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The Impact of the Environmental Documentary Movies on Pre-service German Teachers' Environmental Attitudes*

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Abstract

This study examines the environmental attitudes of Turkish pre-service teachers of German as a foreign language using the German version of The Revised New Ecological Paradigm Scale (RNEP) and aims to compare New Ecological Paradigm (NEP) level of participants before and after a larger research project that uses documentary movies as a language teaching material. The comparisons were made according to demographic variables such as gender, age, education and language level when determining the NEP levels. A total of 170 pre-service German teachers (147 females, 23 males; age 17-32) contributed to the study. The findings from the present study indicate that environmental education is the most consistent factor in its relationship to levels of environmental concern, which was supported by the previous literature. The results suggest that trans-disciplinary environmental education is prior and necessary for individuals to increase their awareness and to develop abilities to reflect on their environmental responsibilities. The results of the present study also evidence that the use of environmental documentary movies have an important potential to foster environmental awareness of pre-service teachers.

Keywords: environmental documentary movies, German language teaching, revised new ecological paradigm scale, NEP

1. Introduction

The current study reports on the partial data of a two-year research project titled: "Using Environmental Documentary Movies in Foreign Language Teaching", started in 2012 in the department of Foreign Languages Education (German, French and English) at a large state university in Turkey. The project aimed to determine, benchmark and aid developing language skills, the environmental values and the attitudes of pre-service teachers of foreign languages. The research reported here focuses on the environmental aspect of the aforementioned project and its implementations during 2013-2014 fall semester. The present study is aimed at investigating the environmental values, attitudes and beliefs of pre-service teachers of German as a Foreign Language (GFL).

It is no doubt that environment has become the focus of attention in the world's agenda. Global warming, depletion of natural resources, environmental deterioration, extreme diseases caused by environmental disasters and many other environmental problems emerged since the last decades. As a result, many researchers, local, national and international institutions focused on the conditions for environmental quality or environmental concern. Despite the increasing awareness on environmental problems (Report of the World Commission on Environment and Development (WCED), 1987), it is recognized "that humans are not immune to ecological constraints and future generations and the ecosystem are in jeopardy" (Erdogan, 2009). Although the causes of the environmental problems and their solutions are complex and multidimensional, two main views concerning the environmental problems have aroused: Many researchers (Wilson, Harris & Small, 2008) argue that human activities such as technological developments, mode and relations of industrial production, distribution and consumption are responsible for the ecological crisis while others (Dunlap & Van Liere, 1978) claim that the beliefs, values and attitudes of the humans caused these problems. Yet, both of these views accept that the human being should immediately change their attitudes toward the environment to solve environmental problems.

*The data analyzed in this study collected during the project 'Using Environmental Documentary Movies in Teaching Foreign Languages' (Project-Code: KUAP(E)-2012/65)

It is generally agreed that change can come about if people develop positive attitudes. In this regard it is clear that the need for education to make people aware of their negative impacts on nature could only be realized through effective environmental education in primary, secondary, tertiary and higher levels and both in formal and non-formal settings as stated in the 10 Point Action Plan of the Tallories Declaration of the Association of University Leaders for a sustainable Future (ULSF, 1990). The Tallories Declaration suggests to: "1) Increase Awareness of Environmentally Sustainable Development: Use every opportunity to raise public, government, industry, foundation, and university awareness by openly addressing the urgent need to move toward an environmentally sustainable future. 2) Create an Institutional Culture of Sustainability. 3) Educate for Environmentally Responsible Citizenship … and, 4) Foster environmental literacy for all … to ensure that all university graduates are environmentally literate and have the awareness and understanding to be ecologically responsible citizens" (ULSF, 1990).

