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Investigation of Sustainable Development Awareness Levels of Social Studies Teacher Candidates

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Abstract

The fact that the social studies course has an intense content for sustainable development makes it important to reveal the awareness of social studies teacher candidates on this issue. From this point of view, in this study, it was tried to determine the sustainable development awareness levels of social studies teacher candidates in terms of various variables. The study group of the research conducted in the survey model consists of 304 social studies teacher candidates studying at different universities in the fall semester of the 2020-2021 academic year. The Sustainable Development Awareness Scale developed by Atmaca, Kiray and Pehlivan (2019) was used as a data collection tool in the research. The Cronbach Alpha value of this scale, which consists of social sustainability, environmental sustainability and economic sustainability sub-dimensions, was calculated as .91. In the analysis of the data, tests such as Mann-Whitney U and Kruskal Wallis H were used as well as descriptive statistics. As a result of the research, it was determined that the scores of female participants in both social and environmental sustainability dimensions and the overall scale were higher than men. For all other analyzed variables, no significant difference was determined for both the dimensions of the scale and the overall scale. Based on the findings obtained from the research, various suggestions were presented based on the examination of the gender-related difference in other studies.

Introduction

With the realization of the Industrial Revolution, major developments have occurred on an international scale. Population increases, changes in economic policies and technology, and globalization phenomena have led to an increase in production. This has led to a more rapid depletion of resources. Over time, the balance between production and consumption has declined. As a result of this deterioration, humanity has developed consumption mechanisms that threaten the balance of nature to meet its needs. However, economic, technological and social changes have also had a negative impact on the environment.

It is important to protect the sustainability of the environment to reduce the negative impact on the environment from the past to the present and to ensure the continuity of the environment. Sustainability, which plays a major role in maintaining the balance of the environment, can be defined as activities carried out to protect natural

resources and leave a good environment for future generations while meeting needs (Collin, 2004). The understanding of sustainable development discussed at the United Nations Earth Summit in 1992 was expressed as the most urgent policy to be realized at the international level. In 1987, this understanding was defined by the Brundtland Commission as development by meeting the needs of today without compromising the needs of the future (Chichilnisky, 1997). In this direction, sustainable development aims at inclusive and equitable economic growth.

It can also be said that this is aimed at creating an egalitarian environment, raising the standard of living and integrating natural resources and ecosystems (United Nations, 2020). The understanding of sustainability, presented to the public with the World Conservation Strategy (WCS) and first published worldwide in 1998, entailed development plans that require countries to take joint responsibility and make plans for the future (Gössling et al., 2009). In order to maintain the balance of the world and ensure the continued existence of the environment, development studies have been carried out since the Second World War. After the war, the emphasis was on environmental problems that were not addressed. As a result, attention was drawn to solving the problems that left the national scale and reached the global one. On the basis of these goals, the model of "sustainable development" was developed, a long-term plan focused on the environment and human capital of all living beings throughout their lives, striving for optimal use of resources (Tıraş, 2012).

Besides all these, the Green Revolution movement, which took place in the 1940s, was also influential in the emergence of the sustainable development model. According to this movement, the idea of developing sustainable development plans came to the forefront to address the food shortage that was developing alongside the rapid increase in the world's population. (Teksöz, 2014). Today, sustainable development has been expressed through 17 global goals of the United Nations in many fields such as political, social, economic and environmental. These include solving humanity's problems, fighting the poor, protecting the environment, and taking action against the climate crisis. These goals are to be achieved globally by 2030 (United Nations Turkey, 2016). The sustainable development goals set by the United Nations are shown in Table 1:

Table 1. United Nations Sustainable Development Goals

1. End poverty	10. Reducing inequalities
2. End hunger	11. Sustainable cities and communities
3. Health and quality of life	12. Responsible production and consumption
4. Quality education	13. Climate action
5. Social gender equality	14. Life in the water
6. Clean water and sanitation	15. Terrestrial life
7. Accessible and clean energy	16. Peace, justice and strong institutions
8. Decent work and economic growth	17. Partnerships for goals
9. Industry, innovation and infrastructure	

Source: (United Nations Turkey, 2016).

