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Analysis of Disaster Awareness Perception Levels of Students in Social Studies Teaching Undergraduate Program

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Abstract
Disasters are known as calamities affecting all humanity on earth and have adverse impacts on human life in various ways. Although many natural disasters cannot be prevented, their adverse effects on people can be mitigated. It is important to raise the awareness of people about disasters, whether they are caused by human effects or nature. Disaster education plays an important role in raising this awareness. The study group of the study consists of 172 teacher candidates receiving education in the 1st, 2nd, 3rd and 4th grades of the department of social studies teaching in a state university located in the Central Anatolia region. In order to measure the disaster awareness of the teacher candidates, the scanning pattern included under the quantitative study method has been used. T-test and ANOVA has been utilized in the analysis of disaster awareness perception scale. As the result of the analysis; in the sub-dimensions of disaster education awareness, pre-disaster awareness, false disaster awareness and post-disaster awareness, the teacher candidates have been evaluated according to their gender, their general academic average scores, their participation in a conference or a panel and according to their homework, presentation or project preparing status. Based on the results of the research, in order for the teacher candidates to gain the right disaster awareness, it has been recommended that they should be provided with disaster awareness courses in their undergraduate curriculum, that they should take part in various research projects, and attend various symposiums, congresses related with disaster awareness.

Keywords: Social Studies, Disaster, Disaster Awareness, Perception Level

INTRODUCTION

Disasters are known as calamities that have affected all humanity on earth for centuries and had adverse impacts on human life social wise, economic wise and in various other ways. Disaster is a major crisis that affects society (Lee & Lee, 2019). At the same time, disasters are a common problem affecting all humanity (Çelik, 2020). This effect varies according to place and time. Based on this, disasters can be defined as follows: "The consequences of natural, technological or human-based incidents that cause physical, economic and social losses for people, natural and cultural resources, affect communities by stopping or disrupting the normal life and human activities, and of which the affected community cannot cope with using local facilities and resources are called disasters" (AFAD, 2013). Another definition is as follows: "Disasters are events that occur relatively suddenly in a specific geographic area, create collective stress, cause a certain amount of loss and disrupt the life of the society" (Tierney, 1989 cited by Öztürk, 2013, p. 308). The disaster here can be expressed as not an event itself but as the damage

caused by this natural or man-made event (Özey, 2011). These disasters that affect humanity differ as natural ones such as earthquakes and floods or as man-made ones that occur due to human effects. One of the biggest disasters affecting humanity is earthquakes (Aydın, 2010). Earthquakes are among the most common natural disasters in our country. Earthquakes, like other disasters, affect society in all aspects; physically, economically and sociologically (Karakuş, 2013). The older parts of the earth are the areas where the earthquake risk is the least (Sür, 1993). Turkey is a young country due to its geological structure. Thus, this situation brings along with it the geological mobility. A large part of the population in Turkey lives under the risk of earthquakes (Değirmençay & Cin, 2016). In addition to earthquakes, many natural disasters occur that affect humanity. Flood, drought, erosion and landslide can be named among the disasters that affect all the living things (Bozyiğit, Kaya, 2017). Many disasters affect humanity directly or indirectly. Natural disasters may not be prevented, but their impact on people can be mitigated (Cin, 2010; İnal, Kocagöz & Turan, 2012).

Individuals have been exposed to disasters in various ways and at various dimensions throughout their lives and their lives have been adversely affected (Özkazanç, Duman & Yüksel, 2015). "Therefore, in order for disasters to be regarded as comprehensible situations in societies with different socio-economic structures and for to teach their vital impacts effectively to all the individuals through education, society in general and students in particular must go through a serious education process" (Özgen, Ünaldı & Bindak, 2011, p. 305). Starting from childhood, this education process should be executed both formally and informally, as it may not be clear when the natural disasters shall affect human life. For example, people may encounter an earthquake, which is a natural disaster, at any time in their lives (Özgüven, 2006). Social awareness should be created for disasters that affect people's lives and cause serious physical, economic and social damage."Planning disaster awareness and disaster preparedness activities separately from people's daily life and worries makes it difficult to achieve the goals" (Şahin, Lamba & Öztop, 2018, p. 150). Therefore, all the activities concerning disasters should be integrated to daily life. Various natural events take place every day on earth, which do not harm different hominid lines (Tekin & Dikmenli, 2020). However, people should be made aware of all natural phenomena. Disaster education plays a great role in raising this awareness. In addition to printed materials, digital materials and various methods and techniques can be used in disaster education (Değirmenci, Kuzey & Yetişensoy, 2019). It is of importance to start giving disaster education to children at an early age (Karakuş& Öngör, 2017). "Disaster preparedness training is a part of disaster and emergency planning and contributes to the system in the preparation phase of risk management. Disaster trainings for the society should focus on improving skills rather than memorization"(Gerdan, 2019, p.105). Post-disaster phase constitutes the most important stage of disaster management (Bartolucci & Magni, 2016). Therefore, the post-disaster stage is included in disaster education as an important section.

