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What is Secondary School Students' Awareness on Disasters?

A Case Study

Adnan PINAR[1]

Necmettin Erbakan University, Konya, TURKEY

Abstract

The behaviors of individuals on the issue of being able to cope with disasters are directly proportional to their level of preparedness and awareness. For this reason, revealing the individual's level of awareness on disasters is both the first phase of the studies to be carried out on this issue and an important contribution to the social disaster management studies. The aim of this study conducted in this regard is to determine the basic disaster consciousness and awareness level of secondary school students. The study was designed according to case study technique from qualitative research methods. The study group was composed of fifty students attending the secondary education institutions in Konya. The data obtained through the structured interview technique was evaluated through the descriptive analysis method. Accordingly, it was concluded that secondary students classified the disaster concept as a phenomenon related only to natural factors, failed to identify the human factors causing the disaster, classified the disaster types as natural disasters and failed to classify the dimension of the disasters, lacked sufficient knowledge in disaster preparedness as well as predictions with regards to the disaster types they may face in their regions. In addition, students also considered the level of development of the country as a determining factor in disaster management. In light of these results, education on disasters should start in the family and be developed through local municipalities and non-governmental organizations in order to raise awareness regarding disasters.

Keywords

Disaster, Awareness Level, Secondary School Students

[1]Necmettin Erbakan University, Faculty of Education, Department of Turkish and Social Studies Education, Konya, Turkey. e-mail: apinar [at] konya.edu.tr

The "disaster" that started with the history of mankind has been experienced and interpreted differently in every geographical region on the earth. This phenomenon, which is defined as a natural phenomenon attributed to God in antiquity (e.g., Poseidon, the god of earthquakes), is defined as the results of natural and human-induced events that cause physical, economic, and social loss for humans, that affect communities by stopping or interrupting normal life and human activities, and that cannot be overcome by the affected community by using their resources alone (Özmen et al., 2005).

The process of disaster formation may be natural as stated in the afore-mentioned definition, or it can be human-induced in relation to various activities of people. Natural disasters are commonly named after the natural hazard that causes the disaster and classified on the basis of the reasons for their occurrence, the environment in which they occur, and their speed of occurrence. It is possible to categorize the natural disasters based ontheir origin; namely geophysical, climatological and biological events and hydrological events (Güler ve Çobanoğlu, 1994, Şahin and Sipahioğlu, 2003; Özey, 2006). Earthquake, tsunami, volcanic eruptions and all kinds of mass movements can be examples of geological disasters, while floods, extreme heat and extreme colds, extreme snow, air pollution, drought, effective winds, whirlwind, tornado, hurricane, lightning strike, fog, hail, avalanche, frost and icing, acid rain, El Nino, melting of glaciers, global warming and climate change are listed as climatic and meteorological disasters. River floods, pollution of rivers, floods and destruction of dams, pollution of lake waters, high tide can be examples of hydrographic disasters, while erosion, forest fires, outbreaks caused by animals, insect invasions and grasshopper invasions are biological disasters.

Natural disasters are the most common type of disasters. The 1815 eruption of Mount Tambora in Indonesia, Chile earthquake of 1960, 2010 Pakistan flood disaster, drought in Namibia in 2013 and Guangdong storm of 2013 are examples of natural disasters worldwide. 30% of the natural disasters that occurred in the past century consist of floods, followed by storms with 29%, epidemics with 11% and earthquakes with 10%. Between 1900 and 2008, 55% of the human population in the world were affected by floods, 12% by storms, 2% by earthquakes, while 45% of the population died of drought, 26% of epidemic diseases, 14% of flood and 8% of earthquakes (Erkan, 2010, p.37).

