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Social studies pre-service teachers' awareness of environmental ethics[1]

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Abstract. Aim of this study is to determine environmental ethic perception of prospective social studies teachers. In the study, descriptive survey model was used. Research sample consists of prospective social studies teachers studying in Buca Faculty of Education at Dokuz Eylul University. "Personal Information Form" and "Environmental Ethics Awareness Scale" developed by Özer (2015) were used as data collection tools. After application of data collection tools, data were gathered, and findings about research problem and sub problems were presented. Relationships between environmental ethics awareness level and personal characteristics, such as age, gender, grade level and settlement area etc. were examined, by analyzing findings in computer via SPSS program. As a result of the significant differences obtained in the findings, it revealed that female students were more conscious of environmental ethics than male students. It is also seen that the awareness of environmental ethics has decreased with increased age. Likewise, it was concluded that the grade level was inversely proportional to the awareness of environmental ethics and it was understood that the place of residence did not have a meaningful impact on the awareness of environmental ethics. In conclusion part of the study, recommendations were made that studies on environmental ethics be implemented upon different samples by different variables, and that environmental ethics awareness level be improved.

Keywords: Social studies, environment, environmental ethics, environmental issues, preservice teachers

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INTRODUCTION

Environmental issues have rapidly extended its area of impact today. Human, who is a part of natural environment, is affected by these problems in various ways. In our age, humanity is faced with very serious environmental threats such as global warming, ozone layer depletion, decrease in biodiversity, erosion, desertification and water shortage etc.

Environmental issues arise from the fact that people use environment unconsciously, within which they are maintaining their life, for benefitting further from it and that they put their personal welfares ahead of common interests of humanity (Geray, 1995). Human beings can benefit from environment healthily to the extent that one has comprehended and recognized the environment where one is living with its natural and human features. In addition to increase in amount and needs of population within the scope of natural environment human activities, development attempts of developing countries such as Turkey particularly are increasing gradually in pressure on natural resources and ecosystem (Gümüş, Gülersoy and Avcı, 2017). If human beings continue to be unconcerned with environment for one's own welfare, one will experience these disasters more intensely and will face a lot more environmental issues which would threat one's life in the future (Ertan, 2004).

The most distinctive feature of environmental issues is that they are on a global scale. Because, environmental issues affect all humanity regardless of discriminations of religion, language, race, age, gender, financial situation or occupation. For this reason, protection of the environment is not only duty for environmentalists but also duty for every one of us. Raising

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environmental awareness to children is also under the responsibility environmentalists as well parents. Thus, narrations should certainly be made with regard to protection of the environment in all educational processes without making distinction between organized nonformal, formal-informal.

Environmental education should be a process that continues for life long with the purpose of raising consciousness and responsibility so that the environment will be improved today and in the future (Fegebank, 1990). For Dinçer (2009), to make books read on environment, to take class activities out of school, to dramatize on environment, to design playgrounds suitably and to organize properly are important for raising environmental awareness.

Education is in a quite pivotal position in being able to find solutions to environmental issues. At this point, important duties fall also to social sciences course which is taught in primary and secondary level schools. Because, social sciences course addresses human's interaction with environment in terms of past, today and future. A dimension of this interaction is environmental interaction, i.e., human's affecting one's environment, and consequently, one's being affected from it.

Social Studies education develops; competence of being citizen; to keep abreast of improvement; and understanding of inquiry-based democratic citizenship. In addition, social studies is integration of social sciences and concepts to make decision and to solve problem in developing skills of citizenship. (Joshi and Marri, 2006).

One of aims of social sciences teaching is to create generations who know their responsibilities and who are conscious and sensitive. Because, individuals who are aware of their responsibilities and gives shape to their behavior in that direction are also responsible and sensitive to their environment and that pays regard to continuity of natural balance. In raising these individuals, role of social sciences teachers is highly important.

The word 'ethics' derived from ''ethos'' which means ''character'' in Greek. Ethics is a philosophical discipline that inquires rules, values and norms, which constitute foundation of individual and social relationships people establish, from ethical aspects such as right-wrong or good-bad etc. (Dikici, 2013). Ethics provide us with interpreting how we understand the universe and therefore what and how we will consider; and what science says on life.

When we want to make progress in solving environmental issues, the only realistic way is to accept that science and ethics should be together. A proverb expresses this thought quite well: ''science without ethics is blind; ethics without science is empty'' (Des Jardins, 2006). Environmental ethics can be defined as protection of rights to live of all beings of living or non-living in the earth. According to this, there is in one's own way a contribution of all beings, whether living or non-living, to functioning of ecosystem.