The aim of this study is to determine the disaster awareness of the social studies teacher candidates. In this context, replies to the following questions have been sought in this study:

1. Is there a difference between the disaster awareness perception scores of the participants according to the gender variable?
2. Is there a difference between the disaster awareness perception scores of the participants according to their general academic average scores?
3. Is there a difference between the disaster awareness perception scores of the participants according to their participation in conferences or panels?
4. Is there a difference between the disaster awareness perception scores of the participants according to their homework, presentation or project preparation status on disasters?

METHOD

This section includes the research model, study group, data collection tool and analysis of the data.

STUDY MODEL

In this study, quantitative model has been used to measure the disaster awareness of the social studies teacher candidates. In the study, the scanning pattern included under the quantitative study method has been used. The

scanning pattern is “the studies that are made on relatively larger samples compared to other studies, where the opinions of the participants about a subject or event or their interests, skills, abilities, attitudes and similar characteristics are determined." (Büyüköztürk, Kılıç, Çakmak, Akgün, Karadeniz & Demirel, 2016, p.177). Scan patterns generally have structured features (Ekiz, 2015).

STUDY GROUP OF THE RESEARCH

172 teacher candidates, receiving education in the 1st, 2nd, 3rd and 4th grades of the department of social studies teaching in a state university located in the Central Anatolia region, constitute the study group of the research. The study group of the research has been selected according to the simple random sampling method. The most prominent feature of the simple random sampling is that “each unit in the universe has the possibility to be equal and independent in being selected for sampling” (Balcı, 2016, p.99).

Table 1: Demographic Features of the Study Group

Gender	f
Female	36
Male	136

According to Table 1, the study group of the research consists of 172 social studies teacher candidates in total, of which 36 are females and 136 are males.

DATA COLLECTION TOOL

In the research, disaster awareness perception scale prepared by Dikmenli, Yakar & Koca (2018) has been used as the data collection tool. The scale is of 5-point Likert type and consists of 36 items. Disaster education awareness, pre-disaster awareness, false disaster awareness and post-disaster awareness sub-dimensions have been included. In the first part of the scale, demographic information about the teacher candidates has been given. In the second part of the scale, items of disaster awareness scale have been included. The Cronbach Alpha Coefficient of the whole disaster awareness scale was found to be .671.

DATA ANALYSIS

In the study, SPSS computer program has been used to analyze the scores achieved by the social studies teacher candidates in the disaster awareness perception scale. As a result of the analysis conducted, it has been determined that the data showed a normal distribution when the Kolmogorov-Smirnov test has been performed. T-test and one-way analysis of variance has been used for the analysis of disaster awareness perception scale scores of the teacher candidates.

RESULTS

Findings Regarding the First Sub-Problem

The first sub-problem of the study is the question of "Is there a difference between the disaster awareness perception scores of the participants according to the gender variable?". T-test has been conducted for independent groups regarding the solution to the problem. The results obtained are given below.

Table 1: T-Test Results for Independent Groups Regarding the Comparison of Disaster Awareness Perception Scores by Gender Variable

Gender	**N**	$\overline{X}$	**S**	**Sd**	t	p
Female	36	3,20	,349	170	,930	,354
Male	136	3,14	,283			

According to the analysis results, there is no statistically significant difference between the disaster awareness perception scores of the participants according to their gender ($t_{(170)}$ =, 930, p> .05). This finding can be interpreted as being a male or a female does not change disaster awareness perceptions.

On the other hand, in order to understand whether there is a statistically significant difference in the disaster awareness perception scale sub-dimensions of the gender variable, the average scores for the dimensions have been calculated and subjected to a t-test for independent groups. The results achieved are given below.