Human-caused disasters do not have a cause-and-effect relationship with nature, and they occur due directly to human influence. In human-caused disasters, the human activities that lead to disasters may be accidents that occur during nuclear, biological, chemical experiments, as well as transportation accidents, industrial accidents and accidents caused by overcrowding. Moreover, immigration, which has come to the agenda with the increase in the number of immigrants in recent years, is accepted as a human disaster (Disaster and Emergency Management Presidency (AFAD), (afetacil.gov.tr). Examples include the ammonium nitrate explosion of 1947 in Texas City, carbon monoxide poisoning in Afghanistan in 1982, accidental oil spill into the sea in Spain in 1985, and the 1986 accident at the Chernobyl nuclear power plant in Ukraine. It is also considered that most natural disasters (e.g., global warming,

landslide, erosion, flood, etc.) are actually human-induced or accelerated due to human neglect.

Turkey is under great risk in terms of both natural disasters and human-induced disasters due to its geological, topographic, meteorological structure and geopolitical position. Factors such as the fact that most of the country's territory is an earthquake zone as well as excessive rainfall especially in certain areas pose a risk for natural disasters, while the geopolitical position of our country, the internal disturbances in neighboring countries, forest fires occurring frequently, industrial plants growing rapidly and in an unplanned manner and nuclear plants located in nearby countries and planned to be built in our country are increasing the likelihood of human-induced disasters (Özşahin, 2013).

According to the AFAD's information inventory, the most common natural disaster in Turkey is landslide with 45%, followed by earthquakes with 18%, floods with 14% and rockfall with 10%. Even though landslide is the most common type of disaster, the type of disaster that caused the most damage is earthquake with 55% (Gökçe, Özden & Demir, 2008). For this reason, the first thing that comes to mind with regards to disasters in Turkey is earthquake. The earthquake of 17 August 1999 in Marmara Region led to massive moral and material damage, and deeply saddened our nation (Durduran & Geymen, 2008). On the other hand, the population movements of the five million people who have taken refuge in Turkey and usedthe country as a transit zone due to the internal turmoil in Syria and its surrounding countries, as well as the accompanying problems, in the last ten years have had as much effect as the problems created by natural disasters. As a matter of fact, the reflections of this effect not only on Turkey, but on the whole world will come out more clearly in near future.

So, what are the common outcomes of the afore-mentioned disasters in the world and the ones in Turkey? Does disaster bring out the same conclusion in every geography as the geography we live in is a decisive factor in the formation of disaster, its process, intensity and type? Many explanations can be made and claims can be put forward in answering this question (such as the development level and social structures of countries, etc.). However, after every disaster encountered, there might be losses of life and settlements, emergence of psychological traumas and epidemics, disruption of daily activities of the people, deterioration of economy and social infrastructure, delay of the economic development process of the country and the region, difficulties in developing the disaster area by its own means and need for aid (Yilmaz, 2003). For this reason, being prepared for disaster should be in the duty and responsibility of the individual as much as the obligation of the state at the national level. In fact, according to Şahin and Pehlivan (2007), the individual should in fact be taking the measures, while the state is the element that should play a supporting role in the event of a disaster. As a result of their studies, many researchers have emphasized the fact that individuals and society need to be educated and informed in order to minimize the effects of disasters (Başıbüyük, 2004; Demirkaya, 2007; Ergünay, 1996; Öcal, 2005; Taş, 2003)

Individuals' behaviors regarding the ability to cope with unforeseen events, such as disasters, are determined by their level of preparedness, knowledge and awareness. In

particular, determining the students' level of knowledge about disasters and designing activities to increase the level of knowledge in this regard will contribute to the social disaster management. The aim of thisstudyin this regard is to determine the level of knowledge and awareness of secondary school students regarding basic disaster consciousness. There are studies on disastersin different working groups and areas (e.g., earth sciences, health, management, education, etc.). The general tendency observed in the literature in the field of education has been in the direction of determining the perception (Coşkun, 2011; Aydın, 2010) and the level of the knowledge (Özgüven, 2006; Güven and Güven, 2009; Buluş-Kırıkkaya, Çakın, İmalı and Bozkurt, 2011; Özgen, Ünaldı, and Bindak 2011; Bozyiğit and Kaya, 2017) of the students about the disaster and preparing a program related to the disaster and measuring the level of impact (Ronan and Johnston, 1999). The disaster phenomenon has been studied and investigated as a phenomenon covering events occurring in relation to only natural factors, meaning that human factors related to disastershave not been sufficiently taken into consideration. For this reason, it is believed that a comprehensive overview of the disaster within the scope of this study will give a new dimension to the studies to be carried out in the literature.

