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What is the Level of Undergraduate Students' Geographic Literacy in Turkey?*

Türkiye'deki Lisans Öğrencilerinin Coğrafi Okuryazarlık Düzeyleri Nedir?

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ABSTRACT: Geographic literacy is a skill that plays a significant role in our everyday lives, whether or not we are geographers. Given the importance of this subject, the geographic literacy rate of the students in different levels should be determined and road maps should be put forward. The purpose of this study is to reveal Turkish undergraduate students' level of geographic literacy through a nationwide survey conducted in universities and put forward these results for decision makers and educators. A total of 1589 undergraduate students from 127 different universities and representing 191 different departments throughout Turkey participated in the survey. Students' knowledge of 76 basic geographic terms and 15 multiple-choice questions regarding geographic knowledge were investigated. The answers of the students and the relationships between some demographic characteristics and answers were analyzed by using SPSS software. The study revealed that the students "have some knowledge to explain" the terms in general and have 84.33% success in answering the questions. The terms students "know enough to explain" are among the common environmental problems seen in Turkey. This success should be continued. However, students' lacking knowledge should be further investigated by educational authorities.

Keywords: Literacy, geographic literacy, nationwide survey, geography education, undergraduate level.

ÖZ: Coğrafi okuryazarlık, günlük hayatta önemli bir yere sahip olan ve coğrafyacı olunsun veya olunmasın, toplumun tüm bireylerinin sahip olması gereken önemli becerilerden biridir. Bu nedenle, farklı okul seviyelerinde öğrenim görmekte olan öğrencilerin coğrafi okuryazarlık düzeylerinin tespit edilmesi ve ortaya çıkacak sonuçlara göre gerekli yol haritalarının uygulamaya konulması gerekmektedir. Bu çalışmanın amacı; Türkiye'deki üniversitelerde lisans düzeyinde öğrenim görmekte olan öğrencilerin temel coğrafi okuryazarlık düzeylerinin, ülke genelinde uygulanan bir anket aracılığıyla ortaya çıkarılması ve ortaya çıkan sonuçların karar verici ve eğitimcilere sunulmasıdır. Araştırmaya, Türkiye'nin 127 farklı üniversitesindeki 191 farklı bölüm bünyesinde öğrenim görmekte olan toplam 1589 üniversite öğrencisi katılmıştır. Ankette, öğrencilere 76 adet coğrafi terim ile ilgili bilgi düzeyi soruları ve 15 adet temel düzeyde coğrafi okuryazarlık sorusu yöneltilmiştir. Elde edilen cevaplar, SPSS istatistik programı aracılığıyla tanımlayıcı ve anlam çıkarıcı istatistik yöntemleri kullanılarak analiz edilmiştir. Yapılan araştırma sonucunda lisans öğrencilerinin genel olarak coğrafi okuryazarlık ile ilgili terimleri "açıklayacak kadar bilgim var" düzeyinde bildikleri ve çoktan seçmeli soruları doğru cevaplama başarılarının ise %84,33 olduğu görülmüştür. Öğrenciler, özellikle Türkiye'nin yaygın çevre problemleri hakkında yeterince bilgi sahibidirler. Bunlar Türkiye toplumunun sıklıkla karşı karşıya kaldığı problemlerdir. Bu başarı devam ettirilmelidir ancak tespit edilen bilgi eksiklikleri eğitimciler tarafından daha derin bir şekilde araştırılmalıdır.

Anahtar sözcükler: Okuryazarlık, coğrafi okuryazarlık, ulusal anket, coğrafya eğitimi, lisans düzeyi.

1. INTRODUCTION

The word "literate" comes from the Latin word "littera", meaning "letter", so literacy initially just meant "being able to read". Later, however, the term developed the meaning of being educated, cultured, knowledgeable, learned, scholarly, and well-read (Rusli, 2012). In today's world, unlike its original context of "being able to read", it is a term which encompasses an individual's understanding the nature of scientific knowledge (Choi et al, 2011), ability to apply science concepts, or being consistent with values underlying a science. The word "scientific literacy" is also used today as synonymous with the word "literate".