The problem of poverty in countries with rapid population growth has pushed the protection of the natural

environment into the background, as it has raised problems such as housing and food (Alaeddinoğlu & Okudum, 2018). Five-year development plans have been implemented in Turkey since 1963. The clear emphasis on sustainable Development in the Seventh Five-Year Development Plan, which was implemented between 1996 and 2000, represents a turning point. In this plan, goals were set in many areas, such as population policy, use of water resources, agricultural policy and production norms, to ensure sustainable development (State Planning Organization, 1995). If we consider the development policy in Turkey in general, we can say that over the years there has been a development in terms of sustainable development. The idea of sustainable development was brought to the fore in the Tenth Development Plan for the years 2014-2018. In order to achieve the goals of sustainable development, the concept of "green growth" is gaining momentum, and models are being sought at the global level.

Within these concepts, cleaner production and eco-efficiency target Turkey's production. In addition, the ecological potential in ecologically sensitive sectors such as agriculture and tourism is taken into account (T.R. Ministry of Development, 2013). Similar goals were pursued in the Eleventh Development Plan for 2019-2023. This plan again drew attention to the sustainable development goals. In order to achieve these goals, it was decided to establish the National Sustainable Development Coordination Board, which will act as an inspection and control mechanism (Turkish Presidency Strategy and Budget Presidency, 2019). The sustainable development model consists of three dimensions (McIntyre, Hetherington, & Inskip, 1993; Yapıcı, 2003).

- Ecological sustainability dimension: It aims to ensure the continuity of ecological processes and biological resources.
- Social and cultural sustainability dimension: The aim is to strengthen people's standard of living in accordance with social rules, intertwined with cultural values.
- Cultural sustainability dimension: the aim is to transmit natural and cultural resources in a healthy way to future generations.

The sustainable development model has proven its effectiveness in many fields. This model has been widely used, especially in the discipline of economics. However, since the 1980s, it has been intensively studied in international debates and focused on development, applied sciences, and international politics (Carvalho, 2001). The understanding of sustainable development, with its multidisciplinary structure offering a versatile application, has also had some impact in the field of education.

Education is an important tool for protecting natural resources, recognizing environmental problems, and creating sustainable lifestyles. However, education is important for the adoption of sustainable resource use and for the promotion of responsible and environmentally responsible individuals in the face of environmental problems. (Hungerford & Peyton, 1976). International organizations state that education has an important place in the successful achievement of sustainable development. One of the roles of education is to change society for the purpose of solving environmental problems. (Bulut and Çakmak, 2018; Waltner, Rieß, and Mischo, 2019). Another task is to make the concept of sustainability known to people and to provide the necessary attitudes, knowledge, and behaviors. (Gökmen, Solak & Ekici, 2019). The relationship between gender and sustainable development. UNESCO (2018) has worked to integrate sustainable development and teacher education in line

with these goals. The concept of sustainability is included in the content of various courses. With these courses, the aim is to create a lifelong sustainability behavior for the students. ((Haubrich, Reinfried & Schleicher, 2008). In Turkey, the teacher training programs were updated in 2018 with the understanding of education for sustainable development. With this development, this topic was included in the teaching content (Korkmaz, 2020).

The phenomenon of integrating the concept of sustainable development into the Turkish education system finds its way into the scientific curriculum. Among the specific objectives of the course is the statement "Recognizing the mutual interaction between the individual, the environment and society and developing awareness of sustainable development in relation to society, the economy and natural Resources" (Ministry of National Education, 2018a). The concept of sustainable development is also included in the subject areas of social studies lessons. The multidisciplinary structure of social studies teaching can be associated with the economic, social, environmental and political issues of sustainable development (Kaya & Tomal, 2011). It can be said that all the special goals, values and skills that are to be taught directly in the social studies curriculum are connected with the educational principles of sustainable development (Ministry of National Education, 2018b; Sütgibi, 2018).

Teachers have an important role in the correct implementation of the curriculum. Therefore, it is said that teachers and teacher candidates have a key role in raising awareness of sustainable development. It is important that the goals that ensure sustainable development are adopted by teachers. Because this is a basic prerequisite for the students to be able to bring about these changes. The fact that social studies lessons have an intensive content for sustainable development makes it important to determine the awareness of social studies teacher candidates for this topic. For this purpose, the awareness of the teacher candidates for sustainable development in relation to various variables was examined.