It is said that damaging natural environment and unconscious use of natural resources are wrong. If these behaviors are wrong, ''Is sustainable consumption for welfare of human life or does it arise from only respecting to nature and that it is needed for nature to protect?'' This and such like questions are ones that environmental ethics are discussing. Environmental ethics deals with these questions and seek an answer to deeper vital questions such as ''Why we should be sensitive to environment?'' (Yang 2006).

Understandings on environmental ethics were collected under three headings in the past: human-centered ethics, life-centered ethics, and environment-centered ethics. These ideas determine human's daily interests, expectations and behaviors for future; and deal with relationships between individual and others, society, state, nature, ecosystem, living and non-living beings. This evaluation has been accepted as a basic approach (Mahmutoğlu, 2010). In recent years, a lot of new understandings of environmental ethics have been developed in parallel with reaching of global environmental issues to serious dimensions.

While global environmental issues have almost become unavoidable in our age, important duties fall to human being in order to say stop these problems and to pass on a balanced environment to next generations. When effect density of educational institute on humanity is considered, it is obvious that duty which falls to educators is much more than that of any individual. When curricula have been examined, it is seen that social sciences course is

one of courses which addressed subjects of environment and environmental issues the most. In this respect, to gain environmental awareness to individuals, social sciences teacher should be both a good educator and an environmentalist role model. It can be said that understanding of environmental-centered ethics which is one of the above-mentioned approaches to environmental ethics is the most appropriate for our age. Therefore, social sciences pre-service teachers should be aware of their responsibilities in bringing environmental awareness to individuals and should convey the same consciousness to their next students, as well.

Based on the given point, purpose of this study is to present social sciences pre-service teachers' understandings of environmental ethics and to make contribute to social sciences literature on environmental ethics. Accordingly, answers were sought to following questions within the study:

1. Is there a significant difference statistically by gender between mean scores of social sciences pre-service teachers' awareness of environmental ethics?
2. Is there a significant difference statistically by age on mean scores of social sciences pre-service teachers' awareness of environmental ethics?
3. Is there a significant difference statistically by grade level between mean scores of social sciences pre-service teachers' awareness of environmental ethics?
4. Is there a significant difference statistically by settlement between mean scores, gotten by social sciences pre-service teachers from environmental ethics awareness scale?

METHODS

Model of the Study

We used descriptive survey model in this study since it is aimed that social sciences pre-service teachers' perceptions of environmental ethics are determined and that environmental ethics awareness is examined in terms of various variables. Survey models are survey arrangements conducted on the entire universe or a group, and samples or specimens taken for the purpose of reaching a judgment consisting of many elements (Karasar, 2006).

Sample of the Study

Sample of the research consists of pre-service teachers from Department of Social Sciences Teaching in Buca Faculty of Education at Dokuz Eylül University. Data collection tools were applied to pre-service teachers who were studying during the spring semester of 2017-2018 academic year in the said department, and data belonging to 240 pre-service teachers in total were analyzed after unavailable data were eliminated.

Data Collection Tools

In the study, ''Personal Information Form'' consisting of questions of gender, age, grade level and place of residence and ''Environmental Ethics Awareness Scale'', developed by Özer (2015), were used to collect data.

We tried to test accuracy of the model by using confirmatory factor analysis. As a result of the confirmatory factor analysis carried out, it was determined that the model is suitable and that there is no need to remove items. When adaptive values of the model were examined, it was identified that AGFI (Adjusted Goodness of Fit Index): 0,91; GFI (Goodness of Fit Index): 0,91; CFI (Comperative Fit Index): 0,90; RMR (Root Mean Square Residual): 0,076; SRMR (Standardized Root Mean Square Residual): 0,076; RMSEA (Root Mean Square Error of Approximation): 0,078; and $\chi 2/df$ (chi-square per degree of fredom): 2,43. If $\chi 2/df$ ratio is less than 3; values of CFI, GFI and AGFI are greater than 0,90; and if significance level of RMSEA is less than 0,08; it indicates in general that factor structure accorded with the specified model (Kelloway, 1998; Kline, 1998; Kahn, 2006; Hoe, 2008). When cut-off and adaptive values, determined in the relevant literature, have been examined, it can be said that the model was accorded with. Path diagram for the confirmatory factor analysis of the scale is seen in Figure 1.

