

# **Big Bird, Disaster Masters, and High School Students Taking Charge: The Social Capacities of Children in Disaster Education**

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## **Abstract**

*Disasters affect segments of the population in different ways. Although age-based vulnerabilities place children at risk, children may offer unique capacities for bolstering disaster resilience. This paper reviews three initiatives that focus on children and disasters, including a Sesame Workshop-produced video aimed at pre-school children, an American Red Cross initiative that focuses on children in kindergarten through middle school, and a video directed at high school students as part of a student-generated initiative at a Seattle school. The authors use a matrix developed by Anderson and Woodrow (1989) to assess the extent to which these initiatives emphasize youth-based vulnerabilities and capacities with respect to physical/material, social/organizational, and motivational/attitudinal factors. The field report ends with a call for more systematic research to explore the effectiveness of disaster education initiatives that seek to educate youth.*

**Keywords:** *disaster, education, children, vulnerability, resilience*

## Introduction

2006/2007 marked the launch of the United Nations/ International Strategy for Disaster Reduction's (ISDR) *Disaster Risk Reduction Begins at School* (DRRBS) campaign, and with good cause. Children are often overlooked as a segment of the population affected by disaster events, yet the impact on this group is significant. For example, over 16,000 children died in schools that collapsed as a result of the 2005 Pakistan earthquake, and 200 children were killed during a 2006 mudslide in the Philippines (ISDR 2007). This impact extends to the institutions upon which children depend, such as childcare facilities and schools. According to Save the Children (2006), an estimated 1,100 schools along the United States' Gulf Coast were closed in Fall 2005 following Hurricane Katrina. As a result, over 372,000 children were left without a school to attend. The organization also found that 80 percent of child-care facilities in Mississippi's two hardest-hit coastal counties were damaged or destroyed. The DRRBS campaign argues that given the direct link schools have to youth, it is imperative that school safety is ensured and that the educational mission of schools includes disaster risk reduction.

While children have been studied with respect to their psychological well-being after disaster (for discussions see Drabek 1986; Phillips and Morrow 2005), considerably less attention has been given to other areas of vulnerability or the extent to which children possess capacities that may make them particularly resilient to disasters. For example, a large body of research focuses specifically on the psychological trauma that disasters can induce and the prevalence of posttraumatic stress disorders in children (Evans and Oehler-Stinnett 2006; Goenjan et al. 2005; Lonigan et al. 1994; Sugar 1989; Vernberg et al. 1996; Vogel and Vernberg 1993). Research suggests that children's disaster responses depend largely on demographic characteristics, family closeness, and characteristics of the disaster event (Vogel and Vernberg 1993). Despite youth-based vulnerability, research by Fothergill and Peek (2006) maintains that children do demonstrate the capacity to cope with disaster trauma. Their research on children impacted by Hurricane Katrina found that children were able to talk about risk with each other and adults in their social network, and older children were more likely to openly discuss their Katrina experiences than younger children. The youth in their study used journal writing and art as forms of catharsis, and spent time with friends as a coping mechanism.

What about other aspects of vulnerability and resilience? Children are typically reliant on adults for financial and material resources, may have physical limitations based on their age, and may have limited ability to influence some decisions that impact their lives. We know very little, however, about the impact these vulnerability factors may have on children's lives when disaster strikes. At the same time, children are connected to a large social network and support system through their schools, and school-aged children spend much of their weekdays in an environment devoted to learning. Given the social location of children in schools, children have the potential to serve as conduits for disaster mitigation, preparedness, response, and recovery information dissemination, both among their peers as well as to other household members. Although reducing disaster

vulnerability for children requires a comprehensive approach that addresses age-based inequalities, recognizing the social capacities of children in disaster education may indeed work to foster community resiliency to disasters.