As part of the investigation, the following hypotheses were put forward:

- 1) Do the values of social studies teacher candidates on the Sustainable Development scale differ depending on gender, age, educational status of parents, monthly income of the family, region in which the university was graduated, and the source variable from which information on sustainable development is obtained?
- 2) Do the scores of social studies teacher candidates from the sub-dimensions of the sustainable development scale differ according to gender, age, educational status of parents, monthly income of the family, the region where the university is graduated from, and the source variable from which information about sustainable development is obtained?

Method

Research Model

The research was carried out with the scanning model. In the scanning model, it is aimed to determine a past or present situation as it is. In this model, the event, person or object that is the subject of research is tried to be defined in its own conditions and as it is (Karasar, 2019).

Working Group

The study group of the research consists of 304 social studies teacher candidates studying at different universities in the fall semester of the 2020-2021 academic year. 72.4% (n=220) of the participants were female and 27.6% (n=84) were male; 31.3% (n=95) were 18-20 years old, 61.5% (n=187) were 21-23 years old, 7.2% (n=22) were 24 years old and over. 13.8% (n=42) of the mothers of the participants were illiterate, 56.6% (n=172) primary school, 16.1% (n=49) secondary school, 9.2% (n=28) high school, and 4.3% (n=13) were university graduates; 1% (n=3) of their fathers were illiterate, 41.8% (n=127) primary school, 21.4% (n=65) secondary school, 25% (n=76) high school and 10.9% (n=33) are university graduates. 10.2% (n=31) of the families of the participants 1000 TL and below, 22.7% (n=69) 1001-2000 TL, 27.6% (n=84) 2001-3000 TL, 15.5% (n=47) 3001-4000 TL, 11.5% (n=35) 4001-5000 TL and 12.5% (n=38) 5001 TL and above monthly income. 9.5% (n=29) TR9 Eastern Black Sea, 7.6% (n=23) TRC Southeast, 36.2% (n=110) TR6 Mediterranean, 28.9% (n=88) TR7 Central Anatolia, and 16.8% (n=51) studied at a university in TR8 Western Black Sea. In terms of the source from which participants learned information about sustainable development, 23.7% (n=72) came from official educational institutions, 28.3% (n=86) from the Internet, 16.1% (n=49) from the environment, 12.2% (n=37) from family, 16.8% (n=51) from media, and 3% (n=9) from NGOs.

Analysis of the Data

Descriptive statistics were used in the analysis of the data. Normality of the data was tested by Kolmogorov Smirnov test using the skewness and kurtosis coefficients. According to the results obtained here, it was found that it did not show normal distribution.

Validity and Reliability

To ensure the validity and reliability of the study results, Cronbach's alpha (α) value was calculated for all sub-dimensions and the sum of the scale. Accordingly, $\alpha =$ for economic sustainability.75, $\alpha =$ for social sustainability.902, $\alpha =$ for environmental sustainability.785, and for the sum of the scale $\alpha =$.it is calculated as 915. At least the Cronbach alpha value. It is generally accepted that there 70 (Landis and Koch, cited from 1977, Seçer, 2018, p. 30) considering the results obtained in the study, it can be said that the internal consistency coefficient values are sufficient.

Results

This section examines the results of the "Awareness of Sustainable Development" scale and its sub-dimensions according to different variables. Mann-Whitney U test was conducted to examine the status of Social Studies Teacher candidate scores for sustainable development scale and dimensions according to gender variables. The results obtained are given in Table 2. Through the analysis, no significant difference was found in the dimension of economic sustainability. ($U = 9108.00$, $p > 0.05$) However, a significant difference was found in favor of women in Social Sustainability dimension, ($U = 7965.00$, $p < 0.05$) Ecological Sustainability dimension ($U =$

6841.50, $p < 0.05$) and Scale Sum ($U = 7694.50$, $p < 0.05$).

