

Theses Written About Environmental Education: Turkey - The Czech Republic Comparison

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Abstract

The purpose of this study is to compare the theses written on environmental education in Turkey and in the Czech-Republic. Within the scope of this study, which is conducted by using document analysis, the theses written in Turkey and the Czech-Republic about environmental education in 2007-2013 were compared in terms of year of issue, the type of the sampling and the type of the program in which the thesis is completed. The findings revealed that in 2007-2013, there are totally 130 theses written in Turkey and 49 theses written in the Czech-Republic. While the samplings of the theses written in Turkey mostly consist of pre-service teachers, the samplings of the theses completed in the Czech-Republic are comprised of elementary and high school students. Finally, it was determined that most of the theses in both of the countries were written in the departments affiliated to elementary school education.

Key Words: Environmental education, Turkey, The Czech-Republic, Descriptive statistics

Introduction

Each country wants to be powerful enough to have a say in international issues. This depends on how powerful, effective and up-to-date its education system and policies are. However, it seems to be possible for countries to determine the quality of their education systems by comparing them with the education systems and educational qualifications of other countries. In this respect, comparative studies conducted between two or more countries can bring new, different and more comprehensive viewpoints to educational program development attempts and also contribute to the evaluation of programs (Güzel, Karataş and Çetinkaya, 2010).

Through comparative education studies, information can be obtained about organizational basis and practical applications in the field of education in different countries. Moreover, comparative studies can reveal data about the ways followed by different countries to solve certain problems and thus, such studies can help countries to find solutions to their problems encountered in their education systems (King, 1979). In this connection, research pointed out that though students receive environmental education within the context of science courses in our country, they cannot attain the required environmental literacy level and the desired awareness of sustainability

(Erdoğan, 2009; Soran, Morgil, Yücel and Işık, 2000; Teksöz, Şahin and Ertepinar, 2010; Timur, 2011 Yılmaz, Morgil, Aktuğ and Göbekli, 2002). It is thought that by comparing our environmental education with environmental education of other countries, we can gain some valuable insights that can contribute to the solution of the problem (Tatlı and Adıgüzel, 2012). In this regard, it was decided that the Czech-Republic attaining better results from PISA and TIMMS exams would be suitable to compare with Turkey (EARGED, 2007; EARGED, 2010).

When the relevant literature is examined, it is possible to see studies conducted on different topics of environmental education such as tendencies and directions in master's and doctorate theses written on environmental education completed in 1992-2011 in Turkey (Yılmaz, Aydın and Bahar, 2015); general directions of the theses written about environmental literacy in 1992-2012 (Timur, Yılmaz and Timur, 2014); comparison of environmental policies of countries such as Fiji, Papua New Guinea, India, Oman and Greece with the environmental policy of Turkey (Bakırlı and Artun, 2011); comparison of science teacher education in Macedonia and Turkey (Srbnovski, Erdoğan and Ismaili, 2010); environmental education for pre-school children in different countries (Akçay, 2006); comparison of environmental literacy levels of pre-service teachers in Turkey and the Czech Republic (Kroufek, Çelik and Can, 2015). However, it was found that there is a paucity of studies comparing the theses written about environmental education in our country with those written in other countries. In this respect, the purpose of the current study is to compare the theses written on environmental education in Turkey and in the Czech-Republic in 2007-2013 in terms of their years of issue, sampling type and type of the program where the thesis is issued. For this purpose, answers to the following sub-problems were sought:

What is the distribution of the theses written on environmental education in Turkey and the Czech-Republic in 2007-2013 according to;

- a) years
- b) type of the sampling
- c) type of the program?

Methodology

Research Model

This study was conducted by using document analysis, one of the qualitative research methods. Document analysis is the examination of written and printed materials including information about the topic of research interest (Yıldırım and Şimşek, 2006).

Data Collection Instruments

In the current study, the theses to be analyzed were obtained from the national data bases of the corresponding countries and Proquest data base including theses from many countries. The obtained data are limited to the data available to researchers in both Turkey and the Czech Republic.

