

## TEACHING STUDENTS ABOUT DISASTER PREPAREDNESS: “IF YOU ARE PREPARED, YOU NEED NOT FEAR”

**Muhaedin Bela**

Institute of Emergency Preparedness, N. Macedonia, bela66@gmail.com

**Zijavere Keqmezi-Rexhepi**

University “Kadri Zeka” Gjilan, Kosovo, zijaverek@hotmail.com

**John Fisher**

Utah Valley University, USA, john.fisher@uvu.edu

**Abstract:** Because of the current conflict and refugee situation in Ukraine, students may be concerned about their own safety in a world of turmoil, where there seems to be no end to the calamities they face. Life-coach Mark Shepherd uses the motto “If you are prepared, you need not fear” in leadership training. This theme is appropriate when teaching students about disasters and their impacts. This paper presents a curriculum and provides a list of resources that teachers can use in instructing students about disaster preparedness and evacuation readiness. It is divided into five topics or lessons. First, what is the nature and causes of crises, whether human-caused or natural disasters? Many disasters result from anthropogenic causes, whether because of the intersection of humans and nature or because of man’s carelessness and ignorance. On top of this war, greed, and power can play a role in creating crises and causing harm to humankind and the environment. Moreover, nature itself causes calamities, with good or bad results, that are short-term or long-term. Second, what are the social-economic, psychological, and physical impacts of the disasters and who are the most vulnerable populations? Studies have shown that disasters impact all ages, although differently. The effects are great on children and youth. This can be a concern and worry for young people, causing angst and upset in their lives. Harm can result that is socio-economic, psychological, and physical. Third, how to distinguish truth from falsehoods about disasters? Social media and the traditional news media can provide helpful but sometimes misleading information about disasters. They should provide information that helps people deal with disasters, but often the information they provide is overly dramatic and exaggerated to pique public interest and build audiences. Citizen reporters and witnesses on social media may only know half the story and so tell half-truths. Governments, celebrities, and globalists often have their own agendas and spread disinformation to achieve their aims. Fourth, what roles can individuals, communities, governments, non-profit organizations, and media play in providing relief from disasters? Young people can have a great impact in providing relief to people in disasters. They can often join with local communities and other individuals to help. This paper not only describes the roles of first responders, communities, and governments in providing relief, but also the kinds of things youth can do. Finally, how can individuals and households prepare for disasters and evacuations? The best remedy for dealing with the fears of young people may be to show them how to prepare themselves and their families for disasters and evacuations. Current studies about readiness are reported and concrete suggestions are made that can help individual and community preparedness and resilience.

**Keywords:** disaster preparedness, emergency evacuation, teaching resilience, high school students, university students

### 1. INTRODUCTION

Because of the current conflict and refugee situation in Ukraine, students and young people may be concerned about their own safety. Life-coach Mark Shepherd uses the motto “If you are prepared, you need not fear,” which is appropriate when teaching students about disasters and their impacts. This paper presents a curriculum and provides resources that teachers can use to instruct students about disaster preparedness and evacuation readiness. Lesson 1 provides information about the nature of disasters and their causes. Lesson 2 describes the impacts on disasters. Lesson 3 focuses on media literacy and distinguishing between truth and falsehoods about disasters. Lesson 4 gives suggestions of what young people can do to help in disaster situations. Finally, lesson 5 provides guidance on how to prepare for crisis situations.

### 2. NATURE OF DISASTERS AND CAUSES

Lesson 1 of the curriculum is the study of the nature of disasters and their causes. The purpose of this area of study is to make students aware of the breadth of crises, not to make them afraid of what is happening in the world. By being knowledgeable about disasters, they can better be prepared to take action that will prepare themselves and others to deal with these situations.

Disasters fall into two major categories: natural and human-caused events. Calamities are often made bigger because of a chain effect - one disaster becomes bigger and sets off a different and potentially more serious catastrophe. Such was the case when a tsunami caused by a 9.0 earthquake off the eastern shore of Japan created a tsunami that struck Honshu Island, killing over 18,000 people. The tsunami also hit the Fukushima nuclear reactor, causing the meltdown of three reactors and the leakage of radioactive material into the atmosphere. Three workers died in the explosion of the reactor and three were hospitalized with radiation poisoning (BBC, 2021).