It is believed that individuals' socio-demographic attributes such as gender, age, education type and level, environmental education, nature connectedness, family structure, religious beliefs, political preferences, (family) income, country, ethnicity along with many other variables may have an influence on their attitudes towards environmental issues in varying degrees. However, age, gender and educational concerns (such as education type and level, scientific knowledge) have been the most studied variables predicting people's environmental concern. Yet, the research result indicates inconsistency in respect of these three socio-demographic variables (Casey and Scott, 2006; Dunlap, Van Liere & Mertig, 2000; Oerke, 2007; Shephard, Mann, Smith & Deaker, 2009; Weber, 2011). Many other socio-demographic variables were also considered to be influential on attitudes such as academic major, country, ethnical origin, religious beliefs, political tendencies etc. Similarly, the findings from research investigating such alternative variables presented a scattered pattern (Schultz, Zelezn, & Dalrymple, 2000; Rippl, 2004).

Environmental education and nature connectedness are studied by numerous researchers separately or along with other socio-demographic variables and found to be the most influential factors for fostering positive attitudes and behaviors. Sustainability education grows from a variety of sources and is delivered through special environmental education and through both formal and informal strategies across all continents (United Nations General Assembly, 2005). According to the reviewed literature of the many variables studied, environmental education and nature connectedness has proven to be the most consistent in its relationship to the levels of environmental concern. The studies investigating the effects of environmental education (Benton, 1993; Ewert & Baker, 2001) and/or attending outdoor activities (Bauer, 2006; Karlegger, 2010; Stern, Powell, & Ardoin, 2008; Wolf-Watz, Sandell, & Fredman, 2011) have displayed a positive relationship between these two factors and pro-environmentalism. Moreover, there is evidence that a single environmental course has an impact on changing students' attitudes and behaviors toward the environment in a positive way (Anderson et al. 2007; Rowe, 2002). Also, the Turkish studies carried out in the context of the current study indicated that environmental education, amateur nature activities and professional outdoor sports (Ardahan 2012; Kilic & Inal, 2010) proved to be the most effective ways of establishing positive attitudes and behaviors.

Despite the fact that Common European Framework (CEF) (Trim, North, Coste, & Sheils et al. 2001) suggests "environment" and "nature" as everyday language teaching topics and movies, including documentaries, as common materials, they are still not considered as canonic parts of language teaching in Turkey, and even in many developed countries for foreign language teachers and educational institutions (Leitzke-Ungerer, 2009; Thaler 2007) due to the lack of a number of instructional, physical, financial, logistical etc. factors (Leitzke-Ungerer, 2009; Wilts 2001). Studies on the use of film material in foreign language education (FLE) shows that feature films are dominantly preferred for the exchange of intercultural values (Gieselmann, 2010; Schwerdtfeger, 1989). In fact the potentials of the documentary movies, such as increasing (environmental) values and attitudes besides developing linguistic skills are accepted theoretically and suggested by many researchers (Kuchler, 2009; Thaler 2007) and language institutions, for example, CEF (Trim et al., 2001); however, studies investigating the implementation of such materials in this field still lacks. The project in general and the present study in particular depends on the idea that documentary movies concerning environmental issues are necessary materials as proposed by CEF (Trim et al. 2001) as well as the teachers of GFL are important actors of educating "for environmentally responsible citizenship" and "fostering environmental literacy for all by using every opportunity*",* as stated in the Tallories Action Plan (ULSF, 1990). In order to contribute to fill the gap in the literature, 15 documentaries were selected and used as in- and out-of-class activities during 2013-2014 academic year within the scope of the study. For one of the movies, an exercise book was prepared at the B1 and C1 levels for viewing and listening skills. The activities were prepared according to the content of the documentaries used in courses such as "Materials Development and Adaptation", "Reading Comprehension", and "Listening Comprehension" for two to four hours a week. The documentaries that were not dealt with during the classroom hours because of time constraints, were distributed to students to either make a 10-minute transcription or to make an oral presentation about the movie as an out-of-class activity. In-class activities were done before, during, and after viewing in three stages.