Data Collection Process

The information about a total of 185 theses written on environmental education in Turkey and in the Czech-Republic in 2007-2013 was collected by three science education researchers. Of the obtained 185 theses, 6 were discarded from the study as not enough information was reached about them. The remaining 179 theses were classified by using common coding criteria in relation to year of issue, analysis method employed, sampling type and type of the program where the thesis was completed. However, only the criteria of year of issue, type of sampling and type of program were used in the analyses.

Data Analysis

The data collected in the current study about year of issue, sampling type and type of the program variables of the theses completed in 2007-2013 were coded as follows with the agreement of the researchers from the two countries.

- Year of issue: 2007, 2008, 2009, 2010, 2011, 2012, 2013.
- Sampling of the study: pre-school, elementary school, secondary school, high school, few levels of schooling in combination, teachers and others (schools, extra-curricular activity zone, program evaluation, media, news, family, public etc.).
- Type of the program: elementary school teacher education, physics teaching, chemistry teaching, biology department/teaching, educational sciences, instructional technology, geography and geology, ecological sciences, social sciences and interdisciplinary works and administrative sciences.

Findings

In this section, the collected data are interpreted by tabulating them as frequencies and percentages in separate tables.

A. Comparison of the Theses Written in Turkey and the Czech Republic across Years

While comparing the graduate theses written on environmental education in Turkey and the Czech-Republic across years of issue, descriptive statistics were used. The obtained results are presented in Table 1. As can be seen in Table 1, while the number of the theses written about environmental education in Turkey in 2007-2013 is 130, it is 49 in the Czech-Republic.

Table 1.

Distribution of the graduate theses written about environmental education in Turkey and the Czech Republic in 2007-2013 across years

Countries	Years														Total	
	2007		2008		2009		2010		2011		2012		2013		f	%
	f	%	f	%	f	%	f	%	f	%	f	%				
Turkey	8	6	14	11	11	8	36	28	23	18	24	18	14	11	130	100
Czech Republic	5	10	3	6	8	16	10	21	4	8	8	16	11	23	49	100

As can be seen in Table 1, in all the time periods extending from 2007 to 2013, the number of the graduate theses written in Turkey is greater. On the other hand, in general it is seen that the number of these written on environmental education in Turkey increased from 2007 towards 2010 but this increase was not steady. The number of the theses written in 2010 is higher than the other years. Yet, since 2010, considerable decrease was observed in the number of the theses. In the Czech

Republic, on the other hand, the number of the theses increased between 2010 and 2013. Distribution of the graduate theses written about environmental education in Turkey and the Czech Republic in 2007-2013 across years is shown in Figure 1.