Table 2. Mann-Whitney-U-Test to differentiate the Results of the Scale "Sustainable Development" and its Dimensions in the Teaching Candidates for Social Studies according to the Gender Variable

Dimension	Group	N	Rank Average	Rank Sum	U	p
Economic Sustainability	Woman	220	153.10	33682.00	9108.00	.847
	Man	84	150.93	12678.00		
Social Sustainability	Woman	220	158.30	34825.00	7965.00	0.04
	Man	84	137.32	11535.00		
Environmental Sustainability	Woman	220	163.40	35948.50	6841.50	0.00
	Man	84	123.95	10411.50		
Total	Woman	220	159.53	35095.50	7694.50	.024
	Man	84	134.10	11264.50		

Kruskal Wallis H test was conducted to investigate the difference between the scores of Social Studies Teacher Candidates for Sustainable Development scale and dimensions according to the age group variable. The obtained results are presented in Table 3. The result of the analysis in all dimensions [economic sustainability $X^2(2) = 3.114$, $p > 0.05$; social sustainability $X^2(2) = 2.224$, $p > 0.05$; environmental sustainability $X^2(2) = 1.517$, $p > 0.05$] and the sum of the scale [$X^2(2) = .for 591$, $p > 0.05$] no significant differences were found.

Table 3. The Kruskal Wallis H test for differentiating Social Studies Teacher Candidates obtained from the Sustainable Development Scale and its Dimensions according to the Age Group Variable

Dimension	Groups	N	Rank average	sd	X^2	p
Economic Sustainability	18-20	95	155.27	2	3.114	.211
	21-23	187	147.66			
	24 and above	22	181.68			
Social Sustainability	18-20	95	153.83	2	2.224	.329
	21-23	187	154.79			
	24 and above	22	127.25			
Environmental Sustainability	18-20	95	144.09	2	1.517	.468
	21-23	187	155.30			
	24 and above	22	165.00			
Total	18-20	95	147.95	2	.591	.744
	21-23	187	153.59			
	24 and above	22	162.86			

The Kruskal Wallis H test was used to examine the difference in Social Studies teacher candidates' scores on the Sustainable Development Scale and its dimensions according to the age group variables. The obtained results are presented in Table 4. As a result of the analysis, all dimensions [Economic Sustainability $X^2(4) = 8.928$, $p > 0.05$;

Social Sustainability $X^2(4) = 2.145$, $p > 0.05$; For Environmental Sustainability $X^2(4) = 1.668$, $p > 0.05$] and the sum of the scale [$X^2(4) = 2.657$, $p > 0.05$] no significant difference was found.

Table 4. Kruskal Wallis H test in relation to the Differences of Social Studies Teacher Candidates' Scores obtained from the Sustainable Development Scale and its Dimensions according to the Variables of Mother's Educational Status

Dimension	Groups	N	Rank average	sd	X^2	p
Economic Sustainability	Not literate	42	167.57	4	8.928	.063
	Primary school	172	160.10			
	Secondary school	49	134.55			
	High school	28	134.61			
	University	13	109.42			
Social Sustainability	Not literate	42	154.50	4	2.145	.709
	Primary school	172	149.54			
	Secondary school	49	164.09			
	High school	28	140.84			
	University	13	166.58			
Environmental Sustainability	Not literate	42	155.67	4	1.668	.796
	Primary school	172	155.33			
	Secondary school	49	151.91			
	High school	28	132.84			
	University	13	149.35			
Total	Not literate	42	161.18	4	2.657	.617
	Primary school	172	156.11			
	Secondary school	49	147.87			
	High school	28	134.46			
	University	13	133.04			

The Kruskal Wallis H test was used to examine the difference in the scores of the Social Studies teacher candidates for the Sustainable Development Scale and its dimensions according to the age group variable. The results obtained are shown in Table 5.

