



# An Experimental Approach to Determining the Effect of Geography Education on Raising Citizenship Awareness

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## **Abstract**

The main purpose of this study is to determine the effect of geography education on the acquisition of citizenship awareness with an experimental approach. A total of 140 students aged 16-18, who were studying at high schools, were included in the study. Firstly, the pre-test was applied to the participants, then 20 hours of online lessons were given in a total of 4 weeks, and finally, the post-test was applied. The data of the study were evaluated using quantitative analysis methods. The most basic finding of the research was that geography education significantly increased the citizenship awareness levels of students. Citizenship awareness levels of the students increased by 21% and this increase was found to be significant ( $p<0.05$ ). And, the significant increase in all gender and GPA groups showed that geography education was beneficial for all students with different gender and achievement characteristics.

**Keywords:** Citizenship Consciousness, Experimental Approach, Geography Education, Quantitative Research.

## **Coğrafya Eğitiminin Vatandaşlık Bilincinin Arttırılmasına Etkisinin Belirlenmesine Yönelik Deneysel Bir Yaklaşım**

### **Özet**

Bu çalışmanın temel amacı coğrafya eğitiminin vatandaşlık bilincinin kazandırılmasına etkisini deneysel bir yaklaşımla belirlemektir. Araştırmaya liselerde öğrenim gören 16-18 yaş arası toplam 140 öğrenci dahil edilmiştir. Katılımcılara öncelikle ön test uygulanmış, ardından toplam 4 haftada 20 saat online ders verilmiş ve ardından son test uygulanmıştır. Araştırmanın verileri nicel analiz yöntemleri kullanılarak değerlendirilmiştir. Araştırmanın en temel bulgusu coğrafya eğitiminin öğrencilerin vatandaşlık bilinci düzeylerini önemli ölçüde arttırdığıdır. Öğrencilerin vatandaşlık bilinci düzeyleri %21 oranında artmış ve bu artış anlamlı bulunmuştur ( $p<0.05$ ). Tüm cinsiyet ve başarı düzeyi gruplarındaki anlamlı artış coğrafya eğitiminin farklı cinsiyet ve başarı özelliklerine sahip tüm öğrenciler için faydalı olduğunu göstermiştir.

**Anahtar Kelimeler:** Vatandaşlık Bilinci, Deneysel Yaklaşım, Coğrafya Eğitimi, Nicel Araştırma.

### **1. Introduction**

The science of geography, which was defined by the word “geographia” (geography) meaning “describing the earth” in the 3rd century BC and has a history as long as human history, tries to explain a wide variety of natural and human-induced features that exist in the world (Lukoševičius and Dukša, 2012). Therefore, all kinds of features of the world are included in the research field of geography (Brunn, 2000) and geography education is given great importance all over the world for reasons such as getting to know the environment in which students live and gaining various knowledge, skills and behaviors necessary for life (Tuna, 2016).

So, with a decision taken in the USA in 2011, the geography course was accepted as one of the five basic courses that students should take (Edelson, Wertheim, & Schell, 2013). And, Keller (2019) stated in his article that geography education should be given the same level of value as history and civics education in the USA. Geography is important, especially in today’s interdependent global society where the teaching of global literacy in our students is vital if we are to create well-educated global citizens. However, there are a few problems and great geography teaching at the state and local level should be emphasized. As stated in the National Geographic Society Education Foundation’s report Status of Geography Education in the United States, effective teaching and learning of geography, as a school subject, is critical to ensure that a country

has a globally informed citizenry equipped with the necessary geography concepts, knowledge, and skills needed in order to make well-informed decisions (Brysch, 2014).

Furthermore, Kerski (2015) passionately believes in the importance of geography in the curriculum. Geography enables students to understand their world locally to globally, make wise decisions about the planet and its resources, and become critical thinkers. Geography education is accepted as the key to a better world and the future, and an indispensable knowledge that every individual in the society should have in developed countries (Edelson, Wertheim, & Schell, 2013).