Many disasters result from anthropogenic causes, whether because of the intersection of humans and nature or because of man's carelessness and ignorance. On top of this war, greed, and power can play a role in creating crises and causing harm to humankind and the environment.

In a list of the 20 worst man-made disasters, six were chemical including one where fertilizers and pesticides leak into water, three were oil spills, four were garbage related, one in the Pacific ocean and one a massive city-size dump of e-garbage, two were nuclear reactors, one was accidentally dropping nuclear bombs, another was nuclear fallout, another was drilling that caused an earthquake and volcanic reaction, and finally a disease from mercury poisoning (Wright, 2013). Not in the list are catastrophes created by conflict and warfare, terrorism, and other criminal acts. Added to the latter are man-made disease and biological and chemical weapons. The war in Ukraine is worsened by the human suffering caused by the evacuations. Within two months a third of the population became homeless and entered other countries as refugees. Still others were forced from their homes, but remained in the country (BBC, 2022).

Nature itself causes calamities, with good or bad results, that are short-term or long-term. Some of these are handled well and lives and property are protected. Other disasters are worsened by the human ignorance and incompetence. Sometimes good meaning responders create a second wave that worsens the conditions of the population caused by the disaster itself - the first wave. A third wave occurs when the media, politicians, and sight seers arrive on the scene further stretching the limited resources meant for the victims of the disaster.

Aktas (2020) lists nine major types of natural disasters ranked from least to most dangerous. They are rated on the basis of frequency, distribution, area of impact, unpredictability, power, and duration. Number nine is avalanches with a total score of 22. Number eight is landslides with a score of 24. Number seven is tornadoes with a score of 34. Number six is tsunami which comes in with a total score of 37. Number five is volcanic eruptions at 40. Number four is wildfires with a score of 42. Number three is cyclones or hurricanes with a score of 43. Number two is earthquakes scoring at 45. And number one is floods with a score of 48.

### **3. SOCIO-ECONOMIC, PSYCHOLOGICAL, AND PHYSICAL IMPACTS**

The second lesson describes the social-economic, psychological, and physical impacts of disasters, particularly as it impacts the most vulnerable populations. While studies have shown that disasters impact all ages and demographics, their effect is greater on the young, frail elderly, individuals with disabilities or language barriers, pregnant or nursing mothers and the impoverished. The purpose of this unit of study is to allay student fears of disasters by making them aware of their potential impacts. Because people fear the unknown, it is better that students be informed of the impact of disasters.

Over 1800 people died during Hurricane Katrina in New Orleans, USA. These people were primarily poor without the means of evacuating or they refused to evacuate because they had been through hurricanes before and survived (Fisher, 2013). A study of children and young adults who were forced to leave their homes showed that human-made disasters may be more traumatizing than natural disasters (Myles et al., 2018). Children who evacuated because of Hurricane Katrina (2005-2006) were compared to young-adult refugees in Germany (2015). The refugees were more likely to have been hurt or seen others who were injured or killed. Refugees were also more likely to have been separated from their families.

In Australia in February 2014, bushfires spread into an open cut brown coal mine, causing a fire that lasted 45 days that increased levels of carbon monoxide and particulate matter into the air. Residents in Morwell and surrounding towns relocated or stayed indoors wearing masks. A study (Berger et al, 2018) examined the impact on teaching staff at a local school. Not only did they face challenges dealing with their own reactions and family situations, but they also dealt with the trauma of school children over a long period of time. Family relations deteriorated during the event that also impacted the recovery of the children and the burden placed upon school staff. Teachers would have been better prepared for the situation if they had had prior training in handling trauma in children.

In 2015, while 19 people died when a dam collapsed at the Samarco mine in Brazil, another 900 families suffered health-related effects (Andrade et al, 20221). Approximately 74 percent of the population suffered from depression and anxiety, followed by pain and discomfort. Before the disaster, an estimated one percent suffered from the disease. This rose to 23 percent for anxiety/depression and 11 percent for pain and discomfort.