Table 5. Kruskal Wallis H test in relation to the Differences of Social Studies Teacher Candidates' Scores obtained from the Sustainable Development Scale and its Dimensions according to the Variable of Educational

Status of the Father						
Dimension	Groups	N	Rank average	sd	X ²	p
Economic Sustainability	Not literate	3	182.50	4	11.198	.024
	Primary school	127	170.39			
	Secondary school	65	147.18			
	High school	76	137.59			
	University	33	125.74			
Social Sustainability	Not literate	3	232.00	4	4.787	.310
	Primary school	127	153.76			
	Secondary school	65	147.00			
	High school	76	158.90			
	University	33	136.52			
Environmental Sustainability	Not literate	3	229.83	4	2.824	.588
	Primary school	127	155.54			
	Secondary school	65	148.86			
	High school	76	147.88			
	University	33	151.61			
Total	Not literate	3	229.17	4	5.525	.238
	Primary school	127	161.73			
	Secondary school	65	147.72			
	High school	76	145.11			
	University	33	136.45			

As a result of the analysis, a significant difference was determined between those whose fathers were primary school graduates and those whose fathers were high school or university graduates in terms of Economic Sustainability. This result is in favor of those whose fathers are primary school graduates. However, Bonferroni correction was made in order to prevent Type I error ($0.05/10=0.005$) and when compared with the new α value, no significant difference was determined in the Economic Sustainability dimension. In other dimensions [Social Sustainability $X^2(4)=4.787$, $p>0.05$; Environmental Sustainability $X^2(4)=2.824$, $p>0.05$] no significant difference was determined. In addition, no significant difference was determined for the total of the scale [$X^2(4)=5.525$, $p>0.05$].

The Kruskal Wallis H test was conducted to investigate the fact that the scores of social studies teacher candidates for the sustainable development scale and its dimensions differed according to the variable of family monthly income. The obtained results are presented in Table 6. Analysis result in all dimensions [economic sustainability $X^2(5)=6.158$, $p>0.05$; social sustainability $X^2(5)=2.609$, $p>0.05$; environmental sustainability $X^2(5)=2.314$, $p>0.05$] and the sum of the scale [$X^2(5)=3.273$, $p>0.05$] for significant differences to be determined.

Table 6. Kruskal Wallis H Test Regarding the Differences of Social Studies Teacher Candidates' Scores from the Sustainable Development Scale and its Dimensions According to the Variable of Monthly Family Income

Dimension	Groups	N	Rank average	sd	X ²	p
Economic Sustainability	1000 TL and below	31	149.34	5	6.158	.291
	1001-2000	69	152.38			
	2001-3000	84	159.84			
	3001-4000	47	167.84			
	4001-5000	35	148.11			
	5001 TL and above	38	124.13			
Social Sustainability	1000 TL and below	31	150.02	5	2.609	.760
	1001-2000	69	163.54			
	2001-3000	84	144.38			
	3001-4000	47	159.00			
	4001-5000	35	145.87			
	5001 TL and above	38	150.50			
Environmental Sustainability	1000 TL and below	31	151.32	5	2.314	.804
	1001-2000	69	162.16			
	2001-3000	84	153.83			
	3001-4000	47	142.10			
	4001-5000	35	157.77			
	5001 TL and above	38	141.00			
Total	1000 TL and below	31	147.06	5	3.273	.658
	1001-2000	69	160.98			
	2001-3000	84	155.46			
	3001-4000	47	155.44			
	4001-5000	35	153.31			
	5001 TL and above	38	130.62			

The Kruskal Wallis H test was used to examine the difference in Social Studies teacher candidates' scores on the Sustainable Development Scale and its dimensions according to the age group variables. The obtained results are presented in Table 7. As a result of the analysis, all dimensions [Economic Sustainability $X^2(5) = 10.557$, $p > 0.05$; Social Sustainability $X^2(5) = 9.320$, $p > 0.05$; For Environmental Sustainability $X^2(5) = .690$, $p > 0.05$] and

the sum of the scale [$X^2(5) = 5.561, p > 0.05$] no significant difference was found.

Table 7. Kruskal Wallis H Test of Social Studies Scores of Teacher Candidates from the Scale of Sustainable Development and its Dimensions in terms of their Differentiation Status according to the Regional Variable of the University in which they Study