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The word or concept of "scientific literacy" has been used in the literature for more than four decades and many definitions have been put forward (Holbrook and Rannikmae, 2009; Kellner, 2001; Aşıcı, 2009; Altınbilek and Sanalan, 2005). Today, in most academic contexts, it implies the acquisition and mastery of certain intellectual and essential skills (Thomas-Brown, 2011). Holbrook and Rannikmae (2009) define scientific literacy as the capability to function with understanding and confidence and at appropriate levels, in ways that bring about empowerment in the world at large and in the world of scientific and technological ideas. According to the Organization for Economic Co-operation and Development (OECD) (2010), it is an individual's scientific knowledge that is used to identify questions, acquire new knowledge, explain scientific phenomena, and draw evidence-based conclusions about science related issues.

At its simplest, the concept of "scientific literacy" refers to the fundamental knowledge that the general public needs to understand about science so that individuals can use that information to make informed decisions regarding personal, civic, and economic matters (Holbrook and Rannikmae, 2009; Laugksch, 2000; Rannikmae et al., 2010). It is also defined as developing the ability to creatively utilize sound scientific knowledge in everyday life or in a career, to solve problems, make decisions and hence improve the quality of life (Holbrook and Rannikmae, 1997). This can also translate to the knowledge and understanding of scientific concepts and processes required for personal decision-making, participation in civic and cultural affairs, and economic productivity (NRC, 1996).

Millar (1997) indicates that to achieve scientific literacy, it is first essential that students come to appreciate the sheer difficulty of obtaining valid and reliable data about the natural world. According to the European Commission (2007), being scientifically illiterate is of such high cost for both the individual and the society in general and Europe needs more scientifically literate citizens. Moreover, it seems evident today that schools must prepare students for participation in society as citizens in the broadest sense because citizenship in modern society demands other competences than previously (Dam and Volman, 2004) and our ever-changing and challenging world requires students—who are our future citizens—to enhance the building of their knowledge capacity (Miri et al., 2007).

Geographic literacy is one of the components of scientific literacy that a citizen should have in today's fast developing and globalizing world since geography analyses and illuminates interconnections between people, places, and environments. Students need to be able to visualize the geospatial distribution of cultures, economies, and natural resources to fully understand the complexities of our global environment (Guertin et al., 2012). Geographic literacy, in short, refers to knowledge about geography or ability to understand, process, and utilize spatial data (Turner and Leydon, 2012), ability of students to apply geographic skills and understanding in their personal and civic lives (ESRI, 2009) or their ability to use geographic understanding and geographic reasoning to make decisions (NGE, 2013). It is defined as the possession of concepts, abilities, and habits of mind (emotional dispositions) that allow an individual to understand and use geographic information properly and to participate more fully in the public debate about geography-related issues (Miller, 2004). In other words, it is the possession of concepts, abilities and habits of mind that allow an individual to understand and use all types of geographic information properly to inform oneself and persuade others about geography related issues (Miller et al, 2005).

Geographic literacy relies on geographic information to communicate place, space, and discoveries (Sui and Goodchild, 2001). A geographically literate person therefore requires an understanding of space identified in terms of location, distance, direction, pattern, shape, and arrangement and place identified in terms of the relationships between physical characteristics (climate, topography, soil, fauna, and flora) and human characteristics (economic activity, settlement, and land use) (Bliss, 2006).

Geographic literacy is a skill that plays a significant role in our everyday lives, whether or not we are geographers. It allows us to connect with our surroundings, such as helping us to figure out the quickest bus route between two locations and the most desirable neighbourhoods to live in based on our own personal criteria. It also helps us better understand how people, places, and events connect in the world and involves learning about the nature of environments, climates, natural resources, and human, cultural, political, and spatial contexts of places. Therefore, geographic literacy involves the use of knowledge to solve problems and make decisions in our daily lives. An inability to develop geographic literacy skills isolates us from the world around us and impedes our capacity to make well informed decisions (Turner and Leydon, 2012).