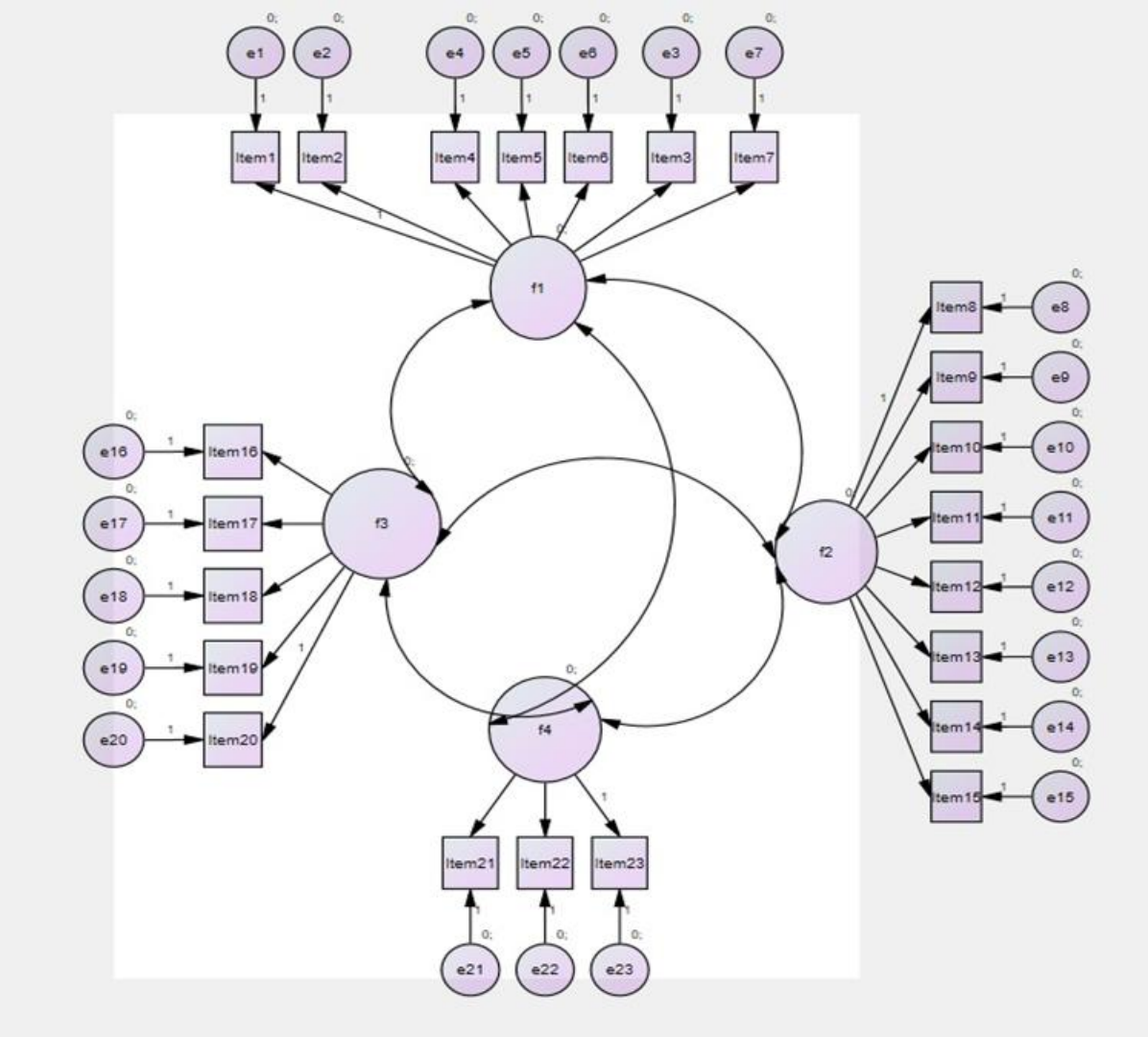

FIGURE 1. *Path diagram for CFA results of the scale*

Value of Cronbach's Alpha for factors was determined with the purpose of reliability calculation of structures which were specified after confirmatory factor analysis. According to reliability analysis, Cronbach's Alpha reliability coefficient was found as 0.91. Within this scope, Environmental Ethics Awareness Scale with 5-Point Likert Type consisting of 23 items and 4 sub-dimensions was applied to social studies pre-service teachers.