In many developing countries the loss of electricity and other power sources may be common. However, in the United States electrical power was one constant that people could rely on. But no more. Electrical brownouts in the state of California and the major loss of electricity in Texas have created concern about the reliability of the electrical grid. This is a particular concern in colder climates and during the winter. Further, terrorist threats and the danger of an electromagnetic pulse (EMP) have heightened fears. In California, recent brownouts are a result of a state law that requires 33 percent of electricity produced in California be from renewable sources, like wind turbines or solar panels (Henderson, 2020). In Texas, over reliance on alternative energy caused electrical failure when the wind turbines couldn't operate in the cold (Epstein, 2021). Fisher (2007) describes how an ice storm in a Midwest town in the USA caused an electrical failure for up to seven days in the midst of freezing weather. Many people were without heat and food supplies. Roads were impassable and students were stranded in the local university dorms. The Missouri Army National Guard went door-to-door to check on residents and a shelter was set up in the community recreation center.

During the COVID-19 pandemic, Lindquist et al. (2022) found paramedics faced similar challenges in balancing personal and family needs with their duties as frontline caregivers. While their families were locked down for many months and children were forced to wear masks, these first responders confronted the effects of the disease daily by treating and transporting the sick and dying. Interviews found that workers were split evenly in three camps: those who denied the seriousness of the disease, those who went to work afraid, and those who accepted the situation and did their jobs without complaint. The responders were unprepared for the challenges and overall mental health suffered. In the two fire stations in the study sample, no one caught COVID from their patients and there were few absences.

#### 4. DISTINGUISHING BETWEEN TRUTH AND FALSEHOODS

The purpose of Lesson 3 is to help students become more media literate so they can distinguish truth from falsehoods about disasters. Social media and the traditional news media can provide helpful but sometimes misleading information about disasters. They should provide information that helps people deal with disasters, but often the information they provide is overly dramatic and exaggerated to pique public interest and build audiences. Citizen reporters and witnesses on social media may only know half the story and so tell half-truths. Governments, celebrities, and globalists often have their own agendas and spread disinformation to achieve their own aims.

In the early days following Katrina, the media reported a city overwhelmed by the devastation of nature, human misery, and crime. A multitude of reporters besieged the city. Each media report re-emphasized a city suffering from a catastrophe. The report of atrocities in New Orleans shocked the nation and the world. Audiences heard and read about a city in anarchy and subhuman conditions in the Dome and Convention Center. However, many of the reports of violence were false and could not be verified. Reports were based on rumors several times removed from the source. For example, on September 5, 2005, the *Financial Times of London* attributed the following report to unnamed refugees: "Girls and boys were raped in the dark and had their throats cut and bodies were stuffed in the kitchens while looters and madmen exchanged fire with weapons they had looted." The report claimed that "several hundred corpses ... have been gathered by locals in one school alone." A similar report indicated that up to 300 bodies were piled in another school. Reporters from the *Times-Picayune* canoed to the school, went inside, and found no bodies (Fisher, 2016).

Much of the news coverage perpetuates the narrative that global warming is anthropogenic and that global warming is the cause of most disasters. This ignores the science behind climate change and other factors like El Nino and La Nina weather patterns (NOAA, n.d.). The debate's closed and so real reasons for disasters are ignored. For example, wildfires in California and Greece are blamed on global warming, and as a result the government does little to clear brush and dead trees that would help prevent wildland forest fires (NFPA, n.d.; Hunt, 2021).

The media tend to focus on disasters closer to home and calamities of huge magnitude. Weberling (2009) studied the effect of media coverage on fund raising following the South Asian tsunami (2004) and the earthquake in Pakistan (2005). "In the wake of these disasters, people turned to the media to find out what happened and how they could help, contributing \$1.8 billion to tsunami relief efforts, compared to \$129 million following the Pakistan earthquake." (For more information about news coverage of disasters in Pakistan, see also Zaheer, 2016.) Money followed the news coverage. Similarly, we see an oil spill close to home gets more coverage than a chemical leak elsewhere that kills more people and creates greater harm.

The COVID-19 pandemic is an example of where media focus was on deaths rather than treatment that could have prevented hospitalizations and deaths. President Trump suggested that the old malaria drug hydroxychloroquine had potential to treat COVID-19. Because it was Trump saying it, the media immediately began disparaging its use, claiming the drug lacked efficacy and safety and caused "irreversible retinal damage" and "dangerous heart arrhythmias." Used at the right dosage, neither of these claims are true (Leake and McCullough, 2022, p.56). Other

possible remedies were also ignored, while government, the media, and drug companies fixated on a vaccine. Instead of prevention and early treatment, the medical establishment has sought a cure which has proven to be ineffective in saving lives and preventing the spread of COVID-19.