One of the important contributions of geography education is its role in gaining citizenship awareness. It is possible to benefit from many different areas of education in raising citizenship awareness, but geography education is one of the most important areas that can contribute to individuals and societies to gain citizenship awareness due to its subjects and approaches to these issues (Gaudelli & Heilman, 2009; Shin & Bednarz, 2018; Bustin, 2019; Al-Maamari, 2022). It is possible to collect the contributions of geography education in gaining citizenship awareness under five headings, which are the continuation of each other. These are, respectively, the recognition of the homeland and the formation of citizenship identity, the analysis of various problems with their causes and consequences, the development of a sense of responsibility related to civic duties, the development of human values, attitudes and behaviors, and being a participatory and active citizen (Tuna, 2016).

The main purpose of this study is to determine the effect of geography education on the acquisition of citizenship awareness with an experimental approach. And, various inferences will be made regarding the significance and strength of this effect.

## **2. Method**

The research was carried out with a single-group experimental design in accordance with the relational screening model. A total of 140 students between the ages of 16-18, who were studying at high schools in Turkiye and voluntarily agreed to participate in the research, were included in the study as a study group. Firstly, the pre-test was applied to the participants, then 20 hours of online lessons were given in a total of 4 weeks, and finally, the post-test was applied.

In the courses, students were given information on basic subjects such as Turkey's location, basic geographical features, natural resources, social and cultural characteristics, and regional differences. In addition, issues such as threats to the country's natural resources, frequently encountered natural disasters, cultural conflicts and the duties of individuals to prevent them were explained with a geographical perspective.

Geography Education and Citizenship Awareness Scale (GECAS) was used as pre-test and post-test. The scale was developed by the researcher and consisted of a total of 21 5-point Likert-type items. With the scale, it was aimed to determine the citizenship awareness levels of the participants and their opinions about the effect of geography education on this. The average score that can be obtained from the scale ranges from 1 to 5, and the increase in the average score indicates that the participant's level of citizenship awareness and the positive opinion about the effect of geography education on this increase. As a result of the Exploratory Factor Analysis, the validity of the scale was found to be very high (Field, 2009) with 92.39%. In addition, as a result of the Cronbach Alpha reliability analysis, the reliability coefficient of the scale was found to be 0.967 and the scale was evaluated as perfectly reliable (George & Mallery, 2003).

The data of the study were evaluated using quantitative analysis methods. For this purpose, descriptive statistics methods, independent groups t-test, paired samples t-test and one-way analysis of variance (ANOVA) were performed using the SPSS 25 program. The reason for using parametric methods is that the pretest and posttest scores included in the analyzes have normal distribution. As a result of the controls, it was determined that the skewness and kurtosis values of these scores were between  $\pm 1.50$ . Tabachnick and Fidell (2013) consider these values to be in the range of  $\pm 1.50$ , sufficient for a normal distribution. In addition, all analyzes were evaluated at 95% confidence interval and  $p < 0.05$  significance level.

### **3. Results**

#### **3.1. Findings Regarding Participants**

A total of 140 students, 50.7% (n=71) females and 49.3% (n=69) males, participated in the study. In addition, although mostly (52.9%; n=74) had a GPA below 3.00, 32.9% (n=46) of the participants were between 3.00-3.49, 14.3% (n=20) had a mean of 3.50 and above (Table 1).

**Table 1. Distribution of Participants by Gender and GPA**

		<b>n</b>	<b>%</b>
Gender	Females	71	50.7
	Males	69	49.3
GPA	<3.00	74	52.9
	3.00-3.49	46	32.9
	3.50+	20	14.3
<b>Total</b>		<b>140</b>	<b>100</b>

### 3.2. Comparison of Pre-Test and Post-Test Mean Scores

In order to determine the effect of the geography education given to the students on the citizenship awareness, the pre-test and post-test averages of the students were compared with the paired samples t-test and the findings are given in Table 2.

**Table 2. Comparison of Pre-Test and Post-Test Mean Scores**

<b>Group</b>	<b>Tests</b>	<b>n</b>	<b>x</b>	<b>s</b>	<b>Mean Difference</b>	<b>t</b>	<b>df</b>	<b>p</b>
All Participants	Pre-Test	140	3.47	0.73	0.73	8.660	139	0.000
	Post-Test	140	4.20	0.37				
Females	Pre-Test	71	3.46	0.66	0.69	6.748	70	0.000
	Post-Test	71	4.15	0.33				
Males	Pre-Test	69	3.47	0.81	0.77	5.690	68	0.000
	Post-Test	69	4.24	0.40				
<3.00	Pre-Test	74	3.46	0.74	0.70	6.073	73	0.000
	Post-Test	74	4.16	0.35				
3.00-3.49	Pre-Test	46	3.54	0.7	0.67	4.876	45	0.000
	Post-Test	46	4.21	0.35				
3.50+	Pre-Test	20	3.31	0.82	0.98	3.745	19	0.000
	Post-Test	20	4.30	0.44				