Analysis of Data

By analyzing via statistical package program (SPSS), data obtained from attendees were converted into tables. Besides, frequency (f) and percentage (%) analysis was used for descriptive statistical analyses belonging to demographic information of attendees.

Whether or not data sets met conditions of normality and of homogeneity of variances were examined. Accordingly, we examined; analyzes of items in sub-dimensions of ''Definition of Environmental Ethics'', ''Purpose of Environmental Ethics'', ''Reasons for Occurrence of Environmental Ethics'', and ''Measures to Be Taken for Environmental Ethics'', for answers given by attendees; test results for normal distribution of data in line with analyzes; coefficients of kurtosis & skewness, and standard deviation values. Whether or not values provided assumption of normal distribution was investigated. Attendees' evaluations for environmental ethics were compared by variables of gender, age, grade level and settlement since non-parametric techniques should be used for those which do not show characteristics of normal distribution within groups although their sample sizes are enough. For this purpose, Mann-Whitney U test was applied to variables of gender and settlement; and Kruskal Wallis H-test to variables of age and grade level.

RESULTS

Findings for Social Studies Pre-Service Teachers' Socio-Demographic Characteristics

To analyze and interpret data, firstly, frequency and percentage values were calculated in accordance with answers given by attendees to questions which examined their socio-demographic characteristics (gender, age, grade and settlement) in personal information form. Information for these values were given in Table 1.

Table 1. *Attendees' distributions by their socio-demographic characteristics*

		f	%
Gender	Female	119	49,6
	Male	121	50,4
Age	18-20	84	35,0
	21-23	128	53,3
	24+	28	11,7
Grade	1	60	25,0
	2	60	25,0
	3	60	25,0
	4	60	25,0
Settlement	Urban	188	78,3
	Rural	52	21,7

According to data obtained as a result of the study, 49,6% (n=119) of 240 in total pre-service teachers who attended into the research is female, and 50,4% (n121) of them is male. In age dimension, percentage of pre-service teachers in the age range of 18-20 is 35% (n=84); that of them in the age range of 21-23 is 53,3% (n=128); and that of them in the age range of 24 and above is 11,7% (n=28). 78,3% (n=188) of the attendees stated that they lived in urban; and 21,7% (n=52) in countryside before they came to the university. Within the scope of the study, sixty each scale forms remained from each grade level after incomplete and incorrect ones were eliminated from scale forms which were collected from 1st, 2nd, 3th and 4th grade students.

Findings for Environmental Ethics Awareness Scale

As is seen in Table 2 below, three items that social studies pre-service teachers most agreed for environmental ethics awareness are as follows:

1. "We should protect the environment for a happy life" (n=186),
2. "We have to share our earth with next generations'' (n=184),
3. "Disruption of natural balance would affect all beings" (n=180).

As is understood from Table 2, four items that social studies pre-service teachers least agreed for environmental ethics awareness are as follows:

1. "If human has lived without technology; one will understand better value of both other beings and non-living beings" (n=85),
2. "It is possible to develop protecting natural resources" (n=121),
3. "If all people have had moral sensitivity, environmental issues will go away" (n=130),
4. "All kinds of natural resources should be consumed within the scope of law and justice" (n=130).

As is seen in Table 2, three items that social studies pre-service teachers most undecided for environmental ethics awareness are as follows:

1. ''If human has lived without technology; one will understand better value of both other creatures and non-living things" (n=55),
2. "If all people have had moral sensitivity, environmental problems will go away" (n=28),
3. "It is possible to develop protecting natural resources" (n=25).

Table 2. *Frequency and percentage values of scores that social sciences pre-service teachers got from environmental ethics awareness scale*