According to Anderson (2005), the status of children in society has impacted the lack of attention to them in the disaster literature. Children do not set research agendas, they do not conduct research, and they are not in policy positions where they may champion the need for such research. The points raised by Anderson may also explain the kind of attention they are given in the literature. Because youth often do not have the opportunity to speak for themselves in a policy or research domain, the emphasis turns to questions regarding how children feel and how they psychologically cope rather than the activities in which they engage. Much of the disaster discourse on children considers them as extensions of their mothers, referring to the vulnerability of women and children rather than considering their vulnerabilities as distinct. Researchers in the fields of psychology and psychiatry have done a better job at reflecting on children separate from other family members, but understandably the focus of these researchers is on issues related to mental health domains. Finally, the dependency of youth on adults for many facets of their lives encourages a viewpoint that sees children as strictly vulnerable to external forces rather than capable actors in their own lives.

Children are not the only group to have been considered primarily as vulnerable and passive victims to disaster. Anderson and Woodrow (1989) note that non-governmental organizations often approach their international relief operations in a similar way, considering disaster-impacted communities as victims requiring outside assistance rather than groups of diverse actors with varying degrees of strengths and vulnerabilities. They offer a vulnerability and capacity matrix which is meant to aid the identification of these issues along three dimensions. Physical/material factors speak to such issues as people's health, skills, and access to physical and financial resources as well as environmental factors related to the land, climate, and geography of the region. Social/organizational factors contend with the pre-disaster social structure, ways in which decisions are made, leadership, divisions within the community, and social coping systems. Motivational/attitudinal factors connect most closely to the psychological aspects considered in the literature on children. Central to this third dimension are how the community views itself, the extent to which fatalistic outlooks are adopted by its members, and the extent to which proactive behavior is considered possible. Although Anderson and Woodrow's work is primarily presented in the context of how organizations external to a community should consider local capacities and vulnerabilities in their assessment and activities, the matrix provided by the authors is useful in assessing the ways in which educational initiatives aimed at youth consider their target audience.

In this field report, we discuss several educational initiatives that focus on children and disaster. Initiatives were selected to reflect three distinct target-audience age groups. The first initiative is a Sesame Workshop-produced video that is aimed at pre-school children. *Friends to the Rescue* follows the Sesame Street neighborhood as it prepares for a hurricane and helps Big Bird recover after his nest is destroyed. Second, the Master of Disaster program was created by the American Red Cross

and is an interactive program—with videos and lesson plans—aimed at children in kindergarten through the eighth grade. A specific educational curriculum tackles the disaster preparedness, response and recovery activities children may face at home, at school or in their community. Finally, we take a look at an earthquake education video produced by teens for teens. This Emmy-award winning video, *I Don't Fit Under the Desk: Advanced Earthquake Safety*, was an offshoot of a Seattle, Washington school's involvement with a school retrofit program. With a goal of creating preparedness material to which a teen audience would be more receptive than traditional education videos, the students at Nathan Hale School created the video as part of one student's senior project. For each initiative, we discuss the extent to which children's physical/material, social/organizational, and motivational/attitudinal vulnerabilities are taken into account, as well as how children are framed, if at all, as capable actors in individual, household, or community disaster resiliency efforts. We end the paper calling for more systematic research to explore the effectiveness of disaster education initiatives that seek to educate youth.

### **Friends to the Rescue**

First aired in the U.S. in 1969, the *Sesame Street* children's television program is produced by the non-profit organization Sesame Workshop, formerly known as the Children's Television Workshop. The television program is arguably best known by U.S. audiences for its lovable Muppet characters such as Elmo, Big Bird, and Oscar the Grouch. Supported with public and private funds, the program employs a range of media formats to promote early literacy, arts and math skills, multicultural and multilingual communities, health and safety, as well as social and emotional development (Sesame Workshop 2005; Sesame Workshop 2007). The target audience for its programming ranges from infants to late elementary school children, with a particular emphasis on pre-school children. According to their organizational philosophy, education makes the world a better place. Children's educational experience is viewed as a catalyst for change at the individual and community level (Sesame Workshop 2005). The program's impact extends globally as *Sesame Street* is seen in over 120 countries and has co-productions in 20 countries, although the content of the program is often changed to reflect local culture and context. The program and its production company have a history of taking up sensitive topics, including reducing the stigma of HIV in South Africa, confronting ethnic conflict in Croatia and Serbia, and coping with a parent's deployment in the military in the U.S.

