

The Role of Geography Course in Building Environmental Conscious

Fatih Aydin, Hüseyin Kaya and Mücahit Coşkun

Department of Geography, Karabük University, Karabük-Turkey

Abstract: In this research, secondary education students' views towards the role of geography lessons in building environmental conscious were examined. A total of 394 secondary school students participated in the research in the 2010-2011 academic year in the province of Karabük (Turkey). In this research Survey model was used and a questionnaire developed by Keçeci (2010) was used as a means of data collection. In the analysis of data besides descriptive statistics, t-test and one-way variance was used. The majority of secondary school students participated in the study of geography in creating environmental awareness courses that have expressed an effective course. Secondary students' views on the role of geography courses in forming environmental awareness not differ significantly by gender, grade level and students' learning indicated that there was no significant differences by their fields of study.

Key words: Geography • Environmental Education • Students' Views • Geography Teaching

INTRODUCTION

Raising conscious and sensitive individuals to environment appears to be the most effective way in solving these problems. Environmental education aims conservation and utilization of the natural environment related to the development of sensitivity, positive and permanent change of attitudes and behaviors of individuals. in the process of raising individuals sensitive to the environment training of school-age students is of great importance. secondary education is indisputable when raising students equipped in terms of environmental issues and all the students can not be university students [1, 2].

Environmental education is examined from different points of view by many branches of science. However, the limitations of these studies remain within the fields of science. Geography has a special importance in environmental education. Because geography is a science investigating the interaction between humans and the environment [3].

Geography takes on human and environmental interaction at a global scale. Because geography has a close relationship with both the natural sciences, social sciences and environmental problems, it has the advantage of a more comprehensive and objective look. Geography treats with people and places along with past, present and future. With this aspect geography is a science investigating about everything where people

work and live [4]. The most distinguishing feature of geography from other sciences is its point of view about the events. All sciences assess the events in depth and local scales but geography aims to think with global dimensions. Geography provides us not only the places where problems about environmental degradation occur or seen but also, other factors in the emergence of this problem and the dimensions of the problem at a global scale [5].

Geography is a science investigating the mutual interaction between humans and the environment. So environmental problems are the subject of Geography. Geography examines the use of the natural environment composed of hydrosphere, lithosphere, atmosphere and biosphere by humans. For this reason, environmental issues as water resources, land use and vegetation cover, land use, the use of renewable energy resources, climate change and its effects, aridity and desertification are the basic subjects of Geography [6].

In Geography Teaching Program (2005) the environmental issues were given significance due to the position of geography against environment and environmental problems. In the whole geography curriculum problems of environment have a significant place. Both the human and environmental relationships are dealt with in geography as well as the environment and environmental issues gained more importance recently, environmental issues took a particular place in the curriculum. One of the lessons of geography

Table 1: Proportional distribution of environmental attainments in geography teaching program (2005)

Grade	The number of attainments	Environmental attainments (f)
9th grade	31	3
10th grade	36	3
11th grade	41	14
12th grade	39	11
Total	147	31

Source: Aslan (2009:22)

curriculum in secondary education from five learning fields is "environment and society" and was accepted as a common area of learning of all grades [7].

In the field of environmental and community, the use of natural resources, natural disasters, environmental issues, management and planning, environmental change issues are handled and examined. the place of environmental issues in geography curriculum and the rate according to classes are given in Table 1.

As seen in Table 1, the total number of environmental attainments in geography teaching program is 31. The proportion of environmental attainments among the general attainments is 20 %. According to this values it can be said that environmental issues have more place in geography curriculum.

When the general aims of geography curriculum is examined it can be seen that a majority of these aims are through building a conscious for environment. These aims were given below [7].

With the Geography Teaching Plan, the Students:

- Grasp the notional and theoretical frames and use the research and presentation techniques in the formation process of geographic knowledge.
- Acquire geographic investigation skills in terms of human-nature relations.
- Establish connections between the main constituents of universe and life.
- Grasp the run and change of nature and human systems.
- Improves a conscious for adopting spatial values (produced and consumed by nature and human) that belong to their countries and the world starting from their surroundings.
- Improves the conscious towards the ecosystem cycle.
- Improve "the conscious for saving" in the use of human and natural resources by considering

the spatial planning in terms of compatible synergy and continuity of the values produced by human and nature resources.