The present study is the first of its kind in two relevant aspects: First, while the attitudes of Turkish students from

different departments were researched (see for example Ardahan 2012; Erdogan, 2009; Kilic & Inal, 2010), none of the studies were conducted with GLT pre-service teachers, which constitutes an important part of the university population. Second, the role of environmental documentary movies in forming students' environmental attitudes has never been investigated. In Turkey the curriculum of FLE departments does not contain courses on environmental education and the topic is widely considered as the concern of science courses and majors such as geography, biology etc. The findings from the semi-structured interviews with teachers during the aforementioned wider project revealed that science teachers conduct course book-based lessons in theoretical lessons and do not use documentaries with environment and nature related content. Moreover, they do not focus on city problems such as waste processing, recycling, housing and shanty settlement, water quality etc. and nor do they organize social activities in cooperation with environmental organizations. Sustainability and environmental issues require inter- and trans-disciplinary solutions (Pearson, Honeywood, & O'Tole, 2005). But for many, especially state driven universities, it is bureaucratically very difficult to add additional courses for degree requirements. Integrating environmental literacy, social responsibility and sustainability course materials into existing liberal arts and specialty courses may help to solve this problem, as it did in some US higher education institutions (Rowe, 2002). Hence, one of the primary aims of the project is to offer compulsory or elective environmental courses in FLE Departments, as suggested by the CEF and/or to integrate documentaries with environmental content into language skills courses.

For this reason, this study aimed to identify current levels of environmental attitudes of Turkish pre-service teachers of German in detail. It is hoped that this information might help outline areas of possible changes necessary in teacher education programs, research and policy development. The first hypothesis is that there is a positive relation between working with documentary movies in language learning courses and environmental attitudes. It is hypothesized that working intensively with environmental documentary movies in German courses will have a positive impact on pre-service GLT teachers' attitudes. Thus, the expected positive relation between documentary movies and environmental attitudes is the main hypothesis of the project. Secondly, it is hypothesized that Turkish pre-service teachers of GFL will display average positive attitudes toward the environment before the treatment (as environmental problems are no longer an unexplored area due to mass media, activities of non-governmental organizations etc.), but there will be differences between scores in subscales such as ecocentricism and anthropocentricism. Turkish society is predominantly conservative and it is expected that their attitudes will be pro-environmentalist but of anthropocentric character, as found earlier by Casey and Scott (2006) and Dunlap et al., (2000). The third hypothesis is that the environmental attitudes of pre-service German teachers' may vary in regard of their socio-demographic attributes such as gender (e.g. females being more pro-environmental than males), age (e.g. younger being more pro-environmental than older, or reversely) and education level, as reported in previous researches, and language level (e.g. the higher grade and language level, the higher attitude scores) both before and after the project in overall attitude mean scores and on five subscales: fragility of nature's balance (e.g. consequences of human interference with nature), possibility of eco-crisis, anthropocentricism (saving environment to make use of it), ecocentricism (saving environment for its own sake) and limit to growth (e.g. overpopulation).

2. Method

2.1 Participants

The participants were 170 pre-service German teachers (147 females, 23 males). The ages of pre-service teachers attending the German Teacher Training Program in the Faculty of Education during the winter semester of 2013 ranged between 17-32 years. 44 of the participants were first year, 41 were second year, 36 were third year and 49 were fourth year students. Language level of participants varied from A2 to C1+ (A2 = 25, B1 = 78, B2 = 51, C1 and above = 16). None of the participants have received environmental education before. In addition, although they have watched various documentaries (e.g. animals, science and technology) they have not watched documentaries with an environmental content.

2.2 Instrument

Dunlap and Van Liere (1978) developed The New Ecological Paradigm (NEP) which considered the human as a part of the environment rather than the master of the environment. The Revised New Ecological Paradigm Scale (RNEP) (Dunlap et al. 2000) and NEP adopted a fully new approach by taking environmental variables into full account. Although there are many research tools to record the conceptions and attitudes of individuals or groups, the RNEP has been the one that is widely used successfully in the last decades, predominantly in the western countries. The RNEP aims to measure, classify, and better understand the values, attitudes and ecological worldviews of the individuals or groups in respect of a variety of socio-demographic attributes. The RNEP scale was translated and its validity and tests were made by Kaiser, Hubner, & Bogner (2005). The German version of RNEP, which has been used widely by many researchers such as Bauer (2006), Kaiser et al. (2005) and Weber (2011), was also used in the present study.