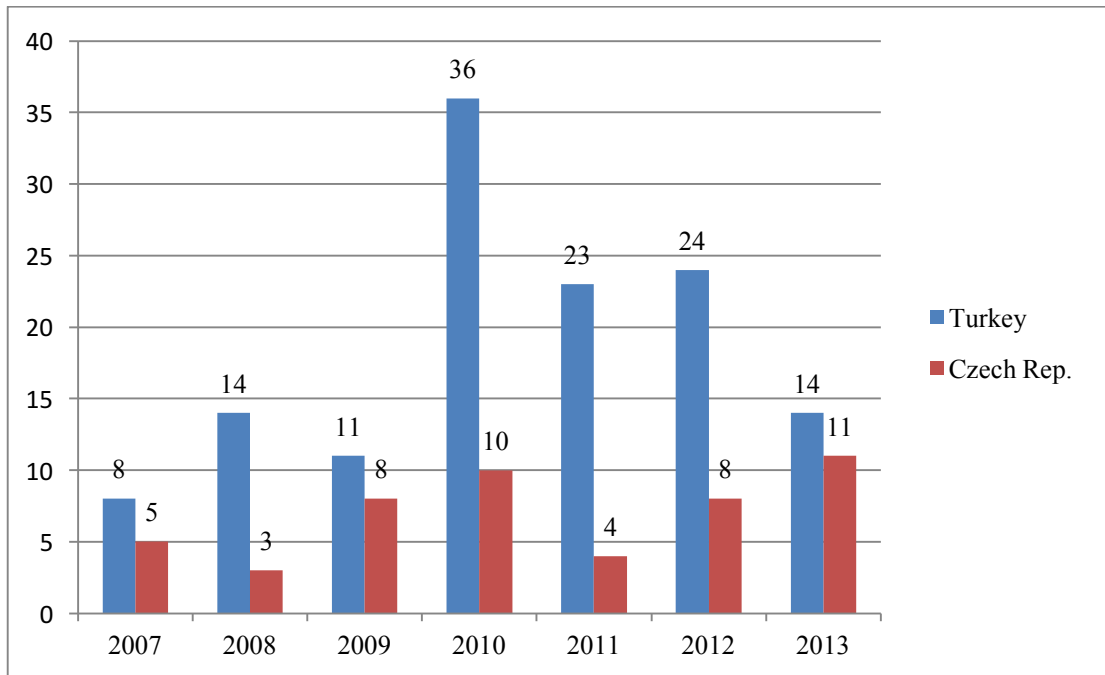


Figure 1.

Distribution of the graduate theses written about environmental education in Turkey and the Czech Republic in 2007-2013 across years

B. Comparison of the Theses Written about Environmental Education in Turkey and the Czech-Republic according to Sampling Type

The data related to the distribution of the graduate theses written about environmental education in Turkey and the Czech Republic according to sampling type are presented in Table 2.

As can be seen in Table 2, the most preferred type of the sampling in the theses written in Turkey is pre-service teachers who will give environmental education (f=34). This is followed by type of the sampling consisting of secondary school students (f=25). Then the sampling types gathered under the heading of “Others” and including media, written and mass media, extra-curricular activities zone, the existing program of the country and comparison with the environmental education program of another country (f=24); elementary school students (f=16); teachers (f=14). The least preferred sampling types are pre-school students (f=4) and mixed levels of schooling.

Table 2.

Distribution of the graduate theses written on environmental education in Turkey and the Czech Republic in 2007-2013 according to type of the sampling

Countries	Sampling Type																	
	Pre-school		Elementary school		Secondary school		High school		Pre-service teachers		Few levels of schooling together		Teachers		Others		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Turkey	4	3	16	12	25	19	9	7	34	26	4	3	14	11	24	19	130	100
Czech Republic	5	10	13	27	8	16	13	27	2	4	7	14	-	0	1	2	49	100

When the sampling types of the theses written in the Czech-Republic are examined, it is seen that the most preferred sampling type is elementary school students (f=13) and high school students (f=13). They are followed by secondary school students (f=8), mixed levels of schooling (f=7), pre-school students (f=5) and pre-service teachers (f=2). Sampling types gathered under the heading of “others” are the least preferred ones (f=1). No study using a sampling consisting of teachers was found in the theses written in the Czech-Republic.

The graphical representation of the distribution of the graduate theses written on environmental education in Turkey and the Czech Republic in 2007-2013 according to sampling types is shown in Figure 2.