As one of its educational initiatives, Sesame Workshop created the *Friends to the Rescue* video, which highlights how Sesame Street confronts a hurricane. The video was originally part of a five-episode series created in response to the September 11, 2001 terrorist attacks and is aimed at a pre-school audience. The video begins with a weather system moving into the Sesame Street area. Residents of the neighborhood turn to NBC television weatherman Al Roker for information about hurricanes. Soon, the residents of Sesame Street are shown preparing the neighborhood by stockpiling supplies and taping up windows. Residents come together and cooperate in order to help each other prepare for the storm. When the hurricane makes landfall, characters stay in their homes and spend quality time

with family and friends. Big Bird has found shelter with others as his outside nest is particularly vulnerable to the elements. Some of the characters express feelings of fear, and sharing one's feelings is encouraged as a coping mechanism. Once the storm passes, residents of Sesame Street discover that the local store has been damaged and Big Bird's nest has been destroyed. In this segment, the neighborhood cooperates in an effort to clean up debris and rebuild. The adults, neighborhood children, and other Muppet characters work to help Big Bird recover and meet the requirements set forth for nest-building standards.

### **Considering Vulnerabilities and Capacities**

Perhaps the most valuable contribution of *Friends to the Rescue* is its dual emphasis on emotional coping strategies and community capacity to support disaster preparedness and recovery. The video points to community physical vulnerabilities and capacities, social capacities, and, in particular, the emotional vulnerabilities of children. Cooperation with family, friends and neighbors is one of the key strategies presented, both with respect to rebuilding efforts and as a source of emotional support. In the video, Big Bird becomes upset that his nest has been destroyed and, consequently, he cannot take his usual afternoon nap. Acting on his friends' suggestion that he take a nap in the store, the video points to how disaster recovery may necessitate adaptation to a changed environment. Perhaps most importantly, the hurricane victims are encouraged by others to discuss the range of feelings experienced during the disaster and its aftermath.

The video does not emphasize the disparities in physical vulnerabilities of those who live on Sesame Street, either with respect to their health or ability, or regarding disparities in the built environment. At the onset of the video, discussion about the rapidly approaching hurricane makes it evident that the young people—and all residents of Sesame Street—are physically vulnerable to the threat of high winds and heavy rains. The video emphasizes the importance of disaster preparedness strategies, such as boarding up windows and gathering emergency supplies including food, water, flashlights, and batteries. Children on Sesame Street also have access to physical resources for clean-up activities and the skills to rebuild the damaged store and Big Bird's living area. In this sense, children are considered capable of learning the importance of disaster preparation and working with others to recover from such events. The focus of the program is on a storm event that does not involve a voluntary or mandatory evacuation. Big Bird and others seek refuge indoors at the homes of friends, but other forms of sheltering—including mass shelters—are not explored. Arguably, viewers are more likely to encounter this kind of storm than one that is more severe; however, children would have benefitted from such discussion of evacuation as an alternative preparedness strategy and what such decision-making and practical steps may involve.

*Friends to the Rescue* suggests positive coping strategies such as support from loved ones, art therapy, adapting to changes, and moving through the range of emotions a disaster generates, all in an effort to reduce motivational/attitudinal vulnerabilities of young children. There is a mixed message, however, perhaps informed by the target age-group and their greater reliance on adults compared to older children. On the one hand, the video depicts neighborhood children as

