
Exploring the Support Role of Special Education Teachers After Hurricane Ike: Children With Significant Disabilities

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Abstract

This study explored the role of special education teachers of children with significant disabilities during Hurricane Ike. Grounded theory methods were used to analyze interview data of the teachers ($n = 4$) who were employed in school districts directly affected by the hurricane. The five categories that emerged from the data were *losses for students and families*, *losses for teachers*, *resource supports*, *communication supports*, and *supports to reestablish routines*. Despite being affected by the storm themselves, the teachers provided essential support to their students and families throughout all phases of the disaster. The role of these teachers evolved to include instrumental and psychological supports, which has been documented in previous studies. These teachers' roles differed in that they provided support while school was closed and included the disability-related needs of their students. Recommendations include that teachers receive training on the needs of students with significant disabilities and their families during natural disaster.

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When natural disasters threaten communities, schools often close to prepare and teachers evacuate along with their students. Approximately 20% of the population in an average U.S. city either works in or is enrolled in a public school (U.S. Census Bureau, 2009); hence, school closings can produce large-scale disruptions. When schools are closed or damaged, classroom time is often lost and the destruction of vital records or educational materials can hamper instruction (Peek, 2008). Children exposed to disasters are also forced to cope with a series of stressors, including changing schools, losing family members or friends, altered leisure activities, and lost family resources (Peek, 2008; Silverman & La Greca, 2002). Predisaster factors such as lower socioeconomic status and poor housing quality place some children disproportionately at risk, while discriminatory economic practices or policies post-disaster can make children even more vulnerable (Cannella, Collins, & Stough, 2009; Peek, 2009).

Among those children at risk in disaster are children with disabilities. More than 6.6 million children, representing 13% of the school-aged population in the United States, are diagnosed with some type of disability (U.S. Census Bureau, 2009). Children with significant disabilities such as autism, intellectual disabilities, health impairments, physical disabilities, and traumatic brain injury represent approximately one fourth of this population. Students with significant disabilities typically require additional educational and physical support and spend much of the school day under the direct supervision of a special educator. Despite the potential impact of disaster on children, researchers rarely examine the influence of disaster on children with disabilities, regardless of their type of disability (Peek & Stough, 2010). Our literature search of the EBSCO, PsycINFO, CSA, and Wilson databases found no studies that examined the affects of natural disaster on children with significant disabilities.

Studies have documented that teachers can provide valuable support to children during the preparedness phase of a disaster. Ronan et al. (2008), in a review of studies, found that children who participate in school-based preparation programs have increased knowledge of preparedness, greater hazard awareness, and reduced levels of fear. For example, a study of 440 Australian children aged between 5 and 13 years found that disaster communication between parents and teachers helped children learn protective behaviors to take during disaster (Ronan, Johnston, Daly, & Fairley, 2001). A number of

other school-based disaster programs have been found to be effective in preparing students and their families for disasters (see Peek, 2008, for a review). These programs have been found to be most effective when they directly involve students (Ronan et al., 2008) and provide them with hands-on, experiential learning (e.g., Morris & Edwards, 2008, Nikku, Sah, Karkara, & Ahmed, 2006). However, the experience of students with disabilities have been overlooked in the evaluation of these preparedness programs.

Scholars have also found that teachers can offer valuable social and psychological supports to children after a disaster (Barrett, Ausbrooks, & Martinez-Cosio, 2008; Reich & Wadsworth, 2008; Wolmer, Laor, Dedeoglu, Siev, & Yazgan, 2005). Teachers can provide accurate information about disasters and provide students with an increased sense of security (Prinstein, La Greca, Vernberg, & Silverman, 1996; Wolmer, Laor, Dedeoglu, Siev, & Yazgan, 2005). Vernberg and Vogel (1993) suggest that disaster interventions provided in the classroom provide a more naturalized setting for mental health interventions. In a study of 507 third through fifth graders in three different schools in Miami after Hurricane Andrew, teachers helped students cope by providing opportunities for emotional processing in the classroom, such as controlled exposure to the traumatic event and activities such as relaxation, conversation, play, or drawing (Prinstein et al., 1996). Other documented benefits of postdisaster teacher support include higher student self-esteem, less emotional discomfort, and an increase in positive mental health (Barenbaum, Ruchkin, & Schwab-Stone, 2004; Barrett et al., 2008; Prinstein et al., 1996). Some professionals suggest that teachers can also provide disaster instruction and assistance to students with significant disabilities (Farrell & Crimmins, 2007; National Association of School Psychologists, 2002; Obiakor, Mehring, & Schwenn, 1997). For example, researchers have suggested the use of visual aids to assist children with intellectual disabilities to understand disasters (Farrell & Crimmins, 2007). However, these approaches have not been empirically investigated.