ITEMS	DIMENSIONS	PROPOSITIONS	Strongly Disagree		Disagree		Undecided		Agree		Strongly Agree	
			f	%	f	%	f	%	F	%	f	%
1	Definition of	We have to share our earth with next generations.	4	1,7	2	,8	3	1,3	47	19,6	184	76,7
2		Everything in environment is valuable and deserves to be taken into consideration morally.	2	,8	2	,8	3	1,3	60	25	173	72,1
3		It is imperative to protect environment so that human welfare should be provided	1	,4	1	,4	4	1,7	51	21,3	183	76,3
4		We should protect the environment for a happy.	2	,8	1	,4	5	2,1	46	19,2	186	77,5
5		People are in a continuous relationship with not only each other, but also natural environment.	2	,8	2	,8	5	2,1	66	27,5	165	68,8
6		even if it is providing today's generations with benefit, a behavior is intolerable that will affect negatively next generations' welfare.	2	,8	7	2,9	13	5,4	68	28,3	150	62,5
7		Road to respect against living-nonliving beings in our environment lies in education.	6	2,5	10	4,2	22	9,2	61	25,4	141	58,8
8	Actions to Be Taken for Environmental Ethics	If human has lived without technology, one will understand better value of both other beings and non-living beings.	8	3,3	21	8,8	55	22,9	71	29,6	85	35,4
9		It is necessary that people's negative behaviors against environment should be limited to provide human welfare.	1	,4	2	,8	12	5,0	83	34,6	142	59,2
10		Environmental issues have gradually increased since certain rules of law were not established.	4	1,7	10	4,2	14	5,8	65	27,1	147	61,3
11	Reasons for Occurrance of Environmental	All kinds of natural resources should be consumed within law and justice.	5	2,1	8	3,3	24	10,0	73	30,4	130	54,2
12		To protect environment is a moral principle, so this principle should be obeyed.	1	,4	5	2,1	13	5,4	61	25,4	160	66,7
13		Environmental problems, constituted at the present time, have posed a threat for next generations.	1	,4	2	,8	9	3,8	54	22,5	174	72,5
14		Apart from people, also living and non-living beings should be paid attention to in each regulation made.	1	,4	1	,4	13	5,4	52	21,7	173	72,1
15		Governments should have prohibitions and measures for environment.	2	,8	1	,4	10	4,2	63	26,3	164	68,3
16		Education needs structuring so that ecological problems should be removed.	1	,4	4	1,7	16	6,7	73	30,4	146	59,9
17		If all people have had moral sensitivity, environmental problems will go away.	2	,8	9	3,8	28	11,7	71	29,6	130	54,2

		Table 2. *Continued*										
18		It is possible to develop protecting natural resources.	2	,8	7	2,9	25	10,4	85	35,4	121	50,4
19		If sense of nature that prioritizes people's walfare and happiness has continued, nature will go to an irrevocable destruction.	2	,8	8	3,3	24	10,0	71	29,6	135	56,2
20		We should give up unlimited exploitation for next generations.	2	,8	1	,4	18	7,5	47	19,6	172	71,7
21	**Purpose of Environmental Ethics**	Disruption of natural balance would affect all beings.	1	,4	2	,8	7	2,9	50	20,9	180	75,0
22		Human is responsible for/to the living beings in environment.	1	,4	2	,8	11	4,6	53	22,1	173	72,1
23		Human has moral responsibility to the nature.	1	,4	2	,8	8	3,3	54	22,5	175	72,9

Findings for Sub-Problems

Findings for sub-problems are as follows:

Findings for first sub-problem

Sub Problem: Is there a significant difference statistically by gender between average scores of social sciences pre-service teachers' awareness of environmental ethics?

Table 3. *Mann-Whitney U-Test findings by variable of gender of attendees' evaluations for sub-dimensions of environmental ethics scale*

Dimension	Gender	N	Mean Rank	Rank Sum	U	p
Definition of Environmental Ethics	Female	119	126,39	15086,00	6151,500	,183
	Male	121	114,70	13834,00		
	Total	240				
Purpose of Environmental Ethics	Female	119	124,46	15041,00	6728,000	,309
	Male	121	116,60	13879,00		
	Total	240				
Reasons for Occurrence of Environmental Ethics	Female	119	129,54	14811,00	6123,500	,043
	Male	121	111,61	14109,00		
	Total	240				
Measures to Be Taken for Environmental Ethics	Female	119	126,77	15415,50	6453,000	,163
	Male	121	114,33	13504,50		
	Total	240				
Overall Mean	Female	119	129,31	15387,50	6498,000	,051
	Male	121	111,84	13532,50		
	Total	240				

* $p<0.05$

As is seen in Table 3, Mann-Whitney U test was applied to determine whether or not mean-scores that pre-service teachers got from environmental ethics awareness scale differed by gender. According to findings obtained, no significant differences were found in terms of/by independent variable of gender in sub-dimensions of ''Overall Mean'', ''Definition of Environmental Ethics'', ''Purpose of Environmental Ethics'' and ''Measures To Be Taken for Environmental Ethics'', of the measuring instrument ($p>0.05$).