Geography holds the keys to understanding our ever-shrinking world (Schoenfeldt, 2002) and geographical education is indispensable to the development of responsible and active citizens in the present and future world (IGU, 1992). The building blocks of geographic literacy include the fundamental knowledge of geographic information and skills (Guertin et al., 2012). And, in essence, it underscores the geographical skills that students in today's global society need if they are to function as effective global citizens. These skills are particularly valuable to university students, allowing them to connect learned concepts and theories with current events across the globe (Turner and Leydon, 2012). From this point of view, this study aimed at revealing Turkish undergraduate students' level of geographic literacy through a nationwide survey conducted in universities.

2. METHOD

Measuring geographic literacy has been the focus of some efforts before. The Inter Geo II paper test (in the early 1990s), The National Geographic Society's survey (2002) and the International Geography Olympiad (2008) was among them (Bascom, 2011). In these efforts, different methods such as face-to-face test, multiple-choice questions and mapping queries were used to assess geographic literacy related to basic knowledge and skills of geography and world issues.

The main data collection tool of this study was a web-based survey. Based on the aims of the study, the survey was prepared in three sections as follows: (1) Demographic questions - this section included questions on gender, university, department, and grade-level. (2) Students' knowledge of basic geographic terms - this section focused on the students' level of knowledge in 76 basic geographic terms. The list of terms was prepared quite extensively after a comprehensive literature review of a variety of basic subjects from all areas of the discipline of geography. Students' responses were taken on the basis of a four-point Likert scale (0, not heard of; 1, heard of but could not explain; 2, have some knowledge to explain; 3, know enough to explain). (3) Students' ability to answer the basic geography questions - this section focused on the students' level of knowledge in 15 basic multiple-choice geography questions and principles regarding the world and Turkey.

The participants were reached by e-mail and some social media tools. A total of 1589 undergraduate students from 127 different universities and representing 191 different departments throughout Turkey participated in the survey. The answers the students gave and the relationships between some demographic characteristics and answers were analyzed by using SPSS software. The reliability coefficient was 97.7% based on the factor reliability analysis of dependent variables (Cronbach's alpha = 0.977). In the study, a non-parametric test, the Mann-Whitney U, was used for inferential statistics, because the data did not have a normally distributed interval variable according to a one-sample Kolmogorov-Smirnov test ($p < 0.05$).

3. FINDINGS

According to demographic analysis of the respondents, out of 1589 students polled, 38.3% were male and 61.7% were female. Analysis of the students' grades revealed that 18.1% of the students were in 5th grade (n=288), 19.33% were in 4th grade (n=307), 21.64% were in 3rd grade (n=344), 22.27% were in 2nd grade (n=354) and 18.66% were in 1st grade (n=297). Besides, among respondents, nearly 10.2% were from Istanbul University (n=162), 5.9% were from Marmara University (n=94) and 3.8% were from Erciyes University (n=60). Furthermore, 6.8% of the students were from management dept. (n=108), 6.3% were from math dept. (n=100) and 5.1% were from physiology dept (n=81). Geography students were not allowed to participate in the survey in order to reveal general results well. The detailed information about the respondents was given in Table 1.

Table 1: Distribution of Respondents According to Gender, Grades, Universities and Departments

Variable		N	%
Gender	Male	980	61.70
	Female	609	38.30
Grade	5th Grade	288	18.10
	4th Grade	307	19.33
	3rd Grade	344	21.64
	2nd Grade	354	22.27
	1st Grade	297	18.66
University	Istanbul	162	10.20
	Marmara	94	5.90
	Erciyes	60	3.80
	Ankara	57	3.59
	Ege	56	3.52
	122 other university	1160	73.00
Department	Management	108	6.80
	Mathematics	100	6.30
	Physiology	81	5.10
	History	78	4.91
	Law	75	4.72
	186 other department	1147	72.18

The descriptive analysis of students' knowledge level scores on 76 different terms about geographic literacy revealed that the average knowledge level for all terms was 1.93 out of 3 (standard deviation = 0.23), which corresponded to "have some knowledge to explain". Of the terms, 5 were "known enough to explain" by the students. The students "have some knowledge to explain" about 56 of the terms and "heard of but could not explain" 15 of the terms. Moreover, there was no term about which students stated "not heard of". The full results are displayed in Table 2.