In the only published account of special education teachers following disaster, Christ and Christ (2006) found teachers instrumental in providing access to guidance counselors and bereavement therapy to students with learning disabilities who lost parents during the 9/11 Twin Tower attacks. Interviews and clinical measures obtained over a 5-year period following the disaster documented the grief and trauma reactions of four children and their families. Children with disabilities in the study exhibited a somewhat differential reaction in that they did not experience intrusive thoughts about the disaster to the same extent that children without disabilities evidenced. The

children in this study did not include students with significant disabilities, however.

Collectively, these studies point to teachers' roles as important educational, psychological, and social supports for children and their families during disaster. However, with the exception of the Christ and Christ (2006) study, these studies focus on teachers of students without disabilities. Our search revealed no published account on how teachers of students with significant disabilities provide support during disaster: This study addresses that research gap.

Disaster Context: Hurricane Ike

Hurricane Ike made landfall on September 13, 2008, along the Texas barrier island of Galveston. Mandatory evacuation was announced for the island of Galveston, as well as for Brazoria County, Chambers County, and the portions of Harris County that adjoined Galveston Bay (Langford, Peterson, & Rice, 2008). More than 160 school districts serving more than 1.25 million children across 20 counties in southeastern Texas were affected by the disaster (Texas Education Agency, 2010a). More than 60 of these school districts were closed for at least a week, 33 districts for 2 weeks, and 3 districts were closed for 3 weeks following the storm. Our focus was on teachers from one school district that was closed for 3 weeks after Hurricane Ike. At the time of the storm, there were more than 500 teachers employed in the district, approximately 10% of whom were special education teachers. During this same time period, 9% of the student population was receiving special education services within the district (Texas Education Agency, 2010b).

Given previous findings on teacher support following disaster (Barrett et al., 2008; Christ & Christ, 2006; Peek, 2008; Prinstein et al., 1996; Reich & Wadsworth, 2008; Wolmer et al., 2005), we questioned how special education teachers assisted students with disabilities in a school district directly affected by a hurricane. We interviewed four special education teachers to explore their role in supporting students with significant disabilities.

Method

Data Collection

Our study was undertaken as a pilot investigation of the role of special education teachers before and following a natural disaster. Transcripts were developed from four special education teachers interviewed individually 6

months after Hurricane Ike. The interview questions were piloted with a fifth teacher who also lived in one of the counties directly affected by the storm. The initial interview included six questions about the teachers' experience with their students before and after Hurricane Ike and focused on the support that they had provided. These initial interviews lasted for 20 to 40 minutes and were conducted face-to-face with each teacher.

Four follow-up telephone interviews consisting of four questions were conducted a year after the storm. These questions focused on the recovery of the students and the support that the teachers continued to provide to them and their families. Interviews lasted for 10 to 18 minutes. The first and the follow-up interviews were digitally recorded and transcribed verbatim. In addition, field notes were taken immediately after each of the interviews and included technical notes and researcher reflections. During the follow-up interviews, two teachers described increased communication and closeness with their students and their families after the hurricane. E-mails were exchanged with the other two teachers to gather supplemental information about their experiences in these areas. Multiple data sources, including transcripts from initial interview ($n = 4$), the follow-up interview ($n = 4$), and e-mails ($n = 2$), were analyzed to triangulate the data. Information from the field notes was used in conjunction with interview data to construct a profile for each teacher.