The revised NEP scale consists 15 items that relate to five dimensions (fragility of nature's balance, possibility of eco-crisis, anti-anthropocentrism, anti-exemptionalism, and limit to growth. Each of the five subscales has three items. Eight odd-numbered items of the Revised NEP Scale were worded so that the agreement indicates a pro-ecological view, and the seven even-numbered ones were worded so that the disagreement indicates a proecological worldview.

Respondents of the present study were asked to record their agreement with these items on a five-point Likert scale (5 = strongly agree, 4 = agree, 3 = unsure, 2 = disagree, 1 = strongly disagree). The scores for the even numbered seven anti-NEP items were reversed, so that '1' (strongly disagree) indicates '5' (strongly agree), '2' (disagree) indicates '4' (agree). Missing data were replaced by the mean score (3) before subsequent analysis. The internal consistency of the 15-item scale was calculated by using Cronbach's alpha coefficient. Both the pre- and post-test were found reliable with .63 and .71 alpha values respectively (Bland & Altman, 1997; George & Mallery, 2003).

2.3 Procedure

The German version of RNEP (Dunlap et al., 2000) scale was administered in classroom settings in regular class meetings during the 2013-2014 academic year. The data were collected from 1st, 2nd, 3rd, and 4th year pre-service teachers both at the beginning and at the end of the project. The participants were given information about the purpose of the research. They were informed that the participation in the survey was voluntary. Demographic information such as gender, age, grade, and language level were also collected with questions on the top of the survey. Respondents were also asked to record a personal code or number so that they could remain anonymous within the survey and also to allow data collection and comparison later (Shephard et al., 2009). Students responded by filling a number on a five point scale ranging from 1 to 5, which represented their feelings or thoughts on each item. Consequently, the current data was obtained from a total of 170 pre-service teachers' at the GLT department. All the survey forms were numbered and the codes recorded by the participants were used to match and compare the scores before and after the project.

3. Results

Data were analyzed to identify the pre-service teachers' attitudes toward the environment according to the RNEP and comparisons were made to test the first and second hypotheses. As the data regarding the sample groups did not have a normal distribution non-parametric tests were used for analysis. Wilcoxon Signed Ranks Test for two related or dependent samples and Wilcoxon Z test were used for test statistics. The overall mean scores before and after treatment, as well as paired differences, test statistics (Z) and p values are given in Table 1.

Table 1. Environmental Attitudes of Pre-service German Teachers before and after the project

Dimensions	N	Before the Project	After the Project	Paired Differences (M)	Wilcoxon Z
limit to growth	170	2.40	2.84	-.43	-9.29**
anti-anthropocentrism	170	2.38	2.92	-.54	-9.20**
fragility of nature's balance	170	3.24	3.66	-.42	-8.24**
anti-exemptionalism	170	2.08	2.93	-.85	-10.66**
possibility of eco-crisis	170	2.89	3.82	-.93	-10.90**
Overall	170	2.59	3.23	-.63	-11.28**

Each subscale has three items. Item responses' mean range from 1 (signifying extremely negative attitudes) to 5 (signifying extremely positive attitudes) **p<.01.

Paired difference scores have negative values as they are calculated by abstracting "after project" scores from the "before project" scores. As the after scores are bigger than the before scores, the paired differences are presented with a negative value, which indicates an increase in the attitudes of the participants at the end of the project. According to the findings (see table 1) there are statistically significant differences at the one percent level in pre-service teachers' attitudes between pre- and post-tests at all subscales indicating a positive change. The biggest difference was noted in the 'possibility of eco-crisis' subscale (from M = 2.89 to M = 3.82), which was respectively followed by "anti-exemptionalism" (M = 2.93), "anti-anthropocentrism" (from M=2.38 to M = 2.92), "limit to growth" (from M=2.40 to M = 2.84) and "fragility of nature's balance" (from M=3.24 to M = 3.66). The overall difference between the subscales in pre- and post-tests indicate a statistically significant growth at 1% level at the end of the project.

All the items of the RNEP scale can be considered as a single construct as well (Dunlap et al., 2000, p. 430; Shephard et al., 2009). There are also statistically significant differences between pre- (M = 2.59) and post-test (M = 3.23) results when the scale is considered as a single construct.