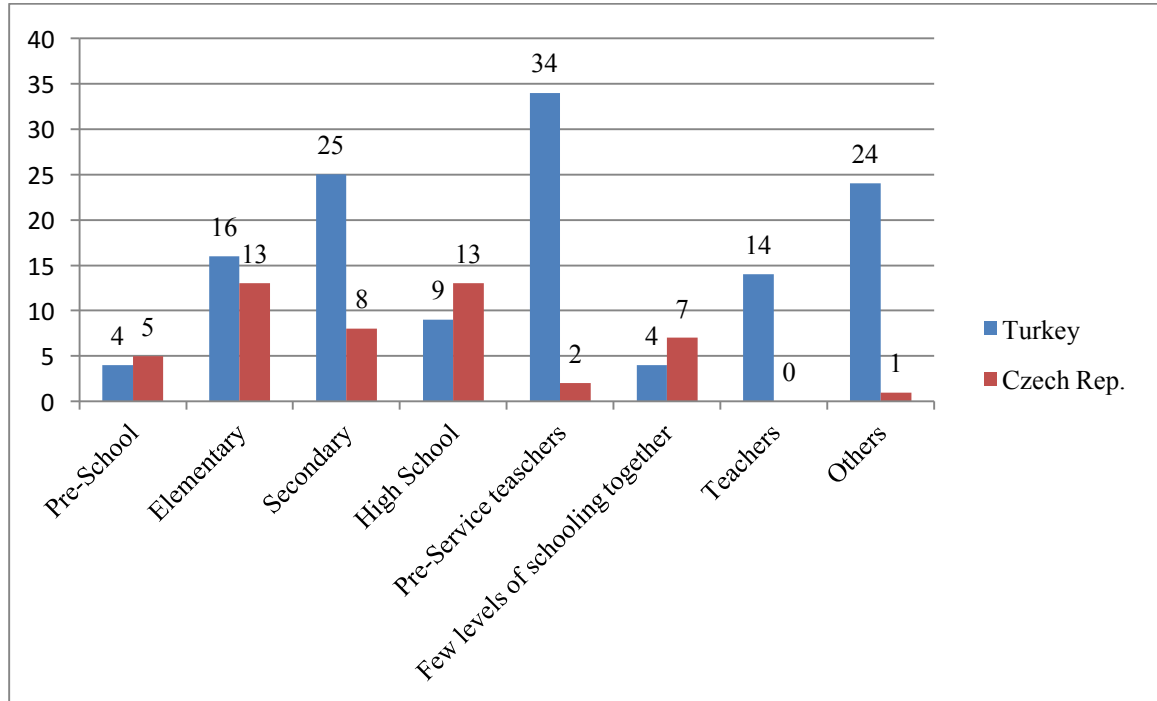


Figure 2.

Distribution of the graduate theses written on environmental education in Turkey and the Czech Republic in 2007-2013 according to sampling types

C. Comparison of the Graduate Theses Written on Environmental Education in Turkey and the Czech Republic according to Program Type

The data related to frequencies and percentages of the types of the programs in which the theses were written on environmental education in Turkey and the Czech Republic are given in Table 3.

As can be seen in Table 3, most of the theses written on environmental education in Turkey were completed in elementary school education programs (f=81) (science teaching, classroom teacher education etc.). From these data, it is clear that the number of the theses completed in elementary school programs is quite higher than the number of theses completed in other programs. Elementary school programs are followed by biology or biology teaching programs (f=19), ecological sciences (f=11); social sciences and interdisciplinary studies (f=7); educational sciences (f=6); geography and geology (f=2). The number of the theses completed in administrative sciences programs (f=2), physics and chemistry teaching (f=1) is highly smaller than the number of theses completed in the other programs. No study on environmental education completed in instructional technologies programs was found.

Table 3.

Frequency and percentage distributions of the theses written on environmental education in Turkey and the Czech Republic according to program types

Country	Program type																				
	Elementary school programs		Physics teaching		Chemistry teaching		Biology/ biology teaching		Educational sciences		Instructional technologies		Ecological sciences		Geography and geology		Social sciences and interdisciplinary		Administrative sciences		
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	
Turkey	8	6	1	1	1	1	1	1	6	5	-	0	11	8	2	1	7	5	2	2	
Czech Rep.	2	4	-	0	1	2	3	6	4	8	2	4	8	1	7	3	6	4	8	-	0

The highest number of the theses written on environmental education in the Czech Republic in 2007-2013 was completed in elementary school programs (f=24). Elementary school programs are followed by ecological sciences program (f=8), educational sciences and social sciences/interdisciplinary (f=4), biology/biology teaching (f=3) and geography and geology (f=3), instructional technologies (f=2). The number of the theses completed in chemistry teaching program is the smallest. No thesis completed in physics teaching and administrative sciences program was found.