There was a significant difference in terms of gender only in sub-dimension of ''Reasons for Occurrance of Environmental Ethics'' ($U=6123,500$, $z=2,026$, $p<0.05$). When we examined of which group the significant difference is in favor, it was understood that female students' mean ranks (129,54, n=119) were higher than those of male students (111,61, n=121). This finding can be interpreted that female students showed a higher success in comprehending reasons for occurrence of environmental ethics.

Findings for second sub-problem

Sub Problem: Is there a significant difference statistically by age on mean scores of social sciences pre-service teachers' awareness of environmental ethics?

As is seen in Table 4, Kruskal Wallis H test was applied to determine whether or not mean-scores that students who attended to the study got from environmental ethics awareness scale differed by age groups. It was detected that, by age groups, mean ranks of level and sub-dimensions of environmental ethics statistically differed significantly ($p<0.05$) in sub-dimensions of ''Purpose of Environmental Ethics'' ($p=0.018$), ''Measures To Be Taken for Environmental Ethics'' ($p=0.002$) and on the basis of ''Mean Average'' ($p=0.026$). On the other hand, no significant differences were encountered in sub-dimensions of ''Definition of Environmental Ethics'' and ''Reasons for Occurrence of Environmental Ethics'' ($p>0.05$).

Mann-Whitney U test was used to determine of which group the significant difference is in favor in the paired comparisons. In terms of overall mean, there was a significant difference ($p<0.05$) in favor of age group of 18-20 ($p=0.014$) between age group of 18-20 (mean rank=119,23) and age group of 21-23 (mean rank=98,15); and again in favor of age group of 18-20 ($p=0.043$) between age group of 18-20 (mean rank=60,08) and age group of 24+ (mean rank=45,77). These findings can be interpreted that increasing in age level decreased attitude toward environmental ethics.

Another significant which revealed as a result of Kruskal Wallis test is for sub-dimension of ''Purpose of Environmental Ethic''. According to results of Mann-Whitney U test, carried out to determine direction of difference between groups, a significant difference was found only in favor of age group of 18-20 ($p=0.004$) between age group of 18-20 (mean rank=119,32) and age group of 21-23 (mean rank=98,09).

Tablo 4. *Kruskal Wallis H Test findings by variable of age of attendees' evaluations for sub-dimensions of environmental ethics scale*

Dimension	Age Groups	N	Mean Rank	X^2	Sd	p
Definition of Environmental Ethics	18-20	84	131,61	3,709	2	,157
	21-23	128	115,84			
	24+	28	108,50			
	Total	240				
Purpose of Environmental Ethics	18-20	84	134,74	8,070	2	**,018***
	21-23	128	110,89			
	24+	28	121,70			
	Total	240				
Reasons for Occurrence of Environmental Ethics	18-20	84	126,34	1,018	2	,601
	21-23	128	118,08			
	24+	28	114,04			
	Total	240				
Actions (Measures) To Be Taken for Environmental Ethics	18-20	84	141,98	12,563	2	**,002***
	21-23	128	109,56			
	24+	28	106,07			
	Total	240				
Overall Mean	18-20	84	136,80	7,270	2	**,026***
	21-23	128	112,63			
	24+	28	107,59			
	Total	240				

* $p<0.05$

Another scale dimension that a significant difference was encountered as a result of the analysis was ‘‘Measures to Be Taken for Environmental Ethics’’. According to result of Mann-Whitney U test, carried out to determine direction of difference between groups, there is a significant difference in favor of age group of 18-20 (p=0.001) between age group of 18-20 (mean rank=123,49) and age group of 21-23 (mean rank=95,35); and again in favor of age group of 18-20 (p=0.011) between age group of 18-20 (mean rank=60,98) and age group of 24+ (mean rank=43,05).

Findings for third sub-problem

Sub Problem: Is there a significant difference statistically by grade level between mean points of social sciences pre-service teachers’ awareness of environmental ethics?

As is seen in Table 5, Kruskal Wallis H test was applied to determine whether or not mean -scores that students who attended to the study got from environmental ethics awareness scale differed by grade level. It was detected that, by grade level, mean ranks of environmental ethics and its sub-dimensions statistically differed significantly (p<0.05) on the basis of sub-dimensions of ‘‘Purpose of Environmental Ethics’’ (p=,029) and “Measures To Be Taken for Environmental Ethics’’ (p=,002). When we examined between which grade levels there is a significant difference in sub-dimension of ‘‘’Purpose of Environmental Ethics’’ and of which grade level it is in favor, we found that there was a significant difference in favor of 1st grade (p=,003) only between 1st grade and 4th grade. This finding can be interpreted that students made better sense of purpose of environmental ethics at first grade level than that of fourth grade.