Statistically significant differences at 1% level were also identified among the subscales before and after the project. In the pre-test the lowest mean score was in anti-exemptionalism (M = 2.08). The mean scores of other subscales; anti-anthropocentrism (M = 2.38) and limit to growth (M = 2.40) also had statistically significant differences between

the mean scores of other subscales (p<.01). Similar differences were also apparent at the end of the project indicating that the mean scores of the aforementioned subscales had statistically significant differences from the other two.

To test the third hypothesis of the study, pre-service teachers' attitudes were compared according to certain demographic attributes such as gender, age, grade, and language level. As the data did not display a normal distribution Mann-Whitney U Test was used as a non-parametric test to compare two independent samples. Mean scores for each subscale according to gender variable is presented in Table 2.

Table 2. Gender Differences in Attitudes toward Environment before and after the project

Subscales		Before the Project		After the Project	
	n	*Mean*	*MW-U*	*Mean*	*MW-U*
Limit to growth					
Female	147	2.44	1234.0*	2.87	1313.5
Male	23	2.16		2.62	
Anti-Anthropocentrism					
Female	147	2.38	1648.0	2.95	1392.5
Male	23	2.39		2.77	
Fragility of nature's balance					
Female	147	3.32	841.0**	3.69	1285.0
Male	23	2.69		3.44	
Anti-Exemptionalism					
Female	147	2.10	1298.0	2.97	1158.0*
Male	23	1.91		2.63	
Possibility of eco-crisis					
Female	147	2.96	749.5**	3.87	1191.0*
Male	23	2.36		3.47	
Overall					
Female	147	2.64	792.5**	3.27	1070.5**
Male	23	2.30		2.99	

*p<.05 and **p<.01.

Table 2 shows that there are statistically significant differences between male and female students in three subscales before and after the project in two subscales. The significance is at p<.01 level in "possibility of eco-crisis" and "fragility of nature's balance" and it is at p<.05 level in "limit to growth subscales. In all subscales females have more positive attitudes than males. On the other hand, in the pre-test there were no statistically significant differences between males and females in anti-anthropocentrism and anti-exemptionalism (p>.05). According to the mean scores in the post-test, although there were statistically significant differences between genders in "possibility of eco-crisis" and "anti-exemptionalism" (p<.01) no difference was found in other subscales. When the overall mean scores are compared statistical significances were found between males and females in pre-test and post-test (p<.01). The mean scores from all subscales before and after the project as well as the overall mean scores showed that girls have more positive attitudes toward the environment than males.

As the normality measures were not met when comparing attitude mean scores with age, grade and language level Kruskall Wallis H Test (Chi-square) for k independent samples were used as a non-parametric test. Mean scores of attitudes according to age groups are presented in Table 3.

As seen in Table 3 there are statistically significant differences between age groups in the pre-test scores in "fragility of nature's balance", and "possibility of eco-crisis" dimensions, the oldest group (25+) having more concern than the younger (p<.01). However, there were no statistically significant differences between the age groups in "limit to growth", "anti- anthropocentrism", and "anti-exemptionalism" dimensions (p>.05). Considering the overall pre-test scores, having the highest average (M = 2.82), the oldest group of pre-service German teachers were more pro-environmentalist than the younger groups. After the project although all the mean scores in all dimensions increased, the only difference among the age groups were found in the "possibility of eco-crisis" dimension to the detriment of 17-20 age group (M = 3.70; p<.01). When the overall mean scores are considered post-test mean scores have increased in all age groups, yet no statistical significance was found among the groups (p>.05). The absence of difference among the groups was due to the increase in positive attitudes in the two younger groups as they reached the mean of the oldest group. The overall mean scores of the pre-service teachers indicate an increase in relation to older age. However, the difference between the number of participants in the 25+ age group and the other groups should be taken into consideration.