Methods

This study was designed according to the case study technique from qualitative research methods. McMillian (2000) describes case studies as a method in which one or more phenomena, settings, programs, social groups, or other interconnected systems are examined in depth. In researches, case studies are used to describe and view the details that create a phenomenon, to develop possible explanations for a certain phenomenon, and to evaluate a phenomenon (Gall, Borg and Gall, 1996). The aim of this study was also to evaluate a phenomenon. Interview technique was used to collect data in the study. The interview technique is a data collection tool that helps reveal what people think and why, what their feelings, attitudes and emotions are and what motivates their behaviors (Ekiz, 2009: 62). In the interview technique, interviews conducted in structured interview form lasted 20-25 minutes on average and were recorded. In order to ensure the reliability of the research data, the interviews were read to the students after they were transcribed. The data were then analyzed via descriptive analysis method, through which the themes and codes were determined from the views of the students. The responses of each student were given the codes S1, S2, S3... These codes and themes, analyzed in the findings of the study, were also supported with the examples from student views from time to time.

Data Collection Tool

The interview form for the awareness of the disaster phenomenon of the students used in the interviews made within the scope of the study was developed by the researcher and given the final form by taking the views of two teaching staff specialized in the geography field and a geography teacher. In the first part of the two-part form, there are questions that describe the personal characteristics of the students and in the second part there are 9 questions prepared for the purpose of the study. In the formation

of the eight questions, the following table of specifications based on the content was determinant (Table 1).

Table 1
Table of Specifications

Theme	**Question No**
Definition of disaster phenomenon	1,2
Disasters seen in Turkey and in the world	3, 4, 5
Ways to learn about disaster	6
Disaster-related measures	7,9
Institutions and organizations involved in disaster management	8

Study Group

The study group was composed of fifty students attending the secondary education institutions in Konya. The interviews were conducted with the students voluntarily participating in the study from four schools selected via convenient sampling method, and the process was carried out through appointment. The average age of the students who participated in the study was 18. The number of girls and boys in the study group was 27 and 23 respectively. 18 of the students in the study group stated that they had not experienced any disaster. 90% and 10% of the students (32) who stated that they had experienced a disaster listed earthquake and flood, respectively. It was also seen as a result of the interviews that all the students in the study group (f.50) had not attended any seminars, training programs or conferences related to the disaster.

Findings

1. In the interview conducted in order to reveal how the disaster phenomenon was defined by the students in line with the aim of the study, the students were asked the question "What do you think disaster is? Can you define it?". This question was answered by all the students and the answers were analyzed in Table 2.

Table 2
Analysis of students' responses to the definition of disaster phenomenon

Theme	Phenomenon	Frequency
Natural	Causing great damage	21
Phenomenon	Leading to loss of life and property	15
	Occurring unexpectedly	7
	Occurring spontaneously	5
	Bringing together economic problems	2

When Table 2 is analyzed, all the students in the study group perceived disaster as a phenomenon and defined them with the concepts of "causing great damage" (f. 21) and "leading to loss of life and property (f.15). This situation will be better understood with the students' responses in the interviews: "S9: A disaster is a massive destructive event that occurs in nature and affects human life; S26: Disaster is an event that causes great damage on earth; S3: These are events that lead to loss of life and property in the nature,

such as earthquakes, floods, volcanic eruptions; S23: Disasters are extreme natural events that cause loss of life and property." The total number of students (f. 14) who defined disaster as "an unexpected, spontaneous event that brings together economic problems" is quite few compared to the cases that cause great damage and lead to loss of life and property (f.36). In the following definitions "S30: Disaster is a destructive natural event that happens unexpectedly in a certain region; S21: Spontaneous supernatural events are called disasters", students emphasized only these unexpected and spontaneous events. On the other hand, in the determination of the "natural phenomenon", the perception of disaster as a natural phenomenon is in question in the majority of students who responded to this question (f. 44). As it is understood from the students' responses, disaster, whether it causes damage, leads to loss of life and property or happens unexpectedly, was defined as a natural phenomenon by the students as seen in Table 2.