Table 5. *Kruskal Wallis H Test results by variable of grade of attendees’ evaluations for sub-dimensions of environmenal ethics scale*

Dimension	Grade Level	N	Mean Rank	X^2	Sd	p
Definition of Environmental Ethics	1	60	133,18	3,437	3	,329
	2	60	121,19			
	3	60	116,51			
	4	60	111,12			
Purpose of Environmental Ethics	1	60	136,66	8,990	3	**,029***
	2	60	121,68			
	3	60	119,69			
	4	60	103,98			
Reasons for Occurrance of Environmental Ethics	1	60	120,08	,548	3	,908
	2	60	122,67			
	3	60	123,90			
	4	60	115,35			
Measures To Be Taken for Environmental Ethics	1	60	124,78	14,337	3	**,002***
	2	60	145,76			
	3	60	110,54			
	4	60	100,92			
Overall Mean	1	60	127,32	6,711	3	,082
	2	60	133,90			
	3	60	117,71			
	4	60	103,08			

* p<0.05

On the other side, when we examined between which grade levels there is a significant difference in sub-dimension of ''Measures To Be Taken for Environmental Ethics'' and of which grade level it is in favor, we detected that there was a significant difference in favor of 1st grade (p=,038) between 1st grade and 4th grade; of 2nd grade (p=,001) between 2nd grade and 4th grade; and in favor of 2nd grade (p=,004) between 2nd grade and 3rd grade. This finding can be interpreted that students understood better and have been more prone to apply measures to be taken for environmental ethics at first and second grade levels than those of third and fourth grade.

Results for forth sub-problem

Sub Problem: Is there a significant difference statistically by settlement between mean scores, gotten by social sciences pre-service teachers from environmental ethics awareness scale?

As is seen in Table 6, Mann-Whitney U test was applied to determine whether or not mean -scores that students who attended to the study got from environmental ethics awareness scale differed by settlement. It was found that, by settlement, mean ranks of awareness level and sub-dimensions of environmental ethics did not statistically differ significantly ($p<0.05$). This finding shows that variable of settlement hasn't had an impact on awareness of environmental ethics.

Table 6. *Mann-Whitney U-Test results by variable of settlement of attandees' evaluations for sub-dimensions of environmental ethics scale*

Dimension	Settlement	N	Mean Rank	Rank Sum	U	p
Definition of Environmental Ethics	Urban	188	121,06	22758,50	4783,500	,810
	Rural	52	118,49	6161,50		
	Total	240				
Purpose of Environmental Ethics	Urban	188	121,16	22778,00	4764,000	,745
	Rural	52	118,12	6142,00		
	Total	240				
Reasons for Occurrance of Environmental Ethics	Urban	188	123,37	23193,50	4348,500	,218
	Rural	52	110,13	5726,50		
	Total	240				
Measures To Be Taken for Environmental Ethics	Urban	188	121,45	22833,00	4709,000	,685
	Rural	52	117,06	6087,00		
	Total	240				
Overall Mean	Urban	188	122,79	23084,00	4458,000	,331
	Rural	52	112,23	5836,00		
	Total	240				

* $p<0.05$

DISCUSSION and CONCLUSIONS

When studies carried out on environmental ethics were examined, no study was encountered, scrutinizing directly relationship between social sciences education-environmental ethics. Studies carried out focused generally on relationship between courses such as science and social sciences etc., and subjects such as environmental issues or environmental education etc. On the other hand, in the literature, there are studies which have been carried out with teachers and pre-service teachers, with regard to environmental ethics, in the field of science. Besides, it is seen that studies of environmental ethics have concentrated particularly in philosophy field of study in that ethics is a sub-branch of philosophy.