Table 2: Students' Average Knowledge Levels about Basic Geographic Terms

#	Term	Ave.	#	Term	Ave.	#	Term	Ave.
1	Natural hazard	2.53	**27**	Tropics	2.17	**53**	Rock types	1.76
2	Drought	2.53	**28**	Atmosphere	2.17	**54**	Geologic times	1.69
3	Flood	2.53	**29**	Physical geography	2.15	**55**	Sedimentation	1.68
4	Desertification	2.51	**30**	Dew and rime	2.15	**56**	Karstic shapes	1.64
5	Erosion	2.50	**31**	Plain and plateau	2.13	**57**	Continental drift	1.58
6	Labor migration	2.48	**32**	Earth's orbit	2.11	**58**	Horst and graben	1.57
7	Brain drain	2.47	**33**	Local and national time	2.10	**59**	Crater and caldera	1.56
8	Equator	2.47	**34**	Map scale	2.09	**60**	Sea cliff	1.56
9	Landslide	2.46	**35**	Earth's inclination	2.05	**61**	Map projection	1.53
10	Population density	2.44	**36**	Human geography	2.03	**62**	Alluvial fan	1.49
11	Natural pop. increase	2.44	**37**	Underground water	2.01	**63**	Sink hole	1.46
12	Urbanization	2.44	**38**	International Times	2.01	**64**	Legend	1.45
13	Urban settlem. and pop.	2.42	**39**	Delta	2.00	**65**	Lagoon	1.36
14	Rural settlement and pop.	2.42	**40**	Volcanic activities	1.95	**66**	Tertiary economic act.	1.30
15	Latitude and longitude	2.41	**41**	Contour lines	1.94	**67**	Secondary econ. act.	1.29
16	Vegetation cover	2.40	**42**	River regime	1.94	**68**	Anticline and syncline	1.29
17	Urban flooding	2.40	**43**	Biosphere	1.92	**69**	Primary econ. act.	1.28
18	Climate and weather	2.40	**44**	Hydropower	1.91	**70**	Tombolo	1.18
19	Immigration and migration	2.39	**45**	River basin	1.91	**71**	Plate tectonics	1.17
20	Hurricane	2.38	**46**	Earthquake zones	1.90	**72**	Geog. inf. system (GIS)	1.02
21	Refugee migration	2.37	**47**	Water cycle	1.86	**73**	Isostatic Equilibrium	0.91
22	Steppe	2.36	**48**	Hydrosphere	1.84	**74**	Pangaea	0.82
23	Maquis	2.36	**49**	Geothermal energy	1.84	**75**	Remote Sensing	0.81
24	Population pyramid	2.36	**50**	Meander	1.83	**76**	Tethys Sea	0.76
25	Fault scarp	2.21	**51**	Endemic plant	1.77	**Average of All**		**1.93**
26	Polar circles	2.20	**52**	Lithosphere	1.76			

Note: 0, not heard of; 1, heard of but could not explain; 2, have some knowledge to explain; 3, know enough to explain.

The terms in which students had higher scores, corresponding to "know enough to explain" were "natural hazard, drought, flood, and desertification". The students "have some knowledge to explain" about 56 of the terms. The top seven terms in this group were "labour migration, brain drain, equator, landslide, population density, natural population increase, and urbanization". Students' knowledge levels were low, corresponding to "heard of but could not explain", for the terms of "Tethys Sea, remote sensing, Pangaea, Isostatic equilibrium, geographic information system, plate tectonics, tombolo, primary economic activity, anticline, and syncline". In particular, their knowledge level was lowest, corresponding to "heard of but could not explain", for Tethys Sea.

The analysis of the scores based on gender also revealed that the average knowledge levels were found as 1.88 for males and 1.96 for females for the value "have some knowledge to explain". Accordingly, females are found as more literate than males in terms of geography knowledge. A Mann-Whitney U analysis indicated that males and females differed significantly in their level of knowledge in 48 of total 76 terms ($p < 0.05$). Some of the terms in which males and females significantly differed were "immigration and migration, Lithosphere, remote sensing, human geography, and rural settlement and population". Moreover, in four of these five terms, females had higher scores than males (Table 3).