Table 2: T-Test Results for Independent Groups Regarding the Comparison of the Disaster Awareness Perception Scale Sub-Dimensions Mean Scores According to the Gender Variable

Dimension	Gender	**N**	$\overline{X}$	**S**	**Sd**	t	p
Disaster Education Awareness	Female	36	3,24	,648	170	,250	,803
	Male	136	3,21	,469			
Pre-Disaster Awareness	Female	36	3,12	,384	170	-,811	,419
	Male	136	3,18	,384			
False Disaster Awareness	Female	36	3,19	,423	170	1,65	,101
	Male	136	3,06	,411			
Post-Disaster Awareness	Female	36	3,22	,566	170	1,71	,090
	Male	136	3,06	,477			

According to the gender variable, no statistically significant difference has been found between the disaster education awareness dimension mean scores of the participants ($t_{(170)}$ =, 250, p> .05). This finding can be interpreted as being a male or a female does not change the participants' awareness of disaster education.

When the pre-disaster awareness dimension mean scores have been compared according to the gender variable, it has also been found that there was no statistically significant difference ($t_{(170)}$= -, 811, p> .05). This finding can be interpreted as being a male or a female does not change the pre-disaster awareness of the participants.

When the mean scores of the participants in the false disaster awareness dimension have been compared, again, no statistically significant difference has been observed ($t_{(170)}$ = 1.65, p> .05). This finding can be interpreted as being a male or a female does not cause a difference in their status of having false disaster awareness or not.

Finally, when the participants' mean scores have been compared in the dimension of post disaster awareness, it has been found that there was no statistically significant difference ($t_{(170)}$ = 1.71, p> .05). This finding can be interpreted as that the participants' state of awareness after the disaster has not changed according to their being of a male or a female.

Findings Regarding the Second Sub-Problem

The question of "Is there a difference between the disaster awareness perception scores of the participants according to their general academic average scores?" constitutes the second sub-problem of the study. Conducting of one-way analysis of variance has been required to solve the problem. However, just before carrying out the variance analysis, Levene test has been performed to determine whether the assumption of homogeneity of variances was achieved or not. According to the results of the analysis, it has been understood that the scores obtained from the 4 dimensions and from the whole scale met the assumption of homogeneous distribution of variances. From this point of view, one-way analysis of variance has been conducted. The results obtained are given below. Descriptive statistics regarding the average scores of the participants obtained from the sub-dimensions and from the whole of the scale are presented in Table 3; and the one-way variance analysis findings according to the academic averages are given in Table 4.

Table 3: Descriptive Statistics According to Academic Averages

Dimension	Academic Average	N	$\overline{X}$	ss
Disaster Education Awareness	Lower than 2	10	3,30	,574
	Between 2.01-3.0	13	3,06	,483
	Between3.01-4.0	61	3,31	,502
	4,00	88	3,17	,508
	Total	172	3,22	,510
Pre-Disaster Awareness	Lower than 2	10	3,13	,503
	Between2.01-3.0	13	3,05	,344
	Between3.01-4.0	61	3,19	,335
	4,00	88	3,17	,409
	Total	172	3,16	,384
False Disaster Awareness	Lower than 2	10	3,23	,523
	Between 2.01-3.0	13	2,95	,370
	Between 3.01-4.0	61	3,07	,416
	4,00	88	3,11	,408
	Total	172	3,0901	,41520
Post-Disaster Awareness	Lower than 2	10	3,2500	,52851
	Between 2.01-3.0	13	2,9744	,45055
	Between 3.01-4.0	61	3,1694	,50780
	4,00	88	3,0379	,49307
	Total	172	3,0921	,49927
Whole of the Scale	Lower than 2	10	3,2343	,42116
	Between 2.01-3.0	13	3,0176	,23051
	Between 3.01-4.0	61	3,2037	,29446
	4,00	88	3,1325	,28824
	Total	172	3,1550	,29777

Table 4: One-Way Analysis of Variance Results According to Academic Averages

Dimension	Source of Variance	Squares Tot.	sd	SquaresAvr.	F	p
Disaster Education Awareness	Intergroup	1,128	3	,376	1,458	,228
	Intragroup	43,319	168	,258		
	Total	44,446	171			
Pre-Disaster Awareness	Intergroup	,224	3	,075	,503	,681
	Intragroup	24,979	168	,149		
	Total	25,204	171			
False Disaster Awareness	Intergroup	,470	3	,157	,908	,439
	Intragroup	29,008	168	,173		
	Total	29,478	171			
Post-Disaster Awareness	Intergroup	1,053	3	,351	1,418	,239
	Intragroup	41,573	168	,247		
	Total	42,626	171			
Whole of the Scale	Intergroup	,498	3	,166	1,902	,131
	Intragroup	14,664	168	,087		
	Total	15,162	171			

When the variance analysis results in Table 4 have been examined, according to the variable of the academic averages of the participants, no statistically significant difference has been observed among the average scores obtained from disaster education awareness ($F_{(3-168)}$ = 1,458; p>.05), pre-disaster awareness ($F_{(3-168)}$ =, 503; p> .05), false disaster awareness ($F_{(3-168)}$ =, 908; p> .05), post-disaster awareness ($F_{(3-168)}$ = 1,418; p> .05) and the mean scores obtained from the total of the scale ($F_{(3-168)}$ = 1,902; p> .05). This means that participants' perceptions of disaster awareness do not change according to their academic averages.