2. In the interview conducted to reveal what types of disasters the students knew in line with the aim of the study, students were asked "Can you list the types of disasters you know?". This question was given more than one responses by all the students. The answers of the students were analyzed in Table 3. The number of students giving the responses of storm (4), drought (2) and typhoon (1) appears to be very few, even though the number of students giving the response of earthquake is (f.50).

Table 3
Analysis of Students' Repsonses to Types of Disaster

Theme	Phenomenon	Frequency
Types of Disaster	Earthquake	50
	Flood	41
	Avalanche	38
	Landslide	35
	Tsunami	27
	Fire	18
	Erosion	18
	Hurricane	8
	Tornado	7
	Volcanic Eruptions	7
	Storm	4
	Drought	2
	Typhoon	1

3. In the interview conducted to investigate the types of disasters the students had encountered, whether they were aware of the fact that they may encounter, and where the disasters had been or could be seen in Turkey, the students were asked "What are the types of disasters that you have encountered in your immediate vicinity?" in the third question, "What are the types of disasters that youare likely to encounter in your immediate vicinity?" in the fourth question, and "What are the types of disasters that are likely to be seen in Turkey?" in the fifth question. All the students answered the third

and fifth questions, while only 47 responded to the fourth question. The answers of the students were analyzed in Table 4.

Table 4
Analysis of Students' Repsonses to Occurance of Disaster

Theme	Phenomenon	Frequency (f)
Disasters you have encountered in your immediate vicinity	Earthquake	47
	Flood	3
Total: 50		
Disasters that are likely to occur in your immediate vicinity	Earthquake	31
	Flood	22
	Fire	18
	Drought	16
	Erosion	3
	Landslide	1
	Pothole	1
Total: 47		
Disasters that are likely to be seen in Turkey	Earthquake	46
	Flood	32
	Landslide	29
	Fire	9
	Erosion	8
	Drought	7
	Avalanche	7
	Storm	5
Total: 50		

When the Table 4 is analyzed, it is seen that the students in the study group listed earthquake and flood for the types of disasters they had encountered in their immediate vicinity, and earthquake, fire and flood for the disasters that they might encounter in their immediate vicinity. The reasons for these perceptions were partly explained in the statements of the students. It is understood that the types of disasters that occurred in the immediate surroundings of the students were perceived and explained due to fault fractures, climatic conditions and karstic occurrences in the following examples: S20: I have encountered earthquakes and floods where I live. The possibility of an earthquake is low in Konya since it is not located on a seismic belt, but there are places nearby with thermal springs. In this case, it's a sign that these places are fractured. There was a slight quake, but it was like a truck passing by while sitting on the balcony. S33: It does not rain much in Konya and its surroundings as you know. There are not many forested lands anyway and there is almost no moisture in the air. For this reason, glasses and bottles left in picnic areas can lead to fire and they already have. S45: My grandfather used to tell us that the stream passing through our current neighborhood used to overflow. There is still a creek bed, but it never overflowed, but it will if it rains a lot. S7: I am from Karapınar, Konya and we do not have water in the fields, so we open wells to find water. When we pull out the water, the ground usually subsides, and potholes occur. If the shepherd and the animals do not notice it, they perish.

Table 4 also indicates that the types of disasters that have been / are likely to be seen in their immediate vicinity are the same (earthquake and flood) as the disasters that have been /are likely to be seen in Turkey. It is seen that students partially explained the reasons whyearthquakes and floods more frequently occur in Turkey. S21: Earthquakes, floods and landslides are most frequently seen in Turkey because of the geological structure, soil structure and insufficient afforestation. S3: Turkey is a newly formed country, which shows that it constantly moves. That's why there are still earthquakes. Since we are living in Konya (i.e. a part of Turkey), there is a high possibility of an earthquake here. S1: I think the most likely disaster in Turkey is flood because of climate conditions. Think about it. Spring season is three months, but earthquakes do not happen every day on earth. S50: Everything can be seen in Turkey except tsunami. There may be landslides in the Eastern Black Sea, fires in Marmara, drought in Central Anatolia. This situation of Turkey is due to its own characteristics.