As seen in Table 2, when all of the participants are taken into consideration, the average of the pre-test scores showing the level of citizenship awareness increased from 3.47 to 4.20. This increase of 0.73 points (21%) was found to be statistically significant ( $t(139)=8.660$ ;  $p<0.05$ ). The

geography education given to the students made a significant contribution to the development of citizenship awareness.

In addition, when the mean changes in gender and GPA groups were examined separately, it was determined that there were statistically significant increases in all of them ( $p < 0.05$ ). The increase in females was calculated as 19.9% and the increase in males as 22.2%. In addition, the increase in those with GPA below 3.00 was 20.2%, the increase in those with GPA between 3.00-3.49 was 18.9%, and the increase in those with GPA above 3.50 was calculated as 29.6%. Based on these findings, it was seen that the geography education given to the students made a significant contribution to the citizenship awareness of all students, regardless of gender and achievement level. However, the contribution for males is slightly higher than for females, and the contribution for high-achieving students is considerably higher than for other students.

### **3.3. Comparison of Item's Pre-Test and Post-Test Means**

On the other hand, in order to examine the effect of geography education in more detail, the difference between the pre-test and post-test scores was examined and it was determined whether these differences showed a significant difference (Table 3).

When Table 3 is examined, there was a significant increase in the mean of 19 items among 21 items in the transition from the pretest to the test ( $p < 0.05$ ). When the score increases are examined, the items with the highest increase are respectively “We must respect the different characteristics of the individuals who make up the society in my country”, “I am aware of threats to my country's natural resources”, “I am aware of what I need to do to protect my country's natural resources”, “I am interested in getting to know the natural and cultural features of my country” and “I am aware of regional differences in my country”. And, there was no significant increase in two items ( $p > 0.05$ ). These items are “Geography education provides the development of universal and humanely accepted values and behaviors” and “Geography education contributes to the awareness of civic responsibilities and duties”. However, when these items were examined, it was noted that the pre-test averages were also quite high. Therefore, the increase in the already existing high averages could not be realized at a significant level.

