do.	0.830		4.19	<b>0.911</b>
<b>ECO7.</b> If the consumption habits of today are not changed too seriously, it will be encountered environmental problems in the future.	0.799		4.01	
<b>ECO6.</b> The nature has a so sensitive balance that can be destroyed very easily.	0.795		3.90	
<b>ECO10.</b> Sometimes animals seem almost human to me	0.776		4.18	
<b>ECO3.</b> Humans overuse and consume nature and natural resources	0.759		3.91	
<b>ECO5.</b> Although human being has special aptitudes such as intelligence, she/he is still subject to rules of nature	0.720		3.92	
<b>ECO9.</b> Sometimes it makes me sad to see forests to be cleared for agriculture.	0.659		3.99	
<b>ECO2.</b> Intervention of human beings to nature results in disaster in general.	0.610		3.59	
<b>ECO8.</b> I can enjoy spending time in natural settings just for the sake of being out in nature.	0.538		3.70	
<b>ECO1.</b> One of the worst things about overpopulation is that natural areas being destroyed for development.	0.523		3.70	
<b>FACTOR 2: ANTHROPOCENTRISM</b>		<b>4.827</b>	<b>2.72</b>	
<b>ANT5.</b> What is called ecological crises is too exaggerated.	0.756		2.83	<b>0.872</b>
<b>ANT3.</b> In fact, when we know how to use and develop properly, the natural resources are unlimited.	0.737		2.69	
<b>ANT2.</b> Human beings will make the world a place to be lived thanks to his/her intelligence and creativity.	0.714		2.54	
<b>ANT7.</b> Human being will learn all details and beauty of the world thanks to his/her imagination and intelligence and control it as s/he likes.	0.691		3.16	
<b>ANT9.</b> One of the most important reasons to keep rivers and lakes clean is so that people can have a place to enjoy water sports.	0.683		3.00	
<b>ANT1.</b> Human beings have the right to change the nature in accordance with their wishes and desires.	0.658		2.64	
<b>ANT6.</b> Humanity has the right to dominate nature.	0.651		2.60	
<b>ANT10.</b> The most important reason for conservation is human survival.	0.626		2.51	
<b>ANT8.</b> Nature is important because of what it can contribute to the pleasure and welfare of humans.	0.610		2.48	
<b>General Scale Reliability (<math>\alpha</math>)</b>				<b>0.829</b>
<b>Total Variance Explained</b>				<b>53%</b>
<b>KMO</b>				<b>0.781</b>
<b>Bartlett's Test of Sphericity</b>		<b>Approx.Chi-Square</b>		3450.931
		<b>df</b>		190
		<b>Sig.</b>		0.000

As given in the Table 3, the validity of the scale's exploratory factor analysis has been checked for KMO value (0.781) and Bartlett's Test of Sphericity (.000). During these analysis, it has been decided that the items whose factor loads are less than 0.50 have been removed from the scale and also the item "ANTA-Nature has a powerful balance to be able to eliminate the negative effects of the modern industrialized societies" with a factor load (.442) has been removed since it could not take place in any factor structure. As a result, scale turns into a structure with two factors having Eigen value greater than 1 while including 19 items. The total variance ratio of both two factors is 0.53. The average values of the first factor including 10 items and the second factor including 9 items are 3.91 and 2.72, respectively.

Cronbach's alpha values were measured to check the internal consistency of the data for reliability of the study. This value was calculated as 0.829 for the whole scale. Cronbach's alpha values of the ecocentrism and anthropocentric factors have been calculated as 0.911 and 0.872, respectively. In this study, it has been examined the distribution of the data obtained from survey belonging to the teacher candidates, and it has been seen that it was a normal distribution. During the analyzing of the data, t-test (one-way ANOVA) has been used.

We used independent t-test to prove whether there is a difference between the students' anthropocentric attitudes concerning to the nationality (Table 4). There is a meaningful difference between Turkish and Turkish Cypriot students as shown in the Table 4 since  $p=0.000<0.05$ . This difference is large for the Turkish students since average value ( $X=2.91$ ) for the Turkish students' anthropocentric attitudes is greater compared average value ( $X=2.42$ ) for the Turkish Cypriot students' anthropocentric attitudes.