4. In the interview conducted to investigate the students' ways to obtain information about the disaster in line with the aim of the study, the students were asked "Can you list the ways to get information about disasters from the options given to you (school, media, family and immediate surrounding)?" in the 6th question. The answers of the students were analyzed in Table 5.

Table 5
Students' Sources of Information on Diasters

	First	Second	Third	Fourth
School	24			
Media		15		
Family			8	
Immediate Surrounding				3

When Table 5 is analyzed, it is seen that school (f. 24) leads the way in students' sources of information on disasters, while immediate surrounding (3) ranks fourth.

5. In the interview conducted to reveal what students knew about disaster prevention in line with the aim of the study, the students were asked "Do you know the measures that can be taken against disasters? Can you explain them?" in the seventh question. It was observed in the interviews that all the students gave more than one answers to the measures to be taken against the disasters only in terms of the types of natural disasters. The answers given were analyzed in Table 6.

Table 6
Analysis of Students' Responses to Disaster Preparedness

Theme	Phenomenon	Frequency (f)
Flood	Afforestation	13
	Set construction	5
	Dam construction	5
	Prevention of housing on creek bed	3
Fire	Issuance of ban on the use of flammable substances	9

	Development of extinguishing and cooling systems	4
	Issuance of legal sanctions	7
Earthquake	Use of solid and durable materials in building construction	29
	Housing construction on areas suitable for settlement	9
	Building and housing inspections	7
	Earthquake proofing the household goods	6
Erosion	Afforestation	24
Drought	Cautious use of water sources	7
	Prevention of excessive irrigation	4
Education	Creating environmental awareness	9
	Raising people's awareness	6
	Providing information on disasters	4
	Conducting disaster drills	3

When Table 6 is analyzed, it is seen that all the students answered this question by giving one type of disaster as an example, 28 of the students responded to this question by taking into consideration more than one type of disaster and the earthquake-related measure (f.51) was expressed the most. In this theme, students stated "use of solid and durable materials in building construction (f.29) and housing construction on areas suitable for settlement (f.9)" as the two most repeated measures. In the case of erosion, students stated that afforestation (f. 24) was the only erosion preventive factor, while they listed afforestation (f.13) as only one of the preventive factors in the case of flood. In the case of fire, the students explained that legal sanctions (f. 9) and penalties (f. 7) were measures to prevent fires. In total, even though less than half of the study group proposed "creating environmental awareness (9) and raising people's awareness (6)" as preventive measures in the case of education, the number of students who proposed "providing information on disasters (4) and conducting disaster drills (3)" were quite few.

6. In the interview conducted to reveal whether the students knew about the institutions and organizations they could call in case of a disaster in line with the aim of the study, the students were asked "What are the institutions and organizations involved in disaster managementin our country? Can you write down the names?" in the eighth question. During the interviews, it was observed that 18 of the students responded to this question as "I do not know", while 32 students gave more than one answers. The answers of 32 students were analyzed in Table 7.

Table 7
Analysis of students' responses to the institutions and organizations to be called in case of disasters

Organizations involved in disaster management	Frequency
Turkish Red Crescent	28
AKUT-Search and Rescue Association	20
TEMA- The Turkish Foundation for Combating Soil Erosion, for	15

Reforestation and the Protection of Natural Habitats	
AFAD- Disaster and Emergency Management Presidency	10
Gendarmerie	5
Police	2

According to Table 7, in the case of disasters, the students listed Red Crescent as the first institution they would call, while they would call the police as the last option.