Attendees' awareness and attitudes of environmental ethics were addressed on the basis of different variables in studies carried out in field of education. In their studies, Karakaya (2009) and Özer (2015) determined that students' attitudes and awareness of environmental ethics showed significant difference by gender. Tuncay (2010) detected that attitude of environmental ethics did not show a significant difference by gender, but differed by grade level. Karakaya (2009), as a result of his study, stated that there were significant differences in final year students' points of view to environment by department at which they are studying, gender, environment in which they raised and book genres that they read. In his study, Tuncay (2010) determined that attitude, adopted by physical sciences pre-service teachers toward environmental issues, showed differences by attendees' various characteristics. According to this, while gender factor had statistically no significant impact for attendees' on outlook, it was detected that grade level had an impact on it. In first stage of his study, Özer (2015) developed ''Environmental Ethics Awareness Scale'' and applied the scale to 3rd and 4th grade pyhsical sciences pre-service teachers at different universities. As a result of the study, it was found that pre-service teachers showed significant differences in their awareness of environmental ethics in terms of/by regions at which universities are located. The researcher also concluded that female students' awareness of environmental ethic was higher than that of male students. In his study, Bülbül (2013) aimed to determine perceptions of environmental ethics that physical sciences teachers had, and to detect whether or not the course of ''environmental science'' had an impact on pre-service teachers' perceptions of environment. As a result of the study, it was concluded that this course had no significant impact on pre-service teachers' perceptions of environmental ethics. In her study, Uzel (2014) examined biology pre service teachers' views of environmental problems. According to this, eleven elements were determined, having impact on biology pre service students' structures of moral reasoning. Turan (2009) revealed that bringing secondary education students in critical thinking skill increased their awareness of environmental ethics.

In this study, social sciences pre-service teachers' awareness levels of environmental ethics were examined in terms of undergraduate students from Social Sciences Teaching in Buca Faculty of Education at Dokuz Eylül University. It is understood, from answers given by pre service teachers to environmental ethics scale; they were conscious that disturbance of natural balance will affect all beings on earth; they thought that human had a number of moral responsibilities toward nature and beings; they supported that living and non-living beings apart from human should be taken into consideration within the scope of legal regulations made and moral responsibilities developing; they are aware that environmental issues today have posed threat for next generations; they did not lean towards consuming all natural resources even if it is within the scope of law; and they thought that education alone is not enough for solution of environmental problems.

In addition, according to problems and sub-problems, of which answers were sought in this study, results below were also reached concerning pre service teachers' perceptions of environmental ethics, from department of social studies teaching:

• It can be said that female students are relatively more conscious of environmental ethics than male students,

• In general, it was seen that values on perception of environmental ethics decreased as long as grade increased. In other words, it can be said that grade is inversely proportional to awareness of environmental ethics,

• It is likely that the course of ''Environmental Issues'' which is taken in 3rd term of undergraduate program of Social Studies Teaching has an impact for awareness levels of environmental ethics of second graders in coming out relatively good,

• Fourth graders' perceptions of environmental ethics turned out to be relatively low. It can be said it had impact in ensuing this result that it has been two years since they took the course ''Environmental Problems'' and that there was no another course, closely associated with environmental education in curriculum (partially related to course of The Current World Problems). It can be thought that also final year students' anxieties for graduating and for Public Personal Selection Examination have impact on this result,

• Although pre service teachers' ages are close, younger ones' awarenesses of environmental ethics are higher than those of older ones,

• When answers to the question of place of residence before coming to university were analyzed, it was understood that this variable had no noticable effect on awareness of environmental ethics. In other words, there is no observable difference in terms of consciousness of environmental ethics between students coming from rural areas and those coming from urban areas,

• In general, understandings of environment- and life-centered environmental ethics are dominant among pre service teachers. On the other hand, although it has remained out of date, traces from approach to human-centered environmental ethics are also seen.

Recommendations

Reaching of global environmental issues to dimensions that they are threating our earth's future has led legal sanctions on environmental protection and struggles of environmental organizations to fall short. At this point, social environmental consciousness needs improving urgently. Some recommendations were made based on results of this study.

Important duties fall to teachers in bringing ethical point of view on environment. For this reason, first of all, in-service training seminars which would bring the understanding of environmental ethics to teachers should be given. In addition, courses such as environmental education and environmental issues etc. should be made obligatory in the teaching undergraduate programs. Course syllabuses and contents in the formal education should be reorganized within the scope of environmental ethics in that environmental ethics is brought in the whole of society. By enlarging the scope of environmental education, it should be started from pre-school education. Particularly, activities which introduce natural environment, and which are didactic and entertaining, can be developed during the periods of pre-school and primary school. Besides these, within the scope of life-long learning, point of view on environmental ethics should be brought to people from all ages and all strata through non-formal education.

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