proactively taking steps to help Big Bird rebuild his destroyed home. To the extent that children viewers identify with children on Sesame Street, they take from the video a sense of capacity to help others and a positive model for coping with disaster. In contrast, for most of the program Big Bird is portrayed as helpless and entirely dependent on others for assistance. While others in the neighborhood begin cleaning up his hurricane-damaged living area, Big Bird watches from the sidelines repeating: "My nest, my home." Arguably, the program must depict the experiences of a disaster victim to teach children its lessons. Big Bird, however, demonstrates few self-capacities to respond and recover. To the extent that children viewers identify with Big Bird as someone their age, they could come away with a sense of complete dependence on others—both adults and other children. Still, despite Big Bird's passive role, at the end of the video he does finally take some proactive steps alongside his friends in reconstructing the nest portion of his living area, thereby showing some recognition of his physical, social, and motivational capacities. The video also allows for an opportunity to initiate dialogue between children and their parents regarding fears, concerns, and proactive strategies, particularly since parents may watch the video (or the television series) with their children.

### **Masters of Disaster**

The American Red Cross, in cooperation with the Allstate Foundation, created the Masters of Disaster program in 1999, when a comprehensive research study uncovered the absence of a school curriculum focusing on natural hazards and their corresponding safety measures. A pilot program was successfully implemented in 43 locations covering 23 disaster-prone states, including the territories of Guam and Puerto Rico (American Red Cross – Masters of Disaster 2001). This interactive disaster safety program, with teaching aids such as age-appropriate videos and lessons plans, targets children in kindergarten through eighth grade. A specific educational curriculum tackles the disaster preparedness, response and recovery activities children may face at home, at school or in their community.

The program strives to provide educators with disaster preparedness educational material that they can incorporate into a broad range of their existing, district-approved curriculums including science, mathematics and language arts. Each age-appropriate kit contains a teaching video, lesson plans, classroom activities, posters and additional teaching aids. Hazards including hurricanes, floods, tornadoes, lightning and earthquakes are highlighted in addition to an all-hazards approach. The video produced for sixth through eighth graders focuses on a group of eight high school students who write, produce and star in a television news reporting series called *DTV*. The students focus their investigative reporting on natural disasters, the hazards that cause these events, and preparedness tips. Each video is divided into ten-minute segments on a natural hazard. The weather phenomena is explained in a manner appropriate for the respective age group (with more detail for the sixth through eighth grade group), and video clips of past events are shown to add emphasis on the damage the hazard can cause. In most segments, the students as well as guest experts (meteorologists or geologists) explain technical terms, such as "storm surge," "floodplain," and "plate tectonics." Finally, safety

precautions and preparedness tips are given to help the students learn to protect themselves and their families.

Teachers can utilize the accompanying lesson plans or student activities to reinforce and emphasize the video segments. Science experiments, spelling lessons on disaster terms, and group activities such as research on local disasters are all detailed and come with relevant handouts. Whether students “shop” for their list of disaster preparedness kit items within a budget to bolster mathematic skills, create a disaster public service announcement while they simultaneously improve spelling, writing and public speaking skills, or focus on nutrition by developing a “survival menu” for evacuation conditions, suggested lesson plans encourage the integration of disaster education into other core learning areas. Activities extend the videos’ relevance from the classroom to the household. For example, students are encouraged to gather items for a disaster preparedness kit, secure windows during a tornado or hurricane, develop a family disaster and communications plan, exercise home disaster evacuation plans, and consider a disaster plan for pets. Other homework activities, such as interviewing family members regarding their own disaster experiences, help students see the relevance of the lesson to their community.

### **Considering Vulnerabilities and Capacities**

The Masters of Disaster program does not depict students as helpless victims but instead portrays them as capable problem-solvers who can overcome disasters and take steps to become more prepared. The combined material presents students as catalysts for change within their households and recognizes the capacities of children to prepare for disaster events. For example, the video shows a child helping her family develop a communications plan—one that includes local and cross-country contacts—for use in the event the family is divided during disaster. Students are directed to organizations that can support their preparedness efforts and increase their disaster knowledge.