We also used independent t-test to prove whether there is a difference between students' ecocentric attitudes in terms of their situation of becoming freshman or senior student. There is a prominent difference between freshman students and senior students as conferred on Table 5 with reference to  $p=0.048<0.05$ . This difference is large for the senior students since average value ( $X=4.07$ ) for the senior students' ecocentric attitudes is greater compared average value ( $X=3.78$ ) for freshman students' anthropocentric attitudes.

We used independent t-test to prove whether there is a difference between students' anthropocentric attitudes in point of the membership of any environmental organizations. There is considerable difference between students who are members of any environment, organizations and students who are non-member as exhibited in the Table 6 since  $p=0.046<0.05$ . This difference is large for students who are non-member of any environmental organizations since average value ( $X=2.76$ ) for anthropocentric attitudes of students who are non-member of any environmental organizations is greater compared average value ( $X=2.37$ ) for anthropocentric attitudes of students who are members of any environmental organizations.

**Table 4.** The participants' anthropocentric attitudes in regard to their nations.

Nationality (Independent Variables)	N	$\bar{X}$	S.E.	p
Turkish	123	2.91	0.929	0.000
Turkish Cypriot	77	2.42	0.806	

**Table 5.** The participants' ecocentric attitudes according to their grade

Independent Variables	N	$\bar{X}$	S.E.	p
Senior	68	3.78	1.030	0.048
Freshman	118	4.07	0.868	

**Table 6.** The participants' anthropocentric attitudes in accordance with their membership of any environment organizations.

Independent Variable	N	$\bar{X}$	S.E.	p
Yes	21	2.37	0.933	0.046
No	179	2.76	0.904	

We used independent t-test to prove whether there is a difference between students' ecocentric attitudes corresponding whether they have taken any course related to the environment before or not. There is a compelling difference between the students who have taken any courses related to the environment before and students who have not taken any courses related to environment before as illustrated in Table 7 since  $p=0.002<0.05$ . This difference is large for students who have taken any courses related to environment before since average value ( $X=4.18$ ) for ecocentric attitudes of students who have taken any courses related to environment before is greater compared average value ( $X=3.74$ ) for ecocentric attitudes of students who have not taken any courses related to environment before.

We used one-way ANOVA followed by Tukey's test to see whether there is a difference between students' ecocentric attitudes with regards to the department they enrolled. Since  $F=4.213$ ;  $p=0.016<0.05$ , there is a meaningful difference among students attending three different departments as observed in the Table 8. This difference is large for students who are taken geography education since average value ( $X=4.24$ ) for ecocentric attitudes of this students is greater compared average value ( $X=3.68$ ) for ecocentric attitudes of students who are taken psychological counseling and guidance.

### CONCLUSION AND RECOMMENDATIONS

Environment, with all the resources of underground and aboveground, is insurance for all living creatures in the world on behalf to continue their lives. Destruction & deformation of the environment, irresponsible use and rapid consumption of environmental resources are jeopardizing the future of all living systems. On the subject of the environmental protection and to sustainability, the most important task falls to mankind. Therefore, the human must act as conscious and responsible for the environment. The schools play a vital role for transmission of the environmental awareness from generation to generation. The formation of the environmental protection awareness of the students of these days who will be the decision markers for the future depends on the environmental protection awareness of the teachers. Being courses related to the environment taken by the teachers is a very important step for the formation of the environmental awareness. In this study, the environmental attitudes of the candidate teachers of the future have been considered from the point of view of ecocentric, and anthropocentric.

**Table 7.** The participants' ecocentric attitudes in terms of whether they have taken any course related to environment before or not.

Independent Variables	N	$\bar{X}$	S.D.	p
Yes	96	4.18	0.823	0.002
No	90	3.74	1.000	

**Table 8.** The Participants' Ecocentric Attitudes as Regards their Departments.

Independent Variables	N	$\bar{X}$	S.D.	ANOVA	
				F	p
PCG department	57	3.68*	1.060	4.213	0.016
ECE department	104	4.05	0.085		
GE department	25	4.24*	0.160		