Table 3: The Terms Males and Females Significantly Differed (Mann-Whitney U Test Results)

Terms	Variable	N	Mean Rank	Sum of Ranks	U	Z	P
Average of all terms	Male	592	733.85	434440.00	258912.00	-2.72	0.01
	Female	953	797.32	759845.00			
Immigration and migration	Male	575	707.90	407042.00	241442.00	-3.99	0.00
	Female	943	790.96	745879.00			
Lithosphere	Male	590	712.24	420220.00	245875.00	-4.04	0.00
	Female	942	800.49	754058.00			
Remote sensing	Male	577	811.26	468096.50	239882.50	-4.04	0.00
	Female	938	725.24	680273.50			
Human geography	Male	590	715.88	422372.00	248027.00	-4.07	0.00
	Female	949	803.64	762658.00			
Rural settl. and population	Male	579	705.28	408355.00	240445.00	-4.34	0.00
	Female	942	795.25	749126.00			

When the answers of the multiple choice questions in the second section of the survey were analysed, we observed that the average of score was 12.65 out of 15 questions with the success rate of 84.33%. The average of correct answers for males was 12.59 (83.94%) while the average of females was 12.69 (84.60%). These results revealed that females were more successful than males in answering the questions correctly.

In addition, some important facts were observed by analyzing the answers given to the questions in this section. According to averages, 80% of the students know about the shape of the Earth correctly and 82% of the students answered the coordinates of Turkey on the Earth correctly. In addition, 95% of the students gave the correct answer to the question about the neighbors of Turkey. The rates of correct answers were 81% for the question about general topographical features of Turkey; 77% for climate, 95% for vegetation cover, 86% for industrial activities, 83% tectonics, and 95% for migration. Moreover, the success rates were revealed as 88% for the question about fluvial erosion, 95% for the relationship between vegetation and climate, 79% for tectonics, 77% for population, 78% for settlement, and 71% for transportation geography (Table 4).

Moreover, the analysis of the false answers revealed some important facts about the knowledge of students. 16% of the students believed that the shape of the Earth is a perfect sphere. Also, 10% of the students answered that Turkey is located west of the Prime Meridian. In addition, 13% of the students stated that rates of high population increases are observed in developed countries and 20% lacked knowledge about the properties of settlement patterns.

Table 4: Multiple Choice Questions and Given Answers

Questions and Choices	% of Answers	Questions and Choices	% of Answers
1- Which of the following best describes the shape of the Earth?		**9-** Which country is <u>not</u> among the neighbours of Turkey?	
*Geoids	80.12	Iran	1.81
Sphere	16.91	*Romania	95.80
Cylindrical	2.13	Syria	1.10
2- Turkey is located in _____ on the Earth.		**10-** _____ have low rates of population increase.	
southern hem. and on the east of Prime M.	6.91	Less developed countries	8.72
northern hem. and on the west of Prime M.	10.01	*Developed countries	77.08
* northern hem. and on the east of Prime M.	81.67	Undeveloped countries	13.04
3- In which areas is fluvial erosion faster?		**11-** Which one is an industrial city?	
flat terrains	4.20	Antalya	3.49
terrains with low slope gradient	6.58	*Bursa	85.60
*terrains with high slope gradient	88.06	Kırklareli	9.36
4- Which answer is the general vegetation cover of regions in the Mediterranean climate?		**12-** Which of the following connects the Mediterranean Sea and the Indian Ocean?	
Steppe	3.23	Gibraltar	19.37
Grassland	1.94	Panama Channel	6.78
*maquis	94.19	*Suez Channel	71.27
5- Places with similar climatic conditions have similar _____.		**13-** In which regions is dispersed settlement seen?	
*vegetation cover	94.25	settlements founded along a road	6.00
rock types	3.36	sett. founded in flat areas with lack of water	14.07
Population	1.42	*sett. founded in rough areas with abundant water	78.11
6- In Turkey, elevation increases from _____ in general.		**14-** Which region in Turkey takes in the largest number of immigrants?	
*from west to east	80.76	Southeast Anatolia	2.39
from east to west	10.46	Black Sea	1.74
from north to south	7.30	*Marmara	94.96
7- Which city has continental climate characteristics?		**15-** Which city is more secure in terms of earthquake zones?	
Adana	16.40	Erzincan	9.94
Rize	5.62	Istanbul	5.75
*Sivas	76.89	*Konya	83.47
8- Which of the following proves the existence of a fault line in a region?			
having mild climatic conditions	6.13		
*having hot-springs	79.02		
having lime-stone terrain	12.78		