**Table 3. Comparison of Item's Pre-Test and Post-Test Means**

Items	Tests	n	x	s	Mean Difference	t	df	p																																																																																																																																																																																																																																														
We must respect the different characteristics of the individuals who make up the society in my country.	Pre-Test	140	3.00	1.11	1.21	11.329	139	0.000																																																																																																																																																																																																																																														
	Post-Test	140	4.21	0.78					I am aware of threats to my country's natural resources.	Pre-Test	140	2.82	1.01	1.11	9.900	139	0.000	Post-Test	140	3.93	0.71	I am aware of what I need to do to protect my country's natural resources.	Pre-Test	140	3.29	0.96	1.00	9.626	139	0.000	Post-Test	140	4.29	0.59	I am interested in getting to know the natural and cultural features of my country.	Pre-Test	140	3.21	1.08	1.00	9.198	139	0.000	Post-Test	140	4.21	0.78	I am aware of regional differences in my country.	Pre-Test	140	3.36	1.01	1.00	9.405	139	0.000	Post-Test	140	4.36	0.48	Values and behaviors such as love, respect, tolerance, solidarity and sensitivity are important to be a good citizen.	Pre-Test	140	3.46	0.91	0.89	8.733	139	0.000	Post-Test	140	4.36	0.48	I love my country.	Pre-Test	140	3.14	1.06	0.86	8.114	139	0.000	Post-Test	140	4.00	0.66	I can comment on regional differences in my country.	Pre-Test	140	2.89	1.02	0.82	6.610	139	0.000	Post-Test	140	3.71	0.80	I have responsibilities and duties in solving various problems of my country and contributing to its development.	Pre-Test	140	3.36	1.01	0.79	7.330	139	0.000	Post-Test	140	4.14	0.52	I can offer some suggestions for protection from natural disasters in my country.	Pre-Test	140	3.54	0.91	0.75	6.956	139	0.000	Post-Test	140	4.29	0.59	I know my responsibilities and duties related to citizenship.	Pre-Test	140	3.71	0.96	0.71	7.256	139	0.000	Post-Test	140	4.43	0.73	I know the natural resources and riches that my country has.	Pre-Test	140	3.43	0.91	0.71	7.256	139	0.000	Post-Test	140	4.14	0.35	I am knowledgeable about the cultural characteristics and diversity of my country.	Pre-Test	140	3.75	0.87	0.68	7.985	139	0.000	Post-Test	140	4.43	0.50	I can offer some suggestions for protection from natural disasters in my country.	Pre-Test	140	3.61	0.98	0.68	7.715	139	0.000	Post-Test	140	4.29	0.59	I think there is a relationship between knowing geography subjects and being a good citizen.	Pre-Test	140	3.54	0.91	0.68	6.685	139	0.000	Post-Test	140	4.21	0.41	I see the cultural diversity of my country as a wealth	Pre-Test	140	3.57	0.91	0.64	6.307	139	0.000	Post-Test	140	4.21	0.41	I feel a sense of belonging to my country.	Pre-Test	140	3.68	0.89	0.61	6.254	139	0.000	Post-Test	140	4.29	0.45	There are tasks in which I can actively participate in the solution and development of various problems of my country.	Pre-Test	140	3.82	0.89	0.61	6.838	139	0.000	Post-Test	140	4.43	0.50	I think that geography education has an important place in gaining patriotism.	Pre-Test	140	3.79	0.73	0.36	5.866	139	0.000	Post-Test	140	4.14	0.35		Pre-Test	140	4.00
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	Post-Test	140	4.21	0.41					I see the cultural diversity of my country as a wealth	Pre-Test	140	3.57	0.91	0.64	6.307	139	0.000	Post-Test	140	4.21	0.41	I feel a sense of belonging to my country.	Pre-Test	140	3.68	0.89	0.61	6.254	139	0.000	Post-Test	140	4.29	0.45	There are tasks in which I can actively participate in the solution and development of various problems of my country.	Pre-Test	140	3.82	0.89	0.61	6.838	139	0.000	Post-Test	140	4.43	0.50	I think that geography education has an important place in gaining patriotism.	Pre-Test	140	3.79	0.73	0.36	5.866	139	0.000	Post-Test	140	4.14	0.35		Pre-Test	140	4.00	0.89	0.14	1.841	139	0.068																																																																																																																																																																																	
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	Post-Test	140	4.21	0.41					I feel a sense of belonging to my country.	Pre-Test	140	3.68	0.89	0.61	6.254	139	0.000	Post-Test	140	4.29	0.45	There are tasks in which I can actively participate in the solution and development of various problems of my country.	Pre-Test	140	3.82	0.89	0.61	6.838	139	0.000	Post-Test	140	4.43	0.50	I think that geography education has an important place in gaining patriotism.	Pre-Test	140	3.79	0.73	0.36	5.866	139	0.000	Post-Test	140	4.14	0.35		Pre-Test	140	4.00	0.89	0.14	1.841	139	0.068																																																																																																																																																																																														
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	Post-Test	140	4.29	0.45					There are tasks in which I can actively participate in the solution and development of various problems of my country.	Pre-Test	140	3.82	0.89	0.61	6.838	139	0.000	Post-Test	140	4.43	0.50	I think that geography education has an important place in gaining patriotism.	Pre-Test	140	3.79	0.73	0.36	5.866	139	0.000	Post-Test	140	4.14	0.35		Pre-Test	140	4.00	0.89	0.14	1.841	139	0.068																																																																																																																																																																																																											
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	Pre-Test	140	4.00	0.89	0.14	1.841	139	0.068																																																																																																																																																																																																																																														

Geography education provides the development of universal and humanely accepted values and behaviors.	Post-Test	140	4.14	0.35				
Geography education contributes to the awareness of civic responsibilities and duties.	Pre-Test	140	3.82	0.81	0.04	0.446	139	0.656
	Post-Test	140	3.86	0.64				

### 3.4. Comparison of Citizenship Awareness Levels in Gender and Achievement Level Groups

In order to compare the level of citizenship awareness in gender groups, independent groups t-test was conducted and the findings are given in Table 4.