Table 3. Age Differences in Attitudes toward Environment before and after the project

Subscales		Before the Project		After the Project	
	n	*Mean*	*KW-H*	*Mean*	*KW-H*
Limit to growth					
17-20	106	2.40		2.80	
21-24	57	2.38	.26	2.89	2.06
25+	7	2.38		3.00	
Anthropocentrism					
17-20	106	2.40		2.99	
21-24	57	2.34	.50	2.80	4.48
25+	7	2.28		2.95	
Fragility of nature's balance					
17-20	106	3.17		3.61	
21-24	57	3.27	9.63**	3.71	5.00
25+	7	4.00		4.04	
Anti- exemptionalism					
17-20	106	2.12		2.87	
21-24	57	2.07	.06	3.05	5.51
25+	7	2.00		2.86	
Possibility of eco-crisis					
17-20	106	2.77		3.70	
21-24	57	3.02	11.57**	4.02	11.70**
25+	7	3.43		4.00	
Overall					
17-20	106	2.57		3.19	
21-24	57	2.69	3.64*	3.29	3.96
25+	7	2.82		3.37	

*p<.05 and **p<.01

The attitude mean scores were also compared with the grade level variable. The comparison is shown in Table 4.

As shown in the Table 4, education level seems to have played an essential role only in two dimensions of the scale both before and after the project. According to these findings, having the lowest scores, the third years are found to be more anthropocentric than other grade levels both before ($M = 2.11$, $p<.05$) and after the project ($M = 2.71$, $p<.01$). The second graders, however, have the lowest scores ($M = 2.75$, $p<.05$) in the pre-test and first graders have the lowest scores in the post-test ($M = 3.72$, $p<.01$), indicating less concern for the possibility of eco-crisis. There are no significant differences between grade levels neither in the rest of the dimensions nor in the overall pre- and post-test scores ($p>.05$). These findings indicate that there are statistically significant differences in certain dimensions of the scale, yet these do not present a linear increase from lower grade levels to the higher as it did in the age variable.

Table 4. Education Level Differences in Attitudes toward Environment before and after the project

Subscales		Before the Project		After the Project	
	n	*Mean*	*KW-H*	*Mean*	*KW-H*
Limit to growth					
1. Grade	44	2.39		2.79	
2. Grade	41	2.47	.54	2.79	1.23
3. Grade	36	2.39		2.84	
4. Grade	49	2.35		2.89	
Anti-Anthropocentrism					
1. Grade	44	2.38		3.16	
2. Grade	41	2.48	13.06*	2.90	20.44**
3. Grade	36	2.11		2.71	
4. Grade	49	2.48		2.87	
Fragility of nature's balance					
1. Grade	44	3.13		3.59	
2. Grade	41	3.13	5.36	3.63	2.01
3. Grade	36	3.28		3.69	
4. Grade	49	3.38		3.73	
Anti-Exemptionalism					
1. Grade	44	2.07		2.83	
2. Grade	41	2.18	2.09	2.84	7.01
3. Grade	36	1.97		2.97	
4. Grade	49	2.07		3.07	
Possibilityof eco-crisis					
1. Grade	44	2.82		3.64	
2. Grade	41	2.75	10.58**	3.74	21.84**
3. Grade	36	2.76		3.72	
4. Grade	49	3.12		4.12	
Overall					
1. Grade	44	2.55		3.20	
2. Grade	41	2.60	5.82	3.18	5.53
3. Grade	36	2.50	.12	3.19	
4. Grade	49	2.68		3.34	

*p<.05 and **p<.01.

The effect of the language level, which was assumed to be important in the comprehension of the German documentaries with environmental content, on the participants' attitudes toward the environment were identified and presented in Table 5.

According to the findings, there were no statistically significant differences in the participants' attitudes before the project in all subscales and the overall scores. After the project, the only difference was found at the "possibility of eco-crisis" dimension with pre-service teachers at the B1 level and the other groups, B1 group having the lowest score ($M = 3.68$, $p<.05$). The results demonstrate that there is not a relation between the language levels and the attitudes of the pre-service teachers before or after the project.