Findings Regarding the Third Sub-Problem

The third sub-problem of the study is the question of "Is there a difference between the disaster awareness perception scores of the participants according to their participation in conferences or panels?". T-test has been conducted for independent groups regarding the solution to the problem. The results obtained are given below.

Table 5: T-Test Results for Independent Groups Regarding the Comparison of Disaster Awareness Perception Scores According to the Conference or Panel Participation Status

Participation Status	**N**	$\overline{X}$	**S**	**Sd**	t	p
Yes	35	3,24	,248	170	2,02	,045
No	137	3,13	,306			

When the averages of the disaster awareness perception scale of the participants have been compared according to whether they have attended a conference or a panel on disasters, a statistically significant difference has been observed in favor of the participants ($t_{(170)}$=2,02; p<.05). The disaster awareness perception average score of the participants who have attended to a conference and a panel is ($\overline{X}$ = 3,24), whereas the average of those who have not attended is ($\overline{X}$ = 3,13). This finding can be interpreted as participating in a conference or a panel changes the disaster awareness perceptions.

On the other hand, in order to compare the scores obtained from the sub-dimensions of the scale, a t-test has been conducted for the independent groups. The results obtained are given in Table 6.

Table 6: T Test Results for Independent Groups Regarding the Comparison of the Disaster Awareness Perception Scale Sub-Dimensions Mean Scores According to the Participation Status in a Conference or a Panel

Dimension	Participation Status	**N**	$\overline{X}$	**S**	**Sd**	t	p
Disaster Education Awareness	Yes	35	3,30	,498	170	1,020	,309
	No	137	3,20	,513			
Pre-Disaster Awareness	Yes	35	3,20	,314	170	,555	,580
	No	137	3,16	,400			
False Disaster Awareness	Yes	35	3,31	,313	170	3,710	,000
	No	137	3,03	,420			
Post-Disaster Awareness	Yes	35	3,10	,526	170	,168	,867
	No	137	3,09	,494			

When the results of the analysis is observed, statistically no difference has been found in the dimensions of disaster education awareness ($t_{(170)}$=1,020; p>.05), of pre-disaster awareness ($t_{(170)}$=,555; p>.05) and of post-disaster awareness ($t_{(170)}$=,168; p>.05). This finding can be interpreted as whether they attend a conference or a panel does not make a difference in the disaster education, pre and post disaster awareness of the participants. On the other hand, in the false disaster awareness dimension, a statistically significant difference has been observed in favor of those who have attended a conference or a panel ($t_{(170)}$=3,710; p<.05). This finding can be interpreted as that those who have attended to a conference or a panel have acquired more accurate disaster awareness than those who have not attended.

Findings Regarding the Fourth Sub-Problem

The fourth sub-problem of the study is the question of “Is there a difference between the disaster awareness perception scores of the participants according to homework, presentation or project preparation status?”. T-test has been conducted for the independent groups regarding the solution to the problem. The results obtained are given below.

Table 7: T-Test Results for Independent Groups Regarding the Comparison of Disaster Awareness Perception Scores According to Homework, Presentation or Project Preparation Status

Preparation Status	**N**	$\overline{X}$	**S**	**Sd**	t	p
Yes	82	3,21	,245	170	2,532	,012
No	90	3,10	,331			

A statistically significant difference has been found in favor of the ones who have prepared a homework, a presentation or a project on disasters when the average scores obtained by the participants in disaster awareness perception scale has been compared according to their preparation status ($t_{(170)}$ = 2.532; p <.05). The disaster awareness perception average score of those who have prepared homework, presentations or projects is ($\overline{X}$ = 3.21), whereas the average of those who have not prepared is ($\overline{X}$ = 3.10). This finding can be interpreted as homework, presentation or project preparation changes disaster awareness perceptions.

On the other hand, in order to compare the scores obtained from the sub-dimensions of the scale, a t-test has been conducted for the independent groups. The results obtained are given in Table 8.