7. In the interviews conducted in line with the aim of the study, the students were asked "In the case of a disaster of the same magnitude, which countries are likely to be most and least effected in your opinion?" in the ninth question. All the students (f.50) in the study group answered this question. Students ranked 11-13 countries which would be affected in their opinion from the most to the least. Table 8 and Table 9 show the top five countries that are likely to be least and most affected, respectively, in accordance with students' responses.

Table 8
Top five countries which are likely to be least affected by a disaster of the same magnitude according to students

Countries	Frequency
United States of America	48
Japan	45
United Kingdom	39
Russia	36
Germany	29

When Table 8 is analyzed, it is seen that that four out of five countries which are likely to be least affected by a disaster are located in Europe, according to students' responses. The financial resources of the countries play an important role in the emergence of this ranking, as understood by students' following responses: S27: I listed these countries because I consider them to be prepared in the event of a disaster. S35: The United States came first in my list since I think disaster legislation is more deterrent in the US. S45: I constantly see in the news that there are earthquakes in Japan and people do not die. S9: As developed countries have a lot of monetary resources, they can do more about the measures.

Table 9
Top five countries which are likely to be most affected by a disaster of the same magnitude according to students

Countries	Frequency
India	47
China	45
Afghanistan	37
Pakistan	32
Somalia	29

When Table 9 is analyzed, it is seen that that top five countries which are likely to be most affected by a disaster are located in Asia, according to students' responses. The financial resources of the countries play an important role in the emergence of this ranking, as understood by students' following responses: *S12: In this ranking, I took into account the population of countries because the more people live in a country, the higher the death toll is in a possible disaster. S31: There are so many earthquakes in these countries, so the biggest death toll can occur in these places. For example, Afghanistan is full of adobe houses, which are likely to be demolished in a possible quake. S13: I think Somalia will be the most affected country. We watch on TV that aid goes to these countries from Turkey. They are very poor. S5: We remember what we have seen on television. We always hear stories of earthquakes in India, floods in Afghanistan. That is because they are very poor and crowded.*

In addition, students ranked Turkey as the country that can suffer medium damage. The reasons for the students to see Turkey in the middle are reflected in their following responses: *S3: Turkey has lost much in the past. I think it is taking more precautions now, such as DASK (Natural Disaster Insurance Institution). S19: Buildings in Turkey are stronger than the previous ones, and there is no ocean in our country and therefore no hurricanes. S50: Turkey is a country that is constantly evolving. Of course, the losses of the first years of the Republic will not be the same as those of the present. For example, they say August 17 earthquake will happen once again in ten years, and no one is panicking. Why? I think the state and citizens are more conscious of the situation.*

Conclusion

As a result of this study aimed at revealing the awareness of the students about the disasters, it was seen that the students perceived the disaster phenomenon as a "natural phenomenon that causes great damage and leads to loss of life and property" in the terminological sense. The disaster phenomenon is perceived as a "natural phenomenon that leads to death and loss of life" in the relevant studies in literature (Tokcan and Yiter, 2016; Cin, 2010). It is thought-provoking that students used the definition of event and phenomenon arising only from natural factors in the terminological sense and ignored the human factors. In fact, it is wrong to limit the factors that cause loss of life and property to natural phenomena only. As a matter of fact, 9000 people died in the explosion in the Nuclear Power Reactor in Chernobyl, known as the first nuclear accident of the 20th century, and the genetics of many people were affected, as well. In fact, this human-induced disaster caused about five times more human deaths compared to the Daulatpur-Saturia tornado in Bangladesh, which took place in the same year.

In this sense, it is useful to examine existing curricula, textbooks and media reports in terms of the factors affecting the definition of disaster excluding the human factors both in this study and in the studies conducted in literature. The 2005 Geography Course Teaching Program includes the topic of disaster in secondary education (Ministery of Education, MEB 2005). In the program, the subject is taught to the students in the 9th, 10th, and 11th grades. Besides, both natural disasters in the 9th grade and human-caused disasters in the 10th grade are covered under separate headings in the curriculum. Even the coverage of "Climate Changes, Asylum Seekers and

Refugees, Extreme Urbanization, Poverty and Hunger" issues under the topic of human-caused disasters seems sufficiently explanatory.