Dimension	Groups	N	Rank average	sd	X^2	p
Economic Sustainability	TR9 Eastern Black Sea	29	142.00	4	11.088	.026
	TRC Southeast	23	199.63			
	TR6 Mediterranean	110	144.50			
	TR7 Central Anatolia	88	140.47			
	TR8 Western Black Sea	51	166.38			
Social Sustainability	TR9 Eastern Black Sea	29	176.21	4	7.601	.107
	TRC Southeast	23	167.76			
	TR6 Mediterranean	110	142.40			
	TR7 Central Anatolia	88	141.22			
	TR8 Western Black Sea	51	164.54			
Environmental Sustainability	TR9 Eastern Black Sea	29	168.48	4	8.429	.077
	TRC Southeast	23	188.93			
	TR6 Mediterranean	110	140.31			
	TR7 Central Anatolia	88	143.59			
	TR8 Western Black Sea	51	159.78			
Total	TR9 Eastern Black Sea	29	163.84	4	11.474	.022
	TRC Southeast	23	195.63			
	TR6 Mediterranean	110	141.19			
	TR7 Central Anatolia	88	138.53			
	TR8 Western Black Sea	51	166.25			

Conclusion and Discussion

It was found that female social studies teachers' scores from social and environmental sustainability dimensions and the total sum of the scale were significantly higher than males. Türer (2010) found in his study with female science and social studies teachers that female participants' awareness of sustainable development was higher than that of males. A similar result was also found in Faiz and Bozdemir Yüzbaşıoğlu's (2019) study with preservice teachers in teaching, social studies, and science. In the related study, it was determined that female teacher candidates had higher awareness than males when the environmental-economic dimension of sustainable development was taken into account. Considering this situation, it can be said that female participants' awareness of sustainable development is higher.

Unlike this result, Çobanoğlu and Türer (2015) determined in their study with social studies and science teachers

that awareness of sustainable development did not differ according to the gender variable. Again, in the research conducted by Öztürk Demirbaş (2015) with pre-service teachers, it was determined that the awareness of sustainable development did not differ according to gender. Similarly, in the study conducted by Atmaca (2018), no significant difference was found between the sustainable development awareness of pre-service science teachers and their gender. Unlike these results, Zelezny, Chua, and Aldrick (2000) investigated the effect of gender differences in environmentalism, and it was concluded that women were more interested in environmental issues and environmentally friendly behaviors than men were.

For all other variables analyzed, no significant difference was found both in terms of total scale score and in terms of all sub-dimensions. Accordingly, no significant relationship was found between the age of social studies teachers and their awareness of sustainable development. In the study, no significant relationship was found between social studies teachers' awareness of sustainable development and the variables of parental education level and family monthly income. Similarly, in Atmaca's (2018) and Koçulu's (2018) studies, no significant difference was found in the literature between science teacher candidates' mother-father education level, family monthly income, and sustainable development awareness level. In the study, it was not found that there was no significant difference in the scores of sustainable development awareness of social studies teachers according to the university they studied. In the study of Atmaca (2018) in the literature, no significant difference was found in the general awareness of sustainable development awareness of science teacher candidates according to the university they studied and economic and environmental dimensions.

In the study, no significant difference was found between the sustainable development awareness levels of social studies teachers and the source variable from which they acquired their sustainable development knowledge. In Kahrman Pamuk's (2019) study with preschool teacher candidates, it was found that my membership in the non-governmental organization did not predict the attitude towards sustainable development. Although this study identified one of the sources of information for sustainable development as SKT, this variable had no significant effect. This shows that the studies overlap. However, it was observed that after the official training, participants identified their sources of information on sustainable development as the Internet.

In a similar way, Gökmen (2014) concluded in his study that the sources of information for teachers' candidates for sustainable development are mainly the Internet. A similar result was found in the study conducted by Türer (2010) with teaching candidates for natural sciences and social studies and in the study conducted by Atmaca (2018) with teaching candidates for natural sciences. The study found that awareness of sustainable development does not differ according to the income level of the family and the educational status of the parents.

Recommendations

- In this study, it was found that female participants had higher awareness of social and environmental sustainability sub-dimensions of sustainable development and the entirety of the scale. It is suggested that more in-depth studies be conducted to investigate this finding.
- In this study, the views of social science teacher candidates on sustainable development were examined

quantitatively. Participants' views on sustainable development can be explored using qualitative research techniques. Therefore, it is proposed to obtain in-depth data.

- In this study, social science teacher candidates were investigated. It is also proposed to investigate the awareness of students, teachers, parents, and faculty members who are stakeholders of the sustainable development process.

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