Table 5. Language Level Differences in Attitudes toward Environment before and after the project

Subscales		Before the Project		After the Project	
	N	*Mean*	*KW-H*	*Mean*	*KW-H*
Limit to growth					
A2	25	2.56		2.97	
B1	78	2.34	3.17	2.79	1.62
B2	51	2.36		2.78	
C1+	16	2.52		3.00	
Anti-anthropocentrism					
A2	25	2.52		2.97	
B1	78	2.40	4.72	2.94	2.07
B2	51	2.24		2.81	
C1+	16	2.48		3.08	
Fragility of nature's balance					
A2	25	3.28		3.75	
B1	78	3.33	4.73	3.67	2.34
B2	51	3.09		3.56	
C1+	16	3.13		3.85	
Anti-exemptionalism					
A2	25	2.18		3.00	
B1	78	2.05	2.82	2.84	4.20
B2	51	2.04		3.02	
C1+	16	2.12		2.98	
Possibility of eco-crisis					
A2	25	3.00		4.04	
B1	78	2.83	1.67	3.68	6.67*
B2	51	2.88		3.84	
C1+	16	2.94		4.06	
Overall					
A2	25	2.71		3.35	
B1	78	2.59	5.137	3.18	3.527
B2	51	2.53		3.20	
C1+	16	2.64		3.39	

*p<.05

4. Discussion and Conclusion

In the present study German Language pre-service teachers' attitudes toward the environment were investigated via German translation (Bauer, 2006; Kaiser, et al., 2005; Weber, 2011) of the RNEP scale (Dunlap et al., 2000) before and after a project that proposes the integration of documentaries into German Foreign Language lessons. The process involved the use of documentaries that concerns environmental problems (e.g. Home) and natural beauties of German speaking countries (e.g. Deutschland von oben, Wilde Heimat etc.) in various courses. The results indicate a significant increase in overall attitudes and in individual dimensions of the scale as it is claimed in the first hypothesis of the study. This increase suggests a positive relation between the use of documentaries with environmental content and attitudes toward the environment.

The integration of documentaries with environmental content into foreign language lessons could be an alternative for situations when it is not bureaucratically possible to offer environmental education (Rowe, 2002). The positive effect of documentaries on pre-service teachers' attitudes toward the environment supports the findings in the previous literature that suggests a positive relationship between environmental education (Bauer, 2006; Benton, 1993; Kilic & Inal, 2010) and nature-connectedness (Ardahan 2012; Karlegger, 2010; Wolf-Watz et al., 2011). The present study support Anderson et al. (2007) and Rowe (2002) who claimed that an environmental course has a positive effect on changing learners' attitudes and behaviors toward the environment. Moreover, the results also back the approach proposed by the Tallories Action Plan (ULSF, 1990), which claim the use of every opportunity to foster environmental literacy. Finally, the findings of the study coincides with other studies that suggest the integration of environmental education into all, but not just science, courses by taking an inter- and trans-disciplinary stand (see, Pearson et al. 2005; Rowe 2002).

Besides being an alternative solution to integrate environmental education into the education system "nature" and "environment" are essential contexts for language education. Within the content of documentaries the use of any cultural element related to the target language (life style, food, literature, dress etc.) has crucial value in developing environmental and cultural awareness in the language classroom.

The results of the study indicate that the German pre-service teachers have a human-centered attitude as claimed in the second hypothesis, however, on the contrary to the hypothesis they didn't have strong positive attitudes before the

project. According to the findings, the participants are aware of the possibility that the sensibility of the balance of the nature and the environmental problems can create an eco-crisis, yet, they appear to be conservative in topics such as "human domination of nature" and "rapid growth of population".

Before the project, lowest scores were obtained in "human mastery of nature" (anti-anthropocentrism, anti-exemptionalism) and "rapid growth of population" respectively. This human-centered approach has not changed at the end of the project (although all attitude means increased, at the human-centered dimension, this increase was smaller). Thus, environmentalist but anthropocentric character of the participants remained the same. It is expected that in traditional societies where environmental education is not offered, the individuals carry a human-centered attitude. This result is in line with the findings of earlier research that traditional societies and groups are less sensitive toward the environment and/or they carry an anthropocentric attitude (Casey & Scott, 2006; Dunlap et al., 2000; Dunlap, 2008). By displaying a human-centered approach, the participants of the study are aware of environmental issues, yet they believe that these issues are not going to create disasters that would affect the human race.