**Table 4. Comparison of Citizenship Awareness Level by Gender**

Test	Groups	n	x	s	Mean Difference	t	df	p
Pre-Test	Females	71	3.46	0.66	-0.01	-0.107	131.398	0.915
	Males	69	3.47	0.81				
Post-Test	Females	71	4.15	0.33	-0.09	-1.507	138	0.134
	Males	69	4.24	0.40				

As seen in Table 4, the citizenship awareness levels of females and males did not differ significantly before and after the training ( $p>0.05$ ). This finding showed that the education did not make a significant difference between the groups. As stated before, the increase in females was calculated as 19.9% and the increase in males as 22.2%. However, males and females, who were at a similar level before the education, are at a similar level after the education.

On the other hand, ANOVA was conducted in order to compare the level of citizenship awareness in achievement level groups and the obtained findings are given in Table 5.

**Table 5. Comparison of Citizenship Awareness Levels by Achievement Levels**

Test	Group	n	x	s	Variance	SS	df	MS	F	p
Pre-Test	<3.00	74	3.46	0.74	BG*	0.702	2	0.351	0.648	0.525
	3.00-3.49	46	3.54	0.70	WG	74.227	137	0.542		
	3.50+	20	3.31	0.82	Total	74.929	139			
Post-Test	<3.00	74	4.16	0.35	BG	0.315	2	0.157	1.180	0.311
	3.00-3.49	46	4.21	0.35	WG	18.273	137	0.133		
	3.50+	20	4.30	0.44	Total	18.588	139			

\* BG: Between groups, WG: Within groups.



As can be seen in Table 5, the citizenship awareness levels of the participants with different achievement levels did not differ significantly before and after the training ( $p>0.05$ ). This finding showed that the education did not make a significant difference between the groups. As stated before, different rates of increase in success levels have been detected. However, participants who were at a similar level before the training were at a similar level after the training.

#### **4. Discussion and Conclusion**

This research, the main purpose of which is the determination of the effect of geography education on the acquisition of citizenship awareness with an experimental approach, was carried out with a total of 140 students between the ages of 16-18 studying in high schools in Turkiye. As a result of the research, in which students with a fairly homogeneous distribution by gender and with different levels of achievement were included, vital results were obtained. Accordingly, the most basic finding of the research was that geography education statistically significantly increased the citizenship awareness levels of students. Citizenship awareness levels of the students increased by 21% and this increase was found to be significant ( $p<0.05$ ). In addition, the increase in males is slightly higher than in females, and the increase in high achieving students is considerably higher than other students. However, the significant increase in all groups showed that geography education was beneficial for all students with different gender and achievement characteristics. In addition, the fact that the post-test scores of the citizenship awareness level did not show a significant difference according to gender and achievement level confirmed this result.

As a result, it is possible to say that geography education provides important benefits in gaining citizenship awareness to students and society as a whole. An individual who receives geography education has the opportunity to recognize the richness of his country such as certain landforms and natural resources, its population and cultural characteristics, and its economic characteristics such as agriculture, industry, trade, tourism and energy. Thus, s/he learns what is shared (Schmidt, 2011), feels interest and love for his/her homeland, gains a sense of belonging, that is, being a citizen (Stoltman, 1990; Kwan, 2003; Sarno, 2011) and acquires a citizenship identity. Therefore, geography education provides a series of contributions ranging from the recognition of the homeland to the acquisition of citizenship identity.

In addition, many of the subjects included in the subjects of geography education and the causes and consequences of which are examined are subjects that are related to homeland and citizenship, since they are subjects in the student's immediate environment and life (Stoltman, 1990; Henau & Miguet, 2003; Massey, 2014). For this reason, geography education leads students to think about the causes and consequences of many issues directly related to homeland and citizenship (Tuna, 2016). As a result of this, the individual becomes aware of his/her own responsibilities and duties (Bednarz, 2003; Haigh, 2005). In addition, it develops various universal and human values and behaviors such as love, respect, tolerance, solidarity and sensitivity (Sarno, 2011). Therefore, a student with a comprehensive geography education is expected to be a participatory and active citizen (Bednarz, 2003; Kwan, 2003; Haigh, 2005; Wilks, 2010). Therefore, it would be appropriate to give geography education a more effective place in the curriculum. In addition, acquisitions related to citizenship awareness should be placed directly into geography teaching programs.

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