- Investigate the possibility of local and global interactions spatial processes.
- Grasp the importance of harmony between developmental processes and nature.
- Develop applications for methods of protecting and taking precautions by evaluating natural hazards and environmental problems.
- Grasp that the role of environmental, cultural, political and financial associations that are efficient in both regional and global scale in international affairs in geographic perspective.
- Have the conscious of Turkey which is a country of experience and synthesis with its potentials by considering its geographical aspects in terms of regional and global relations.
- Adopt the importance of geographic values in getting "the conscious of motherland" .

As stated in the general aims part above geography course have the students acquire geographic investigation skills in the frame with human-nature relations. The individuals realize the interaction between human and nature, perceive the problems came along by this relation and investigate the the reasons and results of these problems.

Geography education is so significant in raising individuals in terms of realizing environmental problems starting from neighborhood to the whole world, responsible and sensitive. Because of this reason the role of geography in building conscious for environment in the geography curriculum should be evaluated. A majority of general aims of secondary education geography courses contain environmental issues through building conscious.

Determining whether the attainments were given or not, if not given, the shortages and evaluating whether the students had sufficient conscious for environment should be considered. With this study it was aimed to put forth the efficiency of geography courses in environment education, it is also thought that the findings gathered through the research may lead to understand the adequacy of geography courses in building conscious for environment. As a result of the literature review it was also found that there has been an increase in the number of studies about environmental issues but stil there are a few studies on geography and environmental education. With this respect it is thought that this study will contribute to the geography education field.

Table 2: Personal information of the research students

		<i>f</i> (n=394)	Percent (%)
<i>Gender</i>	Boys	222	56.3
	Girls	172	43.7
<i>Grade Levels</i>	Grade 9	127	32.2
	Grade 10	84	21.3
	Grade 11	129	32.7
	Grade 12	54	13.7
<i>Students'</i>			
<i>Fields of Study</i>	Social Sciences	68	17.3
	Turkish-Maths	95	24.1
	Sciences	96	24.4
	Other	135	34.3

The general aim of the research is to evaluate the the role of geography in constituting environmental conscious based on secondary education students' views. In the frames of this general aim the problem statement and sub problems of the research are given below:

Problem Statement: What is the role of geography courses in building conscious for environment?

Sub Problems:

- What are the secondary education students' perspectives towards the role of geography lessons in building environmental conscious?
- Do the secondary education students' perspectives towards the role of geography lessons in building environmental conscious have significant variance according to *gender variable*?
- Do the secondary education students' perspectives towards the role of geography lessons in building environmental conscious have significant variance according to *grade level variable*?
- Do the secondary education students' perspectives towards the role of geography lessons in building environmental conscious have significant variance according to *fields of study* variable?

Method: This research is a *general survey model*. Survey models are the approaches describing the interaction between attitudes by taking current events relations and conditions at an earlier event into account. Survey models are the arrangements of the scan carried out on all of the universe or a group of sample taken from it or carried on samples in a universe composed of many elements [8].

Study Group: Secondary education students participated in the research from Karabük city (Turkey) in the first term of 2010-2011 academic year. The study sampling was formed randomly. Personal information of the research students was shown in Table 2.

As seen in Table 2, the participants of the research are 394 students. 222 of these students are boys and 172 of them are girls. Among the research participants; 127 students are 9th grade students, 84 students are 10th grade, 129 students are grade 11 and 54 students are 12th grade students.

Data Collection Tool and Data Analysis: Data collection tool was developed by Keçeci (2010). The scale with 10 expressions was prepared according to five measures as “*I definitely agree*”, “*I agree*”, “*I have no idea*”, “*I disagree*” and “*I definitely disagree*”. The reliability and validity studies of this measuring tool were determined before and it was decided to be used in this study in accordance with the views of two expert academicians on geography education field.

In the the analysis of data besides descriptive statistics, In order to determine whether there is a significant difference or not according to “gender” variable “*independent samples t-test*” was used. In order to determine whether there is a significant difference or not according to “grade level” and “students’ fields of study” variables “*one way variance analysis (ANOVA)*” was used. At the end of the analysis, when there is significant difference “*LSD test*” was used to determine which group or groups indicated the difference.

Findings

1. Secondary Education Students' Views Towards The Role of Geography Lessons in Building Environmental Conscious

The frequency, percentage and arithmetic average values of secondary education students' perspectives on their roles for forming the consciouss of environment were given in Table 3.