When the geography textbooks considered as the appliers of the geography teaching program are examined, it is seen that human-caused disasters are included in the 9th and 10th grades under the same titles. The textbooks do not emphasize human-caused disasters as much as natural disasters while covering the issue. In the study conducted by Sezer and et al. (2017), of disasters covered in the social studies textbooks, it was found that not all components related to the disaster phenomenon existed in the books and that there were significant deficiencies in this issue. Given the coverage of disasters in media, it is seen that natural disasters (earthquakes, floods, landslides, storms) are often the subject of main news bulletins, while human-caused disasters (such as refugee migrations, environmental pollution and air pollution) are covered and evaluated as a specific issue other than a disaster. Despite the fact that media is an important factor in the structuring of the cognitive processes of students related to the occurrence of disasters, this separatist point of view leads to important conceptual deficiencies about disaster phenomenon. As a matter of fact, the fact that students point to the media (f.15) as their second source of information when questioned about the information sources related to the disaster within the scope of the aim of the study, supports this outcome. According to Özelmacı's (2016) study on the middle school students' preparedness for disasters, media (28%) was also detected as the second source of information after teachers.

In this study, students' exemption of human factors in the definition of disaster revealed their deficiencies at the point of expressing disaster types. Students were unable to give an example or disaster type to human-caused disasters during all the interviews. While explaining disaster types as in the definition of disasters, the students took only natural factors into consideration and exemplified natural disaster types. For this reason, as shown in Table 3, disaster types were limited to "earthquake, flood, avalanche, landslide, tsunami, fire, erosion, hurricane, tornado, volcanic eruption, typhoon". The two types of disasters that students had encountered and were most likely to encounter were expressed as earthquakes and floods in the interviews. The statements of students who thought that earthquakes and floods were caused by factors such as geological age and climate conditions of Turkey were correct but not exact. Undoubtedly, the effects of earthquake and flood disasters on both Turkey and the world were decisive in identifying them as the two leading disaster types.

In the sample of Turkey, close to 6000 earthquakes were recorded during the course of the current study (6 months), according to the data of Kandilli Observatory and Earthquake Research Institute, and floods occurred in Edirne, Istanbul and Rize provinces. Again, in the sample of the world, at least 248 people died in the magnitude 7.1 earthquake that caused massive demolitions in Morelos State, Mexico on September 20.09.2017. According to the AFAD data, in 2014, natural disasters totaled 19,214 deaths, while earthquake led the way in death toll (9640) and the flood ranked third (1751). (www.cnnturk.com). In this context, it was expected for the students to list

earthquake and flood in terms of disaster types that are likely to be seen in their immediate surroundings in the sample of Turkey during the interview.

On the other hand, it is upsetting that even though Central Anatolia region, which is ranked first in terms of the occurrence of erosion in Turkey, is the living environment of the students in the study group, it was expressed by only one student. This is a clear indication that students do not know about disasters that have happened or may happen in theirregion. Özelmacı (2016) also revealedin his study with middle school students that the students could not exemplify disasters in their living environment but mostly exemplified disaster types from the course book. When the answers of the students related to disaster types in the world sample are analyzed, the present situation is not different from the sample of Turkey. Indeed, Table 4 clearly shows that they limited disaster types that are likely to be seen around the world to "Earthquake, Flood, Storm, Forest Fire and Avalanche".

Creating disaster awareness and encouraging positive behaviors in every part of the society is one of the ways of being least affected by the threats that may occur and minimizing the loss of life and property. It is an important issue to determine disaster preparedness level as well as factual information about the occurrence of disasters in creating disaster awareness in students. Disaster preparedness is defined as the process of continuous and sustainable activities such as planning, training, exercises, early warning systems, emergency supply stocks, informing the public and raising awareness before a disaster in order to intervene quickly and effectively during disasters in time. During the study, students were asked what they needed to do before, during and after the disaster to determine their level of preparedness. The lack of information of students on disaster definition and disaster types led them to list measures that could only be taken in terms of natural disasters.