Children are presented as knowledgeable actors with the capacity to survive the physical impacts of disasters and participate in educating others in their community. Indeed, the theme song for the *Masters of Disaster* video, sung by young children, is indicative of the overall theme of empowerment: “We are the masters of disaster/and we know just what to do/and we are here to throw some knowledge on you” (American National Red Cross and the Allstate Foundation 2000). The characters in the video are strong, confident children who assume responsible roles such as investigative reporter, news anchor or behind-the-scenes technical producer. One adult, a climatologist, appears in the video, but only to clarify the definition of technical terms and reinforce the messages the youth are delivering. The lone vulnerable character, Ryan, is cast as *DTV*’s special effects technician. Tasked with developing flood and storm surge displays for the program, Ryan’s efforts continuously backfire. However, it is his friends who come to the rescue, sending a message of teamwork and collaboration to viewers. Overall, children are presented as having a proactive attitude towards disaster reduction.

### **I Don't Fit Under the Desk: Advanced Earthquake Safety**

From a set of roundtable discussions organized in the mid-1990s by the Federal Emergency Management Agency (FEMA)—which, at the time, was under the directorship of James Lee Witt—a new program was developed focused on disaster mitigation. Originally known as the Disaster Resistant Community Initiative but later known as Project Impact, the program's overall goal was "to bring communities together to take actions that prepare for—and protect themselves against—natural disasters in a collaborating effort" (FEMA 1997). What set this program apart was that the mitigation activities were to be developed at a local level and by a broad range of community stakeholders. The emphasis was to be on building community partnerships, identifying hazards and community vulnerability, prioritizing and engaging in risk reduction actions, and developing communication strategies to educate the public. With seed money provided by FEMA, communities were to leverage local resources in achieving their goals. Seven pilot communities were unveiled in 1997, and nearly 250 communities were participating by the time FEMA announced the end of the program on February 28, 2001. Ironically, February 28, 2001 was also the same day as the Nisqually Earthquake, a 6.8 magnitude quake that impacted Seattle, Washington, one of the original pilot communities. In Seattle, homes had been retrofitted for earthquakes and both structural and non-structural mitigation measures had taken place in schools as a result of Project Impact—efforts that had tangible payoffs during the Nisqually Earthquake. Seattle had done more than focus on retrofitting its buildings; it also had invested in strong educational partnerships with area schools. School retrofits provided an opportunity to educate students about disaster risks and the benefits of mitigation. For example, schools introduced a "Hazard Hunt" in which the students themselves participated in risk reduction efforts at home and at school. Nathan Hale Public High School was one of several schools where students took an active role in non-structural mitigation of fixtures within the facility, an activity that educated the youth and gave them an opportunity to proactively mitigate against potential earthquake damage and injury.

Students at Nathan Hale are required to produce a senior project during their final year. Among the requirements of the project is that the effort in some way contributes to the broader community. An innovative earthquake education video emerged as one senior's project that has had a lasting effect on earthquake education in this and other high schools in the city.

*I Don't Fit Under the Desk: Advanced Earthquake Safety* begins with a "fuddy-duddy" teacher providing earthquake information, in a monotone voice, to a classroom of disinterested students. She outlines steps to take in a classroom during an earthquake, such as curling up in a ball, staying under the desk, and waiting for instructions from an adult. Soon, a student enters the room with a sign stating, "Boring." Another student enters to declare that what the teacher is saying has "nothing to do with the real world of a young adult" and asks that they, as students, are allowed to tell the "real story." What follows is a fast-paced, attitude-filled earthquake education video meant to educate high school students about what to do in the event of an earthquake. The Emmy award-winning video extends its lessons beyond the classroom, acknowledging that students spend time outside



the classroom at sporting events, at restaurants, at the pool, and, of course, at home.