As seen in Table 3, 45.7 % of the students stated that they agree with the statement “*the role of geography lessons is important in my realizing the environmental problems around me*”. 55.6 % of the students agree with the statement “*the role of geography lessons is important in my realizing the global environmental problems*”. According to the students' answers for the given statements, nearly half of the secondary education students think that the role of geography lessons is important in realizing the environmental problems in

Table 3: The average distributions of frequency, percentage and arithmetic average values of secondary education students' views towards the role of geography lessons in building environmental conscious

Students' Views Towards The Role of Geography Lessons in Building Environmental Conscious	I completely agree		I agree		I have no idea		I do not agree		I completely disagree		Arithmetic Mean
	f	%	f	%	f	%	f	%	f	%	
1 The role of geography lessons is important in my realizing the environmental problems around me	92	23.4	88	22.3	118	29.9	36	9.1	60	15.2	3,29
2 the role of geography lessons is important in my realizing the global environmental problems	108	27.4	111	28.2	114	28.9	59	15.0	2	0.5	3,67
3 I learnt the harmful activities for the environment by geography lessons	102	25.9	129	32.7	111	28.2	-	-	52	13.2	3,58
4 I learnt the environmental results of population increase by geography lessons	71	18.0	166	42.1	105	26.6	50	12.7	2	0.5	3,64
5 I learnt that our natural resources are not limitless so that we should save	70	17.8	186	47.2	65	16.5	30	7.6	43	10.9	3,53
6 I got information about the importance of renewable energy resources that are friendly to the environment.	63	16.0	197	50.0	43	10.9	56	14.2	35		
8.9	3,50										
7 I learnt about the effects of environmental pollution in geography lessons.	48	12.2	141	35.8	106	26.9	70	17.8	29	7.4	3,27
8 I understood that I should be sensitive for environmental problems through geography lessons	70	17.8	134	34.0	66	16.8	65	16.5	59	15.0	3,23
9 I realized the importance of national and international cooperation in the solution of environmental problems in geography lessons.	85	21.6	159	40.5	66	16.8	55	14.0	29	7.4	3,54
10 I think that geography lessons are influential in constituting environmental conscious.	100	25.4	131	33.2	88	22.3	46	11.7	29	7.4	3,57
General mean value of the questions towards the role of geography in building environmental conscious.											3.48

their surroundings and in the world. As seen in Table 3 for "I learnt the harmful activities for the environment by geography lessons" statement, 58.6 %, "I learnt the environmental results of population increase by geography lessons" statement 65 %, "In geography lessons, I learnt that our natural resources are not limitless so that we should save." Statement 65 %, "I got information about the importance of renewable energy resources that are friendly to the environment" statement 66 %, "I learnt about the effects of environmental pollution in geography lessons" statement 48 %, "I understood that I should be sensitive for environmental problems through geography lessons" statement 52%, "I realized the importance of national and international cooperation in the solution of environmental problems in geography lessons"

statement 62 % of the students agreed. 58 % of the students stated they agree with the statement in the last question of the questionnaire "I think that geography lessons are influential in constituting environmental conscious."

The research secondary education students can be said that they generally agreed (arithmetic mean=3.48) with the statements through the role of geography lessons in building environmental conscious and think geography as an effective lesson in the constitution of environmental conscious.

2.Comparison of Secondary Education Students' Views towards The Role of Geography Lessons in Constituting Environmental Conscious According to "Gender" Variable

Table 4: T-test results of secondary education students' views towards the role of geography lessons in constituting environmental conscious and their gender

Gender	N	\bar{x}	S	sd	t	P
Male	222	35,1622	9,77904	392	,757	,449*
Female	172	34,4593	8,22872			

*p>0.05

Table 5: Descriptive statistics of students' views according to class levels

Grade	N	Mean	Std. Deviation
Grade 9	127	35,9370	8,00074
Grade 10	84	33,3571	10,13124
Grade 11	129	36,8760	8,49909
Grade 12	54	29,8148	9,41110
Total	394	34,8553	9,13021

Whether there is significant difference between students' views towards the role of geography lessons in constituting environmental conscious and their gender or not was determined by independent t-test and the results of the analysis were given in Table 4.

When table 4 is examined secondary education students' views towards the role of geography lessons in constituting environmental conscious do not show significant difference according to "gender" [$t_{(392)} = ,757$; $p > 0.05$].

This finding can also be commented as there is not a significant relation between secondary education students' views towards the environment and their gender.