On the other hand, Table 7 indicates that students did not know the taxonomy (before, during and after a disaster) of the disaster process. In order to clarify the earthquake example, in Table 7 the students listed four items to prepare for earthquake, namely “use of solid and durable materials in building construction, construction of residential buildings on areas suitable for settlement, building and house inspections and earthquake proofing the household goods”. In contrast, preparations before, during and after the earthquake are different from each other. A study conducted by Ersel, Aksay and Kıyan (2009) in the field of emergency medicine in Turkey to determine the level of preparation and education for disasters revealed that the individual and institutional capacity was insufficient.

In a study investigating the views of a total of 40 elementary school students about earthquakes, Şimşek (2007) found that most of the students did not know the ways to protect themselves from earthquakes. In addition, the fact that most students did not respond (f.18) to the question of which institution or organization should be called during the disaster is another important indicator of the lack of information in this regard. The answer of "TEMA, gendarmerie and police" (f.22) among the students answering this question (f.32) reveals that they were also mistaken in their answers

(Table 7). Because calling these institutions and organizations during a disaster is not the right answer.

The extent of the damage caused by disasters varies from country to country. The level of development of the countries is one of the factors which affect the general course in case of a disaster. In the interviews, the students were asked about the countries which were likely to be least and most affected in case of a disaster of same magnitude. When students' answers were analyzed (Table 8), they listed the United States, Japan, the United Kingdom, Russia and Germany as the least affected countries in the event of any disaster, and India, China, Somalia, Pakistan and Afghanistan as the most affected countries. It is understood that the students tookinto account the development level of countries. According to the 2013 disaster report, in disasters occurring in 2012, 6 out of 10 countries in terms of death toll were undeveloped or underdeveloped countries, while the other four emerged as middle-developed or developed countries (www.yildiz.edu.tr).

At this point, the increase in casualties is not due to an increase in disasters, but rather to the fact that disasters can turn more catastrophic. In the case of a catastrophic disaster in China and India, which account for one third of the world's population, the loss due to the high number of people is not the same as in Alaska and Canada. On the other hand, disaster strategies changing from country to country play an important role at the point of loss of life. The fact that an earthquake of similar magnitude can cause Afghanistan to be destroyed while it does not cause any loss of life in Japan can be answered not with the population densities, butwiththe nationwide disaster strategies. At this point, it would be a more correct approach to develop local solutions rather than universal solutions to reduce the size of losses caused by disasters. On the other hand, in the sample of Turkey, the reasons behind the fact that the answers of the students who ranked Turkey's level of damage from disaster at the middle level are noteworthy. Students think that in the natural disasters experienced in recent years, there has been less loss of life and property than in the past. This is true in terms of statistical numbers. However, making a generalization from a single example of a natural disaster is a misperception on this issue.

Considering the results of the study, it is concluded that the disaster awareness level of the students is low. For this reason, state and private institutions, schools, media and families should cooperate to raise awareness. Regional disaster education programs should be prepared, and students should be informed about the kinds of disasters they can encounter in the region they live in. These trainings at the regional level should be reflected in curricula and textbooks. Perhaps the most radical suggestion in this regard is the inclusion of an independent lesson entitled "Disasters and Their Management" in the primary and secondary school curriculum and the elimination of deficiencies related to disaster education in regional, national and global scale.

The media should play a more effective role in disaster education and pay attention to the terminology associated with the disaster. It may be a good idea to broadcast public service announcements during the hours when students are at home. In addition, local and regional disaster topics can be taught through radio channels. Teachers taken

as role models by students who spend most of their time in school also have important responsibilities in disaster education. Teachers' knowledge of this subject will be reflected in students before everything else. Teacher training should also be included in school programs for this reason. Finally, it is suggested that families should inform their children about disasters, give responsibility to all the members of the house for what needs to be done before the disaster, and to conduct a small drill for during and after the disaster.

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Biographical Statements

Adnan PINAR is is an associate prof at the faculty of educationin Necmettin Erbakan University. His research focuses are about curriculum, textbooks, measurement, methodologies in geographical education.