Note: The sign (*) indicates correct answers.

4. DISCUSSION AND RESULTS

Some important results were reached as a result of this study, which aims to determine undergraduate students' current level of geographic literacy. First of all, the result that respondents' general knowledge level of the 76 terms was "have some knowledge to explain" and their success rate of 84% in answering the multiple choice questions were quite positive. Accordingly, it might be stated that the undergraduate students in Turkey have quite good geographic literacy in terms of the basics of the discipline of geography. Also, it might be stated again that these results are gained from a variety of different departments such as law, medicine, history, physiology, engineering, management, and international relations apart from geography (geography students are not allowed to participate in the survey), which are quite gratifying for the latter discipline and general education not only in Turkey but throughout the world.

The results indicated that there were no questions about the terms to which students gave the answer "not heard of". They also "have some knowledge to explain" about three fourths of the terms. They, with the answers of "know enough to explain", can explain 80% of the terms asked. They stated that they have "heard of but could not explain" remaining 20%. Another remarkable result of the study is that the terms students "know enough to explain" are among the common environmental problems seen in Turkey. Natural hazards like drought, flood, desertification, and erosion are common environmental problems that often affect people lives in different parts of Turkey. Also, other problems like "landslide, population increase, population density and urbanization" took place among the first 12 the terms in the list. Moreover, the issues related to population, settlement, and migration were among the terms students have some knowledge to explain. Labor and brain migration, immigration and migration, refugee migration, rural and urban settlement, and population were the terms in this category.

In addition, students "have some knowledge to explain" some of the physical geography subjects of volcanism, tectonics, earthquakes, rock types, geologic times and processes, rivers, deltas, and sink holes. However, their level of knowledge decreased to "heard of but could not explain" on the terms of "plate tectonics, isostatic equilibrium, Pangaea, and Tethys Sea". Students had a lack of knowledge especially on the subjects of isostatic equilibrium, Pangaea, and Tethys Sea. Moreover, GIS and remote sensing were two terms that students noted a significant lack of knowledge.

Analysis of the third section (multiple choice questions) revealed that undergraduate students in Turkey know quite well subjects related to the shape of the Earth, the location of Turkey on the Earth, neighboring countries, and general topographical, geological, climatic, industrial, and demographic properties of Turkey. In addition, their success rates were about 70% in the questions about tectonics, denudation, climate, vegetation cover, settlement, and transportation. These results also support the results of the previous section by showing students' high geographic literacy rates.

Surely these quite high geographic literacy rates will be useful for students in order to understand the human and natural systems happening in the world. This success should be continued. However, students' lacking knowledge should be further investigated by educational authorities. Also, similar studies should be conducted periodically to measure current literacy rates. Moreover, analogous studies should be conducted in different developed countries in order to reveal the geographic literacy rates and find solutions to problems worldwide.