3.Comparison of Secondary Education Students' Views towards The Role of Geography Lessons in Constituting Environmental Conscious According to "Class Level" Variable

Whether there is significant difference between secondary education students' views towards the role of geography lessons in constituting environmental conscious and "class level" variable or not was determined by by "One way variance analysis (ANOVA)". Descriptive statistics of secondary education students' views towards the role of geography lessons in building environmental conscious were given in Table 5 and ANOVA results were given in Table 6.

When table 6 is examined secondary education students' views towards the role of geography lessons in constituting environmental conscious show significant difference according to "class levels" [$F_{(3-390)} = 9,522$; $p < 0.05$].

In order to find which class levels caused this difference "Multi Comparison Test (LSD)" was applied. The results of this test were given in Table 7.

When table 7 is examined, secondary education students' views towards the role of geography lessons in constituting environmental conscious show significant difference between 9th grades and 10th grades, 9th grades and 12th grades, 10th grades and 11th grades, 10th grades and 12th grades, 11th and 12th grades.

Table 6: ANOVA results of secondary education students' views towards the role of geography lessons in constituting environmental conscious according to class level

Source of the variance	Sum of squares	df	Mean square	F	P
Between Groups	2235,80	3	745,269	9,522	,000*
Within Groups	30524,94	390	78,269		
Total	32760,75	393			

*P<0.05

Table 7: LSD test results of class levels according to students' perspectives

Grade (I)	Grade(J)	Average Difference (I-J)	Standard Deviation	Significance Level
Grade 9	Grade 10	2,57987	1,24421	,039*
	Grade 11	-,93896	1,10591	,396
	Grade 12	6,12219	1,43726	,000*
Grade 10	Grade 9	-2,57987	1,24421	,039*
	Grade 11	-3,51883	1,24037	,005*
	Grade 12	3,54233	1,54311	,022*
Grade 11	Grade 9	,93896	1,10591	,396
	Grade 10	3,51883	1,24037	,005*
	Grade 12	7,06115	1,43393	,000*
Grade 12	Grade 9	-6,12219	1,43726	,000*
	Grade 10	-3,54233	1,54311	,022*
	Grade 11	-7,06115	1,43393	,000*

* P<0,05

Table 8: Descriptive statistics of students' views according to fields of study

Field	N	Mean	Std. Deviation
Social Studies	68	37,2353	6,31539
Turkish- Maths	95	32,8632	9,99959
Sciences	96	33,9479	9,95502
Other	135	35,7037	8,78268
Total	394	34,8553	9,13021

Table 9: ANOVA results of the scores of secondary education students' opinions according to their fields of study

Source of the variance	Sum of squares	df	Mean square	F	P
Between Groups	938,410	3	312,803	3,834	,010*
Within Groups	31822,34	390	81,596		
Total	32760,75	393			

*P<0.05

Table 10: LSD test results of fields of study according to students' perspectives

Field (I)	Field (J)	Average Difference (I-J)	Standard Deviation	Significance Level
Social Studies	Turkish- Maths	4,372	1,43487	,002*
	Science	3,287	1,43174	,022*
	Other	1,531	1,34326	,255
Turkish- Maths	Social Studies	-4,372	1,43487	,002*
	Sciences	-1,084	1,30723	,407
	Other	-2,840	1,20968	,019*
Sciences	Social Studies	-3,287	1,43174	,022*
	Turkish- Maths	1,084	1,30723	,407
	Other	-1,755	1,20597	,146
Other	Social Studies	-1,531	1,34326	,255
	Turkish- Maths	2,840	1,20968	,019*
	Sciences	1,755	1,20597	,146

* P<0,05

4.Comparison of Secondary Education Students' Views towards The Role of Geography Lessons in Constituting Environmental Conscious According to "Fields Of Study" Variable

Whether there is significant difference between secondary education students' views towards the role of geography lessons in constituting environmental conscious and their fields of study or not was determined by "One way variance analysis (ANOVA)". Descriptive statistics of secondary education students' views towards the role of geography lessons in building environmental conscious were given in Table 8 and ANOVA results were given in Table 9.

When table 9 is examined secondary education students' views towards the role of geography lessons in constituting environmental conscious show significant difference according to their fields of study [$F_{(3,390)}=3,834; p<0.05$]. In order to find which fields of study caused this difference "Multi Comparison Test (LSD)" was applied. The results of this test were given in Table 10.

When table 10 is examined, secondary education students' views towards the role of geography lessons in constituting environmental conscious show significant difference between the fields of social studies and Turkish- maths, social studies and Sciences, Turkish-Maths and other (no field of study was chosen).