Pat Ripley, the teacher whose class was involved in the production, is emphatic that this was a student-generated project. She explains how a few slightly rebellious students made it clear that they would not follow instructions to crawl under their desks during an earthquake disaster drill. Unlike very young school children, these teenagers did not fit under their small desks. With the students facing possible reprimand for refusing to participate in the drill, Ripley encouraged the teens to investigate and do something about the instructions if they wanted to see a change. The students did just that, choosing to eventually undertake an earthquake education project aimed at educating their peers. The students sought additional information from Theresa Salmon, the school district's Project Impact liaison, and one student took the lead as her senior project. The Seattle School District financed the production of the video, and Salmon garnered the knowledge and writing support of such agencies as FEMA and the City's Office of Emergency Management. Drawing upon the "I don't fit under the desk" experience for their title, the filming took place over two days and starred Lauren Dixen, German Moore-Rodriguez, and students from across campus as extras. While external guidance was provided, this initiative made use of the teens' capacities—whether their vision, writing style, or knowledge of where high school students spend their time.

And what should students do who do not fit underneath their desks? They should crouch down, hold onto their desks, and protect their necks, or, if in a wheelchair, lock down the breaks and protect their necks.

### **Considering Vulnerabilities and Capacities**

The Seattle video project is an excellent example of an initiative that recognizes the physical vulnerabilities of youth to disasters, but also makes use of and bolsters social and motivational capacities to reduce those vulnerabilities.

On the one hand, these youth are vulnerable to the particular physical environment in which they live. They reside in an earthquake prone region and have little control over the extent to which their school facilities are indeed hazard-prone or hazard-resistant. Students are rarely involved in school district decision-making and have little influence on curriculum. Indeed, this lack of influence over what material is taught and how it is presented could foster a sense of apathy regarding the information included in earthquake education programs. However, the Nathan Hale students took an active role in reducing their physical vulnerabilities by participating in non-structural retrofit activities at their school and in producing the education video. While the retrofit activities were initiated by the Seattle School District, their approach included regarding students as a population that could participate in its own vulnerability-reduction strategies. The video project both demonstrates an acknowledgment of youth capacities in its production—the vision, initiative, and much of the actual production was spearheaded by students themselves—as well as in its message. The video positions youth as capable actors who are able to prepare for disasters and educate others. Youth do not take a passive victim role but instead are charged with taking responsibility for steps that

will limit earthquake-induced injuries. The students involved in the video challenged the information they were receiving during traditional earthquake drills and approached their effort to improve the information and its packaging with a sense of purpose. The receptiveness of the teacher, school, school district, and community—particularly through its involvement in a community-based disaster resistance project—created a social context that was ripe to enable the proactive stance of these students.

### **The Need for Outcome Assessments**

As we compare the emphases on children's capacities and vulnerabilities in these three very different disaster education approaches, and the extent to which youth were involved in production, we must remember that the three videos target different age groups. It is likely that assumptions regarding the capacities of youth are closely associated with the age of the children for whom the products are created. The three initiatives also use different distribution mechanisms. Arguably, *Friends to the Rescue* has the widest national reach—not necessarily through the video itself but rather through the weeklong series aired daily on the *Sesame Street* television show. *Masters of Disaster* also has tremendous potential for reach, especially since educators can integrate the program into existing curriculum and adapt the activities to make the initiative relevant to the local community. Unfortunately, not all American Red Cross chapters promote the initiative, leaving it up to the educators themselves to seek out the material. *I Don't Fit Under the Desk* is extremely salient to Seattle school students. Although useful for other earthquake-prone schools around the country and as a model for student-generated educational material where the process of production serves as the teaching mechanism, its greatest appeal is for Nathan Hale students who can potentially connect to an initiative produced by a former student. While its national reach may be limited, the emphasis on youth capacities is particularly strong in this approach as students were involved in the production of knowledge and not simply receivers of information.