Table 8: T Test Results for Independent Groups Regarding the Comparison of the Disaster Awareness Perception Scale Sub-Dimensions Mean Scores According to Homework, Presentation or Project Preparation Status

Dimension	Preparation Status	**N**	$\overline{X}$	**S**	**Sd**	t	p
Disaster Education Awareness	Yes	82	3,24	,394	170	,491	,624
	No	90	3,20	,598			
Pre-Disaster Awareness	Yes	82	3,20	,036	170	1,07	,315
	No	90	3,14	,045			
False Disaster Awareness	Yes	82	3,24	,373	170	4,77	,000
	No	90	2,95	,406			
Post-Disaster Awareness	Yes	82	3,15	,500	170	1,57	,118
	No	90	3,04	,494			

When the results of the analysis is observed, statistically no difference has been found in the dimensions of disaster education awareness($t_{(170)}$=,491; p>.05), of pre-disaster awareness ($t_{(170)}$=1,07; p>.05) and of post-disaster awareness ($t_{(170)}$ = 1.57 p>.05). This finding can be interpreted as that the homework, presentation or project preparation status does not make a difference in the disaster education awareness, pre-disaster awareness and post-disaster awareness of the participants. On the other hand, in the false disaster awareness dimension, a statistically significant difference has been observed in favor of the preparers ($t_{(170)}$ = 4,777; p <.05). This finding can be interpreted as those who prepare homework, presentations or projects have more accurate disaster awareness than those who have not.

Discussion, Conclusion and Suggestions

In the study, the awareness of the teacher candidates about disasters has been examined. As a result of the analysis conducted, when the scores of the teacher candidates in disaster education awareness, pre-disaster awareness, false disaster awareness and post-disaster awareness sub-dimensions have been examined according to gender, no significant difference has been observed between the female and male teacher candidates. This situation shows that gender is not an effective factor in creating disaster awareness. When the academic achievements of teacher candidates have been examined, it has been determined that academic success did not make a significant difference in the sub-dimensions of disaster education awareness, pre-disaster awareness, false disaster awareness and post-disaster awareness. Based on the results of the research study, it can be stated that the academic success of the teacher candidates does not constitute an effective factor. When the disaster awareness perception scores of the

teacher candidates according to their participation in a conference or in a panels have been examined, no statistically significant difference has been observed in the dimensions of disaster education awareness, pre-disaster awareness and post-disaster awareness. On the other hand, a statistically significant difference has been observed in favor of the conference and panel participants in the false disaster awareness dimension. According to this result obtained, teacher candidates' participation status in a conference or in a panel reveals that false disaster awareness or mislearning has been eliminated. When the disaster awareness scores of the teacher candidates have been examined according to their homework, presentation or project preparation status, no statistically significant difference has been determined in disaster education awareness, pre-disaster awareness and post-disaster awareness dimensions. However, in the false disaster awareness dimension, a statistically significant difference has been observed in favor of those who have prepared homework, presentations or projects. According to this result of the study, it has been revealed that making of research on disaster awareness by the teacher candidates' is an important factor in eliminating false disaster awareness.

In the study conducted by Tekin & Dikmenli (2021) with classroom teacher (class master) candidates, it has been determined that they have high level of disaster education awareness perception, pre-disaster awareness perception, false disaster awareness perception and general disaster awareness perception but moderate level of post-disaster awareness perception. In the study conducted by Dikmenli and Yakar (2019), it has been concluded that teacher candidates' disaster awareness perception levels were at a medium level. In the study conducted by Inal, Kocagöz & Turan (2012) with university students, it has been found that the scores related to basic disaster and preparedness levels were low. The study by Şahin, Lamba & Öztop (2018) carried out on university students to determine the disaster awareness and disaster preparedness levels, has revealed that the disaster levels of the students were high, but their preparedness levels were low. In the study conducted by Dökmeci & Meriç (2018) with undergraduate and associate degree students on disaster awareness, results have been obtained in favor of undergraduate students. In the study conducted by Ayvazoğlu, Çekiç & Yüksel (2020), a positive significant relationship has been found between the disaster risk perception and preparedness levels of university students.

Based on the results of the research study, the following suggestions can be made to raise disaster awareness of teacher candidates, to have them gain disaster awareness:

- Courses should be included in the undergraduate curriculum of the teacher candidates in order to create the correct disaster awareness.
- In order to form and raise disaster awareness, it should be ensured that teacher candidates take part in various research projects.
- Participation of the teacher candidates in various symposiums, congresses etc. created for disaster awareness should be provided.

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