### **5. WHAT CAN YOU DO? WHAT DO OTHERS DO?**

The fourth lesson describes the roles that individuals, communities, governments, non-profit organizations, and media play in providing relief from disasters. It shows that young people can have a great impact in providing relief in disasters by joining with local communities and other individuals to help. This lesson not only describes the roles of first responders, communities, and governments in providing relief, but also the kinds of things youth can do.

Stetzer (2013) provides 5 ways to get involved in disaster relief. First, prepare to help in a disaster before the disaster strikes. Second, in most cases monetary donations are more helpful than volunteers. Third, help through established, reputable relief agencies. Fourth, give to agencies already in place to minimize inefficiency and get resources to areas of need. Fifth, be informed about what is actually needed.

Young people can help with fundraising campaigns and join local volunteer agencies like the Red Cross/Red Crescent where they can be trained in preparedness and gain life-saving skills. Some of these agencies actually respond by providing needed aid after a house fire, accident, or other personal catastrophe. If these agencies don't exist, young people can work with other people in their communities to establish a network to help others. Networks are extremely important in responding to disasters, but they must be established beforehand to be effective during a disaster (Karunaratne & Gress, 2022).

In the United States, high school students can train and become part of the teen Community Emergency Response Team (Ready, 2021). During an emergency, your Teen CERT organizes volunteers, assists in evacuations, gives assistance to survivors, provides damage assessment information, provides shelter support, and assists with crowd control. A similar youth organization can be established in any community anywhere in the world.

By far the fastest and most effective means of reaching the public is Twitter. Facebook pages can be easily modified to provide disaster response information (Fisher, 2013. pp. 24-25). Young people can get involved in following disasters on social media and, if a disaster strikes at home, monitor social media and share information with response agency public information officers and the media. These connections need to be developed before a disaster happens.

Disasters are local. Response is provided by police and firefighters. Community leaders provide direction and policy for disaster planning and response. State and national governments may provide funding for recovery and training and direction for responders.

### **6. PREPAREDNESS AND RESILIENCE**

The purpose of the fifth teaching module or lesson is to provide students with the information and skills to prepare themselves and their families for disasters and evacuations. It is based on the notion that the best remedy for dealing with fear is to be prepared. Young people can have great influence in getting their families and communities to take action in planning for disasters. Community resilience (the ability to return to normal after a disaster) results from being prepared. Much of what is taught in module 4 will help students in their preparation efforts.

Ready (2022) is a U.S. government website that provides guidance for planning and preparing for disasters.

Firstly, get together with your family, friends, or household to start an emergency plan. Consider the types of disasters affecting your area, how are you going to contact one another and reconnect if you're separated, and an established meeting place that is familiar and easy for your family members to get to. Set up emergency alerts and warnings on your cell phones. Develop a plan for sheltering and an evacuation route if needed. Consider how family or household members will communicate and update or start an emergency preparedness kit.

Include in your plan any special needs of your family or household. Make assignments to assist others, considering ages, cultural and religious beliefs, dietary and medical needs, disabilities, and languages spoken. Plan for pets and service animals. Consider valuables you may take with you and insurance to cover things that might be destroyed in a disaster.

Fill out the family emergency and communication plans that are downloadable from the Ready webpage <https://www.ready.gov/plan>. Finally, practice your plan and make changes if needed. Update your plan and your emergency preparedness kit on a regular basis, perhaps at the beginning of spring and fall.

### **7. CONCLUSIONS**

The purpose of this paper has been to provide parents and instructors of young people a curriculum they can use to help youth to deal with the trauma associated with calamities. Instead of teaching young people to view crises as tragedies, the program of study provides knowledge and skills students can use to turn these events into

opportunities to problem solve and help others. By preparing and doing something useful when disasters strike, youth can overcome fears and contribute to their own safety and the wellbeing of their families and communities. “If you are prepared, you need not fear” is the mantra of this program.

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