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Genişletilmiş Özet

Okuryazarlık; günümüzde, ilk anlamı olan okuyup yazabilmeden farklı olarak bireyin bir bilim alanında kazandığı bilgi düzeyi ile buna bağlı olarak geliştirdiği anlamlandırma, sorumluluk ve karar verebilme gibi becerileri kapsayan bir kavramdır. OECD'ye göre okuryazarlık; bireyin etrafındaki çeşitli problemleri tanıma, yeni bilgileri edinme, bilimsel gerçeklikleri açıklayabilme ve kanıta dayalı sonuçlar çıkarabilme becerisini ortaya koyan bilimsel bilgidir. Bu kavram, günümüz dünyasında -özellikle gelişmiş

ülkelerde- eğitim ve öğretim yapılan çeşitli bilim alanlarında kazanılan bilgi ve beceri düzeyi yerine kullanılmaktadır ve öğrencilerin gerçek ve doğru bilgiye ulaşabilmeleri için elde etmeleri gereken en önemli becerilerden biri olarak kabul edilmektedir. Coğrafi okuryazarlık ise, coğrafya kısacası "dünya ve içindeki her şey" olduğu için günümüz dünyasında yaşayan bireylerin ve toplumların sahip olması gereken en önemli okuryazarlıklardan birisidir. Bu nedenle, coğrafyacı olunsun veya olunmasın, coğrafi okuryazarlık toplumun tüm bireylerinin sahip olması gereken en önemli becerilerden biridir ve günlük hayatta önemli bir yere sahiptir. Coğrafi okuryazarlık becerisine sahip olunmaması veya bu becerinin geliştirilememesi bireyi dünyadan soyutlayacak ve bireyin yaşamı ile ilgili doğru kararlar verebilme kapasitesini olumsuz yönde etkileyecektir. Bu nedenle, farklı okul seviyelerinde öğrenim görmekte olan öğrencilerin coğrafi okuryazarlık düzeylerinin tespit edilmesi ve ortaya çıkacak sonuçlara göre gerekli yol haritalarının uygulamaya konulması gerekmektedir.

Bu çalışmanın amacı; Türkiye'deki üniversitelerde lisans düzeyinde öğrenim görmekte olan öğrencilerin temel coğrafi okuryazarlık düzeylerinin, ülke genelinde uygulanan bir anket aracılığıyla ortaya çıkarılması ve ortaya çıkan sonuçların karar verici ve eğitimcilere sunulmasıdır. Bu yolla, olası yeterlik veya eksikliklerin ortaya çıkarılması ve coğrafi okuryazarlıkların öğrencilere kazandırılması için yol gösterici olunması hedeflenmektedir. Çalışma, temel olarak bir anket ve istatistikî analiz çalışması olarak desenlendirilmiştir. Araştırmaya, Türkiye'nin 127 farklı üniversitesindeki 191 farklı bölüm bünyesinde öğrenim görmekte olan toplam 1589 üniversite öğrencisi katılmıştır. Ankette, öğrencilere üç farklı bölüm içerisinde sorular yöneltilmiştir. Buna göre; ilk bölümde kişisel sorular, ikinci bölümde 76 adet coğrafi terim ile ilgili bilgi düzeyi soruları, üçüncü bölümde ise 15 adet temel düzeyde coğrafi okuryazarlık sorusu yer almıştır. Katılımcılardan; ikinci bölümde, kendilerine verilen terim veya kavramları ne kadar bildiklerini 4'lü likert tipi ölçek ile ("0-Hiç Duymadım", "1-Duydum Ama Açıklayamam", 2-Açıklayacak Kadar Bilgim Var" ve "3-Tam Olarak Biliyorum") cevaplandırmaları, üçüncü bölümde ise çoktan seçmeli olarak verilen 3 seçenek arasından doğru olanı işaretlemeleri istenmiştir. Terimlerin seçilmesi ve soruların oluşturulmasında temel coğrafi bilgiler göz önünde bulundurulmuş ve uzman yardımı alınmıştır. Ankete verilen cevaplar, SPSS istatistik programı aracılığıyla tanımlayıcı ve anlam çıkarıcı istatistik yöntemleri kullanılarak analiz edilmiştir.