Sampling Strategy

The study was approved by our institution's internal review board. We used purposeful sampling to select participants teaching in schools directly affected by Hurricane Ike. Purposive sampling is often employed to ensure that participants have experienced the same phenomena of interest (Denzin & Lincoln, 1994). For our study, purposive sampling was necessary to select special education teachers who taught students with significant disabilities in the affected schools. Children taught by study participants were diagnosed with a variety of significant disabilities, including autism, intellectual disabilities, multiple disabilities, physical disabilities, and/or health impairments.

We contacted the special education director of the targeted school district and asked her to identify effective special education teachers who taught at a variety of elementary grade levels. Palmer, Stough, Burdenski, and Gonzalez (2005) in their investigation of the selection of expert teachers in research studies recommend that selected participants should have at least 3 years of experience in a specific teaching content area and with a particular population of students. Each of the study participants had been a certified special

education teacher for at least 8 years. Three of the teachers taught students in a self-contained setting in which the students spent the majority of school day in the same classroom. The fourth teacher provided instruction in a medical setting.

Participant Profiles

The following profiles include information on the teachers and how they and their schools were affected by the storm. Pseudonyms are used for all participants.

Denise. Denise, a White individual and K-5 teacher, had 12 years of teaching experience. She worked in the same school district for her entire teaching career and displayed immense enthusiasm when talking about her students. Denise taught students with autism and each of her students had unique learning needs and levels of functioning. As a result, she implemented individualized instruction to meet each student's academic, social, communication, and self-help needs. Denise expressed frustration that the hurricane occurred at the beginning of the school year. She and her students were not able to return to their classroom until 3 weeks after the storm. Five of her students did not return the following school year. Denise and her own family were forced to evacuate to another city in advance of the storm. She returned only after electricity had been restored to the area.

Anne. Like Denise, Anne taught K-5 and her racial/ethnic identity was White. She had 27 years of experience, taught students with significant disabilities, and had the same students continuously for 5 to 7 years. Anne expressed that she felt particularly close to her students and their families. Anne evacuated along with her family in advance of the storm and returned to a flooded apartment building. After the hurricane, Anne and her students were relocated to another elementary school as their home school had suffered extensive damages. At the time of our follow-up interview, her students had not returned to their home school. Anne retired 8 months after the storm. Anne, although retired, maintained contact with her students and their families including two students who permanently relocated because of the storm.

Teresa. Teresa, a Hispanic teacher of Grades 6 to 8, had 8 years of teaching experience. Three of her 8 years were in the affected district. She taught children who had health disabilities or who were undergoing medical treatments. After the storm, her classroom was closed because of sustained damages and Teresa was placed in a temporary position in a different setting. She was later reassigned to a different school within her same district, again teaching

children with significant disabilities. Her former students with health and medical disabilities were all relocated to other towns in order to have access to medical treatments. Teresa lived in an area that was not under mandatory evacuation and did not evacuate, however she lost electricity for 24 hours and said that she would evacuate for the next storm.

Mary. Mary, an African American teacher, taught students in 9th through 12th grades. She had 34 years of experience, 10 of which were with students with disabilities. Mary believed that her best years of teaching had been with students with intellectual disabilities. Mary, three other teachers, and their students, occupied a wing of the school that consisted of four classrooms and a common area. The students rotated throughout the four classrooms to receive academic and vocational instruction and attended electives in inclusionary settings. The classrooms were damaged by water and were inaccessible a month after the storm. The teachers and students who returned to school shared one classroom on the other side of the school until they were able to return to their former classrooms. Two of her students missed instruction until the beginning of the next school year. Mary evacuated with her family and returned to a home without electricity. She found it difficult to listen to her coworkers talk about their extreme property losses as she had only experienced loss of electricity. Table 1 provides summarized information about each teacher.

Analysis

Given the preliminary nature of our data, we purposefully did not aim to construct a theoretical model (see Corbin & Strauss, 2008) but instead implemented grounded theory coding (see Charmaz, 2006) to describe and organize our data. Data were triangulated across the first interviews, the follow-up interviews, and e-mail correspondence to derive our categories and to enhance the credibility of our analysis (Lincoln & Guba, 1985).