As a result, more than half of the teachers have been identified that they give support for environmental campaigns. However, of the majority is not a member of any environmental organizations does not follow the environmental publications and does not participate in any activities related to the environment, shows that this support was remained in the emotional dimension, and was not turned into a behavior. Also, it is a remarkable situation that nearly half of the participants had not been taking any course about the environment previously and more than half of them specified that any environmental activities had not been conducted in their school. For the rise of the environmental protection awareness, there is also the social responsibility of organizations as well as individual assignments. Because the most important responsibilities of educational institutions are to educate individuals, respectful to the environment, and to integrate them into the society as individuals acquired awareness of environmental protection. It is an important finding that reveals the importance of institutional responsibility; the majority of students, who does not participate in activities related to the environment, does not follow environmental issues and are not members of any environmental organizations, expressed that they have not taken any environmental lessons before and carried out any activities related to the environment in their schools.

One of the important findings in this study, the participants has ecocentric attitudes, and their anthropocentric attitudes are low, although its level is close to the instability. This case shows that the participants are; esteem each living creature forming the environment and sharing with other living things, aware of the importance of the environment on the side of the living beings, and aware of what led to take the human to the center and to keep in the forefront of individual interests. However, this attitude is not at a high rate. In particular, the anthropocentric attitude to be in a close level of instability is a condition to be taken into account. Compared the freshmen to the seniors, their ecocentric attitude level differences reveal that the environmental awareness of them has risen over time, and they look at life from a more realistic perspective. The lower level of anthropocentric attitude of students who are members of any environmental organizations than for non-members elicits the role of environmental protection associations playing in the conversion of the collectivist structure of human behavior. At any stage of the education, the environmental protection awareness of students who took an environmental course is relatively higher than the ones who did not take. The contribution via the education which has made with proper teaching techniques to the student motivation was supported by the study of Sargin, Baltaci, Bici and Yumusak (2015, p.2861). This case reveals that the environmental courses located in the curriculum are an important factor for students to gain environmental awareness.

There are many factors affecting to acquire students' environmental awareness and to elude the state of individual thinking. In this study, the important ones of these factors were discussed and examined. As a result, it has been found that persons who take any course related to environment, become a member of any environmental organizations, join any environmental activities, and follow any publication related to the environment by throughout education life contribute the formation of environmental protection awareness for them. From this point of view, the necessity and importance of a number of environmental activities performed were appeared to be increased of the environmental awareness for teacher candidates studying in math and social sciences. Considering the realization of the mentioned cases above, it will help that both the addition of some course related environmentally responsible behavior patterns to the curriculum, and the organization of club activities, seminars, responsibility projects, etc., by the school management on behalf of gaining environmental awareness to students. Hence, this will contribute to the environmental protection awareness to reach wider

communities and will play a very important role in the establishment of a sustainable environment. The teacher candidates, especially having with the environmental protection sensibility will shed light on the future will provide significant contributions in the conversion of this consciousness to a sustainable structure on behalf of the awareness to prevent disconnection between generations.

## SYMBOLS

- $\alpha$  : Reliability  
ECE : Early Childhood Teacher Education  
N : Number of the Participants  
PCG : Psychological Counseling and Guidance  
GE : Geography Education  
% : Percentage  
ECO : Factor code for Ecocentrism  
ANT : Factor code for Anthropocentrism  
KMO : Kaiser-Meyer-Olkin Measure of Sampling Adequacy  
df : Degree of Freedom  
Sig : Level of Significance  
p : Significance  
 $\bar{X}$  : Average Value  
S.E. : Standard Error  
S.D. : Standard Deviation  
F : Value of the F (ANOVA) Test