Yapılan araştırma sonucunda lisans öğrencilerinin genel olarak coğrafi okuryazarlık ile ilgili terimleri "açıklayacak kadar bilgim var" düzeyinde bildikleri ortaya çıkmıştır. Öğrenciler, kendilerine yöneltilen terimlerden 5'ini "tam olarak bildiklerini", 56'sı hakkında "açıklayacak kadar bilgilerinin olduğunu" ve 15'ini "duyduklarını ama açıklayamayacaklarını" ifade etmektedirler. Öğrencilerin hiç duymadıkları bir terim yoktur ve terimlerin yaklaşık dörtte üçünü açıklayacak kadar bildikleri ortaya çıkmıştır. Ayrıca, öğrencilerin bazı terimleri tamamen açıklayabildikleri görülmüştür. Bu terimler doğal felaket, kuraklık, sel ve çölleşmedir. Buna göre, öğrenciler sorulan 76 terimden %80'i hakkında bilgi sahibidirler. Terimlerin sadece %20'si hakkında yeterli bilgi sahibi değillerdir. Öğrencilerin duydukları ama açıklayamadıkları terimlerden bazıları Tetis Denizi, uzaktan algılama, Pengea, izostatik denge, coğrafi bilgi sistemleri (CBS), levha tektoniği, tombolo, birincil ekonomik aktivite, antiklinal ve senklinaldir. Ayrıca, bayanların coğrafi bilgi düzeylerinin baylardan daha fazla olduğu görülmüştür. Çalışma sonucunda ayrıca, öğrencilerin Dünya'nın şekli, Türkiye'nin konumu ve komşuları ile genel topografik, jeolojik, iklim, endüstri ve nüfus özelliklerini iyi derecede bildikleri ortaya çıkmıştır. Çoktan seçmeli soruları doğru cevaplama başarılarının ise %84,33 olduğu görülmüştür. Bu bölümdeki ortalamalara göre, öğrencilerin %80'i Dünyanın şeklini, %82'si Türkiye'nin Dünya üzerindeki konumunu ve %95'i Türkiye'ye komşu ülkeleri doğru olarak bilmektedir. Doğru cevapların oranları; Türkiye'nin genel yükselti (topografya) özellikleri ile ilgili soruda %81, iklimde %77, bitki örtüsünde %95, sanayide %86, deprem (tektonik) özelliklerinde %83 ve nüfus (göç) özelliklerinde %95 olmuştur. Ancak, verilen yanlış cevaplar incelenmesi ile önemli sonuçlar ortaya çıkmıştır. Buna göre; öğrencilerin %16'sı Dünya'nın şeklini küre olarak cevaplandırmakta ve %10'u Türkiye'nin konumunun başlangıç meridyeninin batısında olduğunu belirtmektedir. Ayrıca, öğrencilerin %13'ü nüfus artış hızının fazla olmasını gelişmemiş ülkelere ait bir özellik olarak bilirken, %20'si dağınık yerleşmelerin özellikleri konusunda bilgi eksikliğine sahip bulunmaktadır

Araştırma sonucunda Türkiye'deki lisans düzeyindeki üniversite öğrencilerinin temel coğrafi okuryazarlıklarının gayet iyi bir düzeyde olduğu görülmüştür. Öğrenciler, özellikle Türkiye'nin yaygın çevre problemleri hakkında yeterince bilgi sahibidirler. Bunlar Türkiye toplumunun sıklıkla karşı karşıya kaldığı problemlerdir. Ortaya çıkan yüksek düzeydeki bu coğrafi okuryazarlık, şüphesiz, öğrencilerin yaşadıkları dünyayı algılamalarında ve Dünya'da var olan beşeri ve fiziki sistemleri anlamlandırmalarında

fayda sağlayacaktır. Ancak, öğrencilerin nüfus ve yerleşme, işçi ve beyin göçü gibi bazı konulardaki bilgileri yeterli düzeyde değildir. Levha tektoniği, izostatik denge, CBS gibi konulardaki bilgileri ise çok daha azdır. Bu nedenle, çalışma sonucunda tespit edilen çeşitli eksikliklerin telafi edilmesi için eğitimciler tarafından gerekli çalışmalar yapılmalıdır. Böylece, yerelden küresele yaşanılan çevrenin, dünyanın ve çağın gerektirdiği bilgi ve becerilerin sağlanması adına önemli bir bilgi ve beceriler bütünü olan coğrafi okuryazarlığın daha üst düzeylere getirilmesine katkı sağlanmış olacaktır.

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