Another important finding of the present study is that the females have more positive attitudes than males at all dimensions and in overall mean scores both before and after the project by having an increase at the end. These results are coherent with other studies suggesting that females have more environmentalist behavior than males (Casey & Scott, 2006; Karlegger, 2010; Oerke, 2007; Shephard et al. 2009). It is argued that the reason why females are more environment-friendly is due to their social role as a caregiver which is traditionally characterized as being benevolent, nurturing, and preservative (Casey and Scott, 2006). It is taught that the aforementioned factors have an effect on the results of the present study.

Considering the relationship of age with environmental attitudes, the results received before the project display a linear progression in overall means with increasing RNEP scores by age. On the basis of subscales and dimensions the participants have higher susceptibility to "fragility of nature's balance" and "possibility of eco-crisis" at older age groups. Although there are not statistically significant differences between age groups in overall attitudes this incline has partially continued after the project. It is assumed that the reason for not having significant differences is because the mean scores of the younger groups increased and approached to those of 25+ age group. When the mean scores are analyzed after the project at each dimension there is only one statistical difference at the "possibility of eco-crisis" dimension against the youngest group. These findings do not coincide with the findings of previous researches which claimed that younger people have higher positive attitudes and concern for the environment (see, Casey & Scott, 2006; Dunlap et al, 2000). Some other studies also claimed that middle-aged (30-39) people have higher pro-ecological stance than younger and elder (see, Shephard et al., 2009), yet, some others argued that age is not a determinant (see, Weber, 2011). It can be concluded that in the present study certain local and individual provisions have a role in age-attitude relationship showing a relatively linear progression unlike the literature.

Education level shows a parallelism with age. Therefore, when constructing the hypotheses of the study it is assumed that participants' attitude mean scores will display an increasing linear progression at the grade level basis as well; however, no statistically significant differences were found in the overall RNEP scores before or after the project. At the subscales the only significant differences were at "anti-anthropocentrism" and "possibility of eco-crisis" dimensions. This difference does not create a linear pattern from lower grades to higher grades in both dimensions. This situation seems to be the result of individual characteristics of participants and does not coincide with other, but limited studies, in the literature suggesting a positive relation between educational level and attitude (see, Ewert & Baker, 2001).

It is widely assumed that movie materials are important in the development of language skills. Starting from A2, CEF (Trim et al., 2001) has identified movie skills for each level. A prerequisite of reaching linguistic and cultural goals via movies used in foreign language learning is related to the comprehension of the movie text and the learning of the content with a behavior-centered concern (Biechele, 2007). In this regard, the hypothesis concerning the comprehension of the movie content and claiming that higher language levels would facilitate the comprehension, would pave the way for more positive attitudes toward the environment, has not been proved. There could be several individual and psychological factors effecting this situation such as in- and out-of class activities selected, the effect of the concept of viewing comprehension (Schwerdtfeger, 1989), etc. Moreover, it could be expected that the lack of comprehension of the movie may not cause an increase in positive attitudes; yet, the comprehension of the movie may not necessarily effect the attitudes positively either.

Within the light of these findings it can be argued that although the integration of documentaries with environment and nature content into German language lessons via oral/written activities and research projects create situations for comprehensive discussions about environmental issues and pave the way for changing attitudes in a positive direction, it requires more than the efforts of single teachers, courses or projects for the sustainability of such a positive effect and to develop environmental-friendly behaviors, (Benton, 1993; Pearson et al., 2005). For the sustainability of environmental

education such courses needs to be integrated into all levels of education from kindergarten to university and even after tertiary education (Erten, 2004). As it is frequently emphasized in Tallories 10 Point Action Plan (ULSF, 1990), besides the field of education, public policies need to support and carry out a subsidiary role. Education systems, quality of education as well as environmental education and documentaries with nature and environment content are only some of the few parameters of the global environmental problems. However, the results from the study are of importance to disseminate the use of short or feature documentaries with environmental content in foreign language learning classes and in environmental education and to serve as an impulse for future studies.

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