Currently, less than half of the 83 nations belonging to the International Strategy for Disaster Reduction reported evidence of disaster-focused teachings in their primary and secondary education curricula (for a complete summary, see Wisner 2006). However, countries such as Mexico, Romania, and New Zealand mandate the teaching of disaster-related subjects, and other countries such as Japan and Brazil report that the subject matter is frequently taught. In Japan, the Kobe earthquake prompted an emphasis in disaster education in the schools. Nonetheless, implementation of such initiatives is sporadic and often in its infancy, and assessment is infrequent. An exception is the National Society for Earthquake Technology-Nepal, which conducted a survey to identify factors that enhance students' awareness and promote action for disaster mitigation (Shiwaku et al. 2007). Results indicate that current school disaster education in Nepal is lecture-based and primarily serves to raise risk perception, with less attention placed on how to implement pre-disaster measures for disaster reduction. This study suggests that future disaster education in schools should include active learning and engagement with the local community. As we consider the school as a mechanism to reach children, school attendance rates in various countries as well as the

attendance of girls versus boys must be taken into account. The age that children are likely to leave school will impact where efforts are initially made, where resources are invested, and the age-appropriateness of that information.

A range of curriculum options are available to U.S. students, but disaster education is not required. Moreover, educators have limited information regarding how best to present this material to various age groups or how best to actively engage students. As Anderson (2005) noted in his call for research on children and disasters, educating children about disasters could pay dividends beyond youth preparedness. Given their connection to the school system, children could potentially serve as an effective way to communicate disaster mitigation, preparedness, response, and recovery information to their parents, particularly since research has suggested that higher levels of earthquake preparedness is positively correlated with the presence of children in the home (Turner et al. 1986). Anecdotal examples of children's capacities to turn their knowledge of disasters into proactive helping strategies find their way into news articles after media-worthy events take place, such as when Tilly Smith, a young British girl, warned her family and other tourists in 2004 at Thailand's Maikhao Beach of the impending tsunami after learning about the natural phenomenon in her school geography class a few weeks prior.

Each of the U.S. initiatives discussed here strives to varying degrees to educate young people and turn them into disaster educators. Children are refigured as capable or with the capacities to become more capable in their own safety and the safety of others. Yet little systematic research has been conducted on the effectiveness of these or other child-targeted disaster education initiatives (particularly for specific age groups). The American Red Cross did evaluate the *Masters of Disasters* initiative; however, the evaluation focused on feedback from educators and students regarding how they liked the material rather than if the educational strategies resulted in any concrete changes in preparedness or long-term increases in response and recovery knowledge. Again, anecdotal reports from Nathan Hale High School suggest that the video production raised disaster awareness and preparedness involvement among the class; however, no systematic follow-up was undertaken to examine the longevity of that involvement or the extent to which disaster information made its way back into the household.

Clearly, these three program examples demonstrate that there are initiatives that do positively consider the capacities of children. Indirectly applying the principles of Anderson and Woodrow's (1989) work, these initiatives may prove more successful in building disaster resilience among young people and perhaps also the households in which they live. To establish this, future research must examine the impact of youth-focused disaster education, the extent to which initiatives lead to long-term increases in knowledge, and the role children can play in building community capacity and reducing community vulnerability. By doing so, we may be able to better help schools develop and select programs that have the greatest impact in bolstering children's disaster resiliency. Greater attention to the vulnerabilities and capacities of children—distinct from considerations of women—must continue to move forward in the disaster field.

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## References

**Anderson, William A.** (2005). "Bringing the Children into Focus on the Social Science Disaster Research Agenda." *International Journal of Mass Emergencies and Disasters* 23(3): 59-175.

**Anderson, Mary B. and Peter Woodrow** (1989). *Rising from the Ashes: Development Strategies in Times of Disaster*. Boulder, CO: Westview Press.

**American Red Cross – Masters of Disaster** (2001). Retrieved January 20, 2007 from <http://www.redcross.org/disaster/masters/devpros.html>

**American National Red Cross and the Allstate Foundation** (2000). *Masters of Disaster* Video.

**Drabek, Thomas** (1986). *Human Systems Response to Disaster: An Inventory of Sociological Findings*. New York: Springer-Verlag.

**Evans, Linda and Judy Oehler-Stinnett** (2006). "Children and Natural Disasters: A Primer for School Psychologists." *School Psychology International* 27(1): 33-55.