The distribution graph of the graduate theses written on environmental education in Turkey and the Czech Republic in 2007-2013 according to program type is presented in Figure 3.

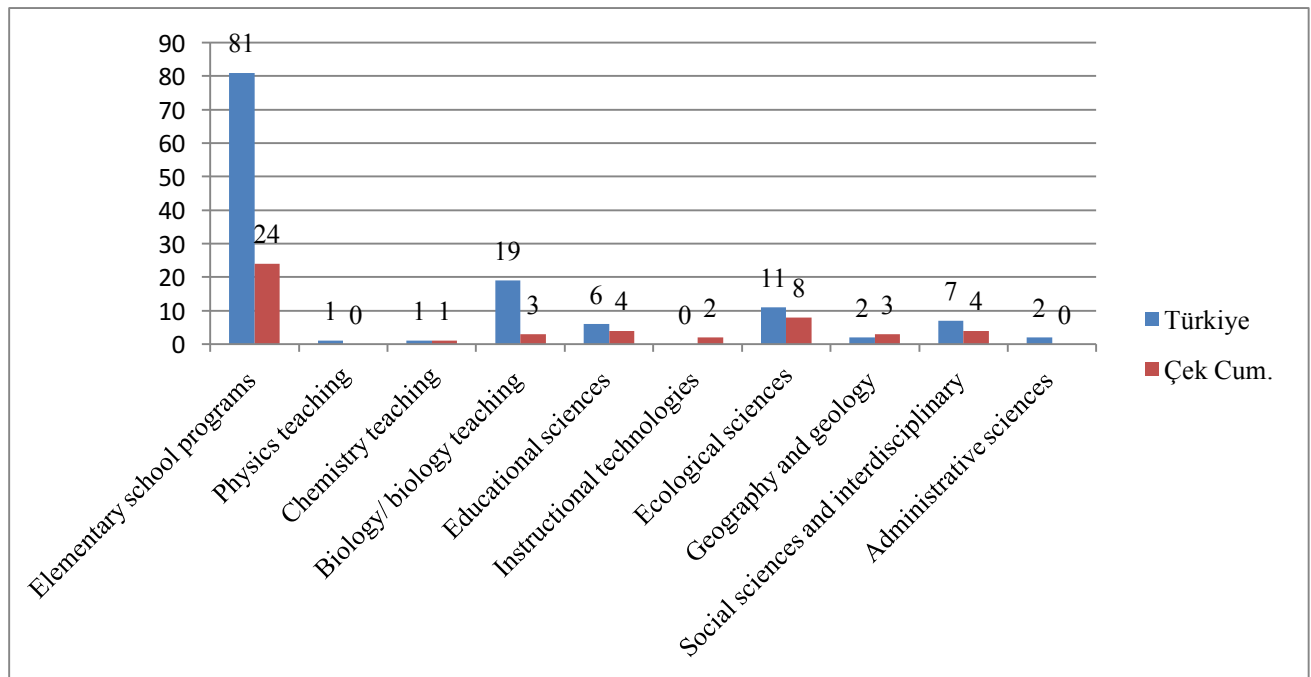


Figure 3.

Distribution of the graduate theses written on environmental education in Turkey and the Czech Republic in 2007-2013 according to program type

Result and Discussion

In the current study, the graduate theses written on environmental education in Turkey and the Czech Republic in 2007-2013 were compared in terms of year of issue, sampling type and program type.