RESULTS AND DISCUSSION

The arithmetic mean of secondary education students' views towards the role of geography lessons in constituting environmental conscious was determined as 3,48. 10 statements through the role of geography lessons in building environmental conscious were given. When the statements examined a majority of the students stated that geography lessons have an important role in realizing the environmental problems in their surroundings or distant places, learning the reasons and results of environmental problems, in building conscious for saving the natural resources, treating more sensibly to the environment, realizing the importance of clean energy

resources and understanding the importance of national and international cooperation in the solution of the problems.

Taking this result into consideration it can be inferred that geography lessons are influential in students' building up environmental conscious. These general findings of the research support the research findings that were carried out over high school students in Aydın Province by [6]. In the mentioned research the average of secondary education students' views towards the role of geography lessons in constituting environmental conscious is 3,81 (I agree). Students find geography as an important lesson in building up environmental conscious.

Among the research students' answers, there is an increase in some of the statements; (statements: 1,2,7 and 8) "I have no idea", "I do not agree" and "I completely agree". One of the reasons that students do not find the role of geography in some issues of environment sufficient may be because of teaching methods applied during the teaching process. As known the new teaching programme implemented in 2005 was prepared in accordance with the constructive teaching approach. Constructive Learning theory that has an important place in geography teaching aims to raise students that make researches to have deep knowledge and be able to use this knowledge when and where necessary appropriately instead of dealing with passive learners. Teaching techniques applied in geography lessons are usually insufficient, in students' learning and using what they have learnt. The most important reason for this is using the teacher-centered teaching methods where students passive during the learning process.

The teaching methods that students actively involved in the activities should be used through the teacher's guidance instead of using these teaching methods. There are learning approaches that provide students in establishing a relationship between their knowledge with new pieces of knowledge observing their own learning and adopting what they have learnt in the related areas through constructivist learning theory in integration with student-centered teaching methods like cooperative learning, problem-based learning and project-based learning [9-11]. Experimental investigations put forward that with the use of student-centered teaching in environmental issues in geography increase the students' achievements and attitudes in the lessons.

In his study Onal (2008) found out that using active learning applications in the teaching of environmental themes in geography, increase the achievement and attitudes in the lessons [5].

In his research Bilgi (2008) stated that environment education with active learning model has more influential and positive tracks over the students in terms of environmental knowledge and attitudes rather than teacher-centered environment teaching. He concluded that using active teaching strategies and methods can be used in secondary education in the teaching of geography [11].

Demirkaya, Mutlu ve Upak (2003) stated that 4MAT teaching system can be used in environment education and increase the achievement levels [12].

In his study Aksoy (2003) stated that with the help of problem solving method students gain a systematic thinking and learn step by step how to cope with the environmental problems that they meet in their real lives and improve conscious for environment [13].

One of the results that were received in the study is that secondary education students' views towards the role of geography lessons in constituting environmental conscious did not show significant difference according to *gender*. But the role of geography lessons in constituting environmental conscious had significant difference according to *grade levels*. This difference is especially seen between 11th-12th grades and other grades. The reason of this may be students' preparation process for the university entrance exams. It was also found a significant difference in the research that students' views towards the role of geography lessons in constituting environmental conscious according to their *fields of study*. The reason for this difference may be caused by the variation of geography lesson hours according to the fields in secondary education and coefficient values of geography have differences according to the fields of study in the university entrance exams.

According to the findings of the study the following suggestions were offered:

This study was limited to the secondary education students in Karabük city center. Such studies will have contributions to the development process of geography curriculum. Because of this the universe of the study should be widened. Geography lesson is one of the lessons that contain environmental issues in the secondary education schools in our country.

Because of this reason, the implementers of this curriculum, especially the geography teachers have significant responsibilities. The basic responsibility of the geography teachers is to have the students adopt positive behaviours rather than have them acquire integrated points of view towards environment and teaching about environment.

In this context the research students' views support the idea that geography lessons are influential in building conscious for environment. This situation increase the importance of environmental issues in geography curriculum. A systematic approach in environment education can not be applied because both geography teachers' interests to the issue and teaching methods vary even the geography curriculum leads the geography teachers in environmental education. With the researches it was concluded that student centered teaching methods have positive influences over students' attainment and attitudes. Teaching methods that were based on constructive approach in the teaching of environmental issues (*3E-4E-5E models, Project based learning, 4MAT method, problem based learning, cooperative learning etc.*) should be used. Geography teachers should be involved in the activities like vocational courses, conferences and seminars on environment education.

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