**Fothergill, Alice and Lori Peek** (2006). "Surviving Catastrophe: A Study of Children in Hurricane Katrina." In Natural Hazards Center, eds. *Learning from Catastrophe: Quick Response Research in the Wake of Hurricane Katrina*. Boulder, CO: Institute of Behavioral Science, University of Colorado, 97-129.

**Goenjan, Armen K., David Walling, Alan M. Steinberg, Ida Karayan, Louis Najarian, and Robert Pynoos** (2005). "A Prospective Study of Posttraumatic Stress and Depressive Reactions among Treated and Untreated Adolescents Five Years after a Catastrophic Disaster." *American Journal of Psychiatry* 162: 2302-2308.

**International Strategy for Disaster Reduction (ISDR)** (2007). Organization Webpage. Retrieved February 1, 2007 from: [http://www.unisdr.org/eng/public\\_aware/world\\_camp/2006-2007/wdrc-2006-2007.htm](http://www.unisdr.org/eng/public_aware/world_camp/2006-2007/wdrc-2006-2007.htm)

**Lonigan, Christopher J., Mitsuko P. Shannon, Charlotte M. Taylor, A. J. Finch and Floyd Saltee** (1994). "Children Exposed to Disaster II: Risk Factors for the Development of Post-Traumatic Symptomatology." *Journal of the American Academy of Child Psychiatry* 33: 94-105.

**Phillips, Brenda D. and Betty H. Morrow** (2005). "Social Science Research Needs: A Focus on Vulnerable Populations, Forecasting and Warning." Paper Presented at the Hurricane Forecast Socio-Economic Workshop. Pomona, CA.

**Save the Children** (2006). *Aftermath of a Hurricane*. Westport, CT: Save the Children. Retrieved February 19, 2007 from: <http://www.savethechildren.org/emergencies/us-gulf-coast-hurricanes/aftermath-of-a-hurricane.html>

**Sesame Workshop** (2005). *Annual Report*. Retrieved January 4, 2007 from: <http://www.sesameworkshop.org/aboutus/pdf/SesaemWorkshop2005.pdf>

----- (2007). Organization Webpage. Retrieved January 4, 2007 from: <http://www.sesameworkshop.org/aboutus/intro.php>

**Shiwaku, Koichi, Rajib Shaw, Ram Chandra Kandel, Surya Narayan Shrestha, and Amod Mani Dixit** (2007). "Future Perspectives of School Disaster Education in Nepal." *Disaster Prevention and Management* 16(4): 586-587.

**Sugar, Max** (1989). "Children in Disaster: An Overview." *Child Psychiatry and Human Development* 19(3): 163-179.

**Susman, Tina** (2005). "Looking for the Lost: The Search for Children Scattered by Katrina." *Newsday*. December 4. Retrieved February 1, 2007 from: <http://www.newsday.com/news/nationworld/nation/ny-uskids044539190dec04,0,7612636.story?coll=ny-nationalnews-headlines>.

**Turner, Ralph, Joanne Nigg and Denise and Hellar-Paz** (1989). *Waiting for Disaster: Earthquake Watch in California*. Berkeley: University of California Press.

**U.S. Census Bureau** (2003). American Fact Finder. Washington, D.C.: U.S. Census Bureau. Retrieved February 19, 2007 from: <http://www.factfinder.census.gov>

**Vernberg, Eric. M., Annette. M. La Greca, Wendy K. Silverman, and Mitchell J. Prinstein** (1996). "Prediction of Posttraumatic Stress Symptoms in Children After Hurricane Andrew." *Journal of Abnormal Psychology* 105: 237-248.

**Vogel, Juliette and Eric M. Vernberg** (1993). "Children's Psychological Responses to Disaster." *Journal of Clinical Child Psychology* 22: 470-484.

**Wisner, Ben** (2006). *Let Our Children Teach Us! A Review of the Role of Education and Knowledge in Disaster Risk Reduction*. India: Books for Change. Retrieved December 1, 2007 from:

<http://www.unisdr.org/eng/task%20force/working%20groups/knowledge-education/docs/Let-our-Children-Teach-Us.pdf>

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