The findings of the study revealed that the number of the graduate theses written on environmental education in Turkey is higher than the number of the theses written in the Czech Republic in 2007-2013. However, considering that the population of Turkey is 76.9 million and that of the Czech Republic is 10.5 million (OECD, 2015a; OECD, 2015b), it becomes clear that the number of the theses written in Turkey is relatively smaller. Therefore, it can be argued that the number of the graduate theses written on environmental education in Turkey is small and this number should be increased. This can be done by attaching greater importance to environmental education. On the other hand, the number of the theses written on environmental education increased up to 2010. This is believed to be because from the time when Kyoto Protocol was signed in 2008 up to the time when this protocol was put into force in 2009, issues related to environmental awareness drew greater attention. In the Czech Republic, on the other hand, relatively more theses on environmental education were completed between 2010 and 2013.

In Turkey, the theses written on environmental education mostly prefer pre-service teachers as their samplings. The reason for this preference might be because pre-service teachers are viewed to be very important for environmental education to be given to future generations. Timur, Yılmaz and Timur (2014) conducted a meta-analysis on research focusing on environmental literacy in Turkey and found that the number of the studies performed with the participation of pre-service teachers is higher than that of the other sampling types. In addition to this, students in Turkish education

system are generally exposed to environmental education at secondary education. Thus, in the sampling selection of theses written on environmental education, secondary school students are more preferred. This finding concurs with the finding of the current study. In the current study it was found that the second most preferred sampling type after pre-service teachers is secondary school students. Ünlü, Sever and Akpınar (2011) stated that secondary school students are widely preferred as participants in studies focusing on environmental education. In this regard, this finding is parallel to the finding of the current study. On the other hand, the number of the theses whose samplings consist of pre-school students and participants from few different levels of schooling was found to be the smallest. This leads us to think that greater importance is attached to environmental education at higher levels of schooling.

It was found that most of the theses written on environmental education in the Czech Republic focus on pre-school, elementary and high school students. The number of the theses conducted with these sampling types in Czech Republic is higher than that of the theses written in Turkey. This shows that in the Czech Republic, even at early ages, environmental education is believed to be important. However, the fact that there is no thesis written on teachers is notable.

Both in Turkey and in the Czech Republic, the highest number of theses on environmental education was completed in elementary school education programs because for both of the countries, students' receiving quality environmental education depends on the quality of the education given at elementary school. The number of the theses written on environmental education in biology/biology teaching programs and ecological sciences programs is higher in Turkey and this might be because the content of these programs is closely related to environment and environmental education. In the Czech Republic, on the other hand, the highest number of theses written on environmental education was completed in ecological sciences program. Yet, it is not correct to restrict environmental education to a single discipline. Therefore, increase in the number of studies conducted within the context of different disciplines in Turkey may help individuals to understand the environment from different perspectives. For example, Palmberg and Kuru (2000) stated that activities such as field trips, nature walks or camping increase students' interactions with nature, encourage them to be more sensitive towards nature and thus their social relationships can develop. This finding concurs with the findings of the current study.

Conclusions and Suggestions

In light of the findings of the current study, following conclusions were reached:

- In 2007-2013, 130 graduate theses were written on environmental education in Turkey and 49 theses in the Czech Republic.
- The highest number of theses on environmental education was completed in Turkey in 2010 and in the Czech Republic between 2010 and 2013.
- As the sampling type in the theses written in Turkey, the most preferred group is pre-service teachers and in the Czech Republic, it is elementary and high school students.
- The highest number of theses written on environmental education in Turkey and in the Czech Republic was completed in elementary school education programs.

In light of these findings, following suggestions can be made:

- Proportionally, the number of the theses written on environmental education in Turkey is lower than the number of the theses written in the Czech Republic. Therefore, more research should be conducted on environmental education in Turkey to raise people's awareness of increasing environmental problems and to inculcate scientific perspectives in people.
- Future research might involve different sampling types.
- As environmental education encompasses many disciplines, researchers from the fields of media, field trips and camping etc. should conduct research on environmental education so that more comprehensive perception of environmental awareness can be promoted.
- As the number of studies on pre-school children is small, more studies should be conducted on this sampling type so that environmental education can be given at early ages.

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