## REFERENCES

- Angeles, P.A., (1981). Dictionary of Philosophy. London: Barnes & Noble Books Publications.
- Armagan, F.O. & Koksak, E.A., (2010). Factors effecting students' performances on an environment achievement test. *Procedia Social and Behavioral Sciences* 9, 1585-1591. Doi:10.1016/j.sbspro.2010.12.369
- Atasoy, E. ve Ertürk, H., (2008). İlköğretim Öğrencilerinin Çevresel Tutum ve Çevre Bilgisi Üzerine Bir Alan Araştırması. *Erzincan Eğitim Fakültesi Dergisi*10(1),105-122.
- Aytaç, M. ve Öngen, B., (2012). Doğrulayıcı Faktör Analizi ile Yeni Çevresel Paradigma Ölçeğinin Yapı Geçerliliğinin İncelenmesi. *İstatistikçiler Dergisi* 5, 14-22.
- Benhabib, S., (1984). Epistemologies of Postmodernism, A rejoinder to Jean François Lyotard. *Journal of New German Critique* 33(Autumn), 103-126.
- Bjerke, T. & Kaltenborn, B.P., (1999). The Relationship of Ecocentric and Anthropocentric Motives to Attitudes toward Large Carnivores. *Journal of Environmental Psychology*. Volume:19, pp:415-421.
- Callicott, B., (1984). Non-Anthropocentric Value Theory and Environmental Ethics. *American Philosophical Quarterly* 21(4), 299-309.
- Buchdahl, J.M. & Raper, D., (1998). Environmental Ethics and Sustainable Development. *Journal of Sustainable Development* 6, 92 - 98.
- Campbell, E.K., (1983). Beyond Anthropocentrism. *The History of the Behavioral Sciences* 19, 54-67.
- Erten, S., (2007). Ekosentrik, Antroposentrik ve Çevreye Yönelik Antipatik Tutum Ölçeğinin Türkçeye Uyarlama Çalışması. *Eurasian Journal of Educational Research* 28, 67-74.
- Gifford, R., Hay, R. & Boros, K., (1983). Individual differences in environmental attitudes. *Journal of Education* 14(2), 19-23.
- İnceoğlu, M., (2010). Tutum, Algı, İletişim, (5 th ed.) İstanbul: Beykent Üniversitesi Yayınları.
- Kahyaoglu, M. & Ozgen, N., (2012). An Investigation of Pre-Service Teachers' Attitudes towards Environmental Problems in Terms of Several Variables. *Journal of Theoretical Educational Science* 5(2), 171-185.
- Katz, E. & Oechsli, L., (2010). Moving beyond Anthropocentrism, Environmental Ethics, Development and The Amazon. *Journal of Environmental Ethics* 15, 49-59.

- MacKinnon, B., (2007), *Ethics, Theory and Contemporary Issues* (5th edition). Thomson/Wadsworth, Belmont, California.
- Macionis, J. & Plummer, K., (2002). *Sociology: a global introduction*. Harlow: Prentice Hall.
- McMillan, M., Hoban, T.J., Clifford, W.B. & Brant, M.R., (1997). Social and demographic influences on environmental attitudes. *Southern Rural Sociology* 13(1), 89-107.
- Özer, U., (1993). *Yüksek Öğretimde Çevre İçin Eğitim Çevre Eğitimi*. Ankara: Türkiye Çevre Vakfı Yayını.
- Roney, S.A., (2011). *Turizm, Bir Sistemin Analizi*. Ankara: Detay Yayıncılık.
- Sargin, S.A., Baltacı, F., Biciçi, H. & Yumusak, A., (2015). Determining of vocational school student's attitudes toward the puzzle method. *Procedia - Social and Behavioral Sciences* 174, 2856 - 2861.
- Sargin, S. A., Baltacı, F., Katipoğlu, M., Erdik, C., Arbatlı, M. S., Karaardıç, H., Büyükcengiz, M. (2016). Öğretmen Adaylarının Çevreye Karşı Bilgi, Davranış ve Tutum Düzeylerinin Araştırılması. *Education Sciences* 11(1), 1-22.
- Schultz, P. W., (2011). Conservation Means Behavior. *Conservation Biology* 25(6), 1080-1083.
- Victor, T.C., Middleton, H. & Rebecca, H., (1998). *Sustainable Tourism, A Marketing Perspective*. Oxford: Butterworth-Heinemann.
- Timur, S., Yılmaz, Ş., ve Timur, B. (2013). İlköğretim Öğretmen Adaylarının Çevreye Yönelik Tutumlarının Belirlenmesi ve Farklı Değişkenlere Göre İncelenmesi. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi* 14(2), 191-203.
- Wapner, P. & Matthew, R.A., (2009). The Humanity of Global Environmental Ethics. *The Journal of Environment Development* 18(2), 203-222.
- Yücel, A.S. ve Morgil, F.İ., (1998). Yüksek Öğretimde Çevre Olgusunun Araştırılması. *H. Ü. Eğitim Fakültesi Dergisi* 14, 84-91.