We began our analysis with open coding in which we went through each transcript line-by-line and summarized each line with a few words. For example, the quote “I touched base with my parents the next day after the storm” was coded as “talked to parents.” This line-by-line coding process allowed our analysis to be grounded in data while also serving to convert raw data into concepts (Corbin & Strauss, 2008). There were a total of 346 open codes from the transcripts. Next, we used focused coding to identify those codes that appeared most frequently or that were conceptually related to form categories. Following suggestions from Charmaz (2006), we decided on initial categories that made the most analytic sense. For example, there

Table 1. Participant Professional Profile

Teacher	No. of Students	Students' Disabilities	Postdisaster Status	Teacher's Personal Experience With the Storm
Denise	7	Autism	Returned to the same classroom when school reopened 3 weeks after storm; five students did not return in the following year.	Evacuated in advance of storm, returned after electricity was restored
Anne	5	Various significant disabilities	School was shut down after Hurricane Ike; relocated to another school after classes resumed; two students did not return the following year	Evacuated in advance of storm, apartment building flooded, without electricity for over a week
Teresa	7	Health impairments or undergoing medical treatments	Classroom closed; all of her students were relocated to other towns; teacher relocated to a new classroom and began teaching students with significant disabilities	Did not evacuate, lost electricity for 24 hours, said she would evacuate for next storm
Mary	7	Various significant disabilities	Classrooms were damaged by water and were inaccessible for 1 month; teacher and students temporarily used another classroom; two students were out until the beginning of next school year	Evacuated in advance of storm, without electricity for 6 days, felt sympathy for coworkers who lost their property

were frequent codes concerning teachers' conversations with parents, which led to the formation of "communicate with families" as an emergent category. The categories that emerged from this process were *resources destroyed, services lost or disrupted, personal items lost, students absent, families displaced, school out for long period of time, classroom damage, teacher supplies lost, teaching difficulties, relay of disaster-specific information, provide resources, communicate with families, offer services after storm, touch base after the storm, communicate with students, students' psychological reactions, close with families, return to routine, and school and community supports*. We performed axial coding to understand the relationship among these categories. Axial coding resulted in the identification of overarching and primary categories, which can be found in Table 2.

The constant-comparative method (Corbin & Strauss, 2008; Glaser & Strauss, 1967) was used throughout the coding process to develop and refine categories. For example, while coding the data from the second interviews, we checked each emergent code with categories that had been previously developed during the open coding. We then decided if each of these new codes belonged under the established categories or represented a new concept.

We completed selective coding after completing coding on all data. We agreed on those categories that were supported by our data, and then described these categories. Categories were finalized after both researchers reached consensus via ongoing discussions and a continual return to the raw data and the data coded in the open and axial coding. Corbin and Strauss (2008) described "conceptual ordering" as organizing the data into categories while also providing a description of each of the categories. We completed the conceptual ordering of our data by using direct quotations from our participants to describe the categories.

Results

Categories that most clearly emerged from our analysis of this data were grouped under the two overarching themes of "Losses" and "Supports." The primary categories were (a) *losses experienced by students and families*, (b) *losses experienced by teachers*, (c) *resource support*, (d) *communication support*, and (e) *support to reestablish routines*. In the section below, concept labels have been italicized under each category so that the connection between our first-level analysis and these categories is clear. Punctuation was added to the teachers' quotations to enhance readability and clarify participant responses.

Table 2. Axial Coding of Triangulated Data

Categories	Interview I	Follow-up Interview	E-mail Correspondence
Losses experienced by students and families	Loss in resources (all) Loss in services (all) Loss of personal items (all) Loss of skills (all)	Loss in resources (all) Loss in services (Anne & Denise) Loss of personal items (Anne & Denise) Loss of skills (Mary & Denise)	
Losses experienced by teachers	Loss of classroom materials (all) Loss of students due to relocation (all) Loss of professional functioning (all) Loss of familiar classroom (Mary, Anne, and Teresa)	Loss of classroom materials (Mary, Anne, & Denise) Loss of students because of relocation (all) Loss of professional functioning (Mary, Denise, & Teresa)	
Resource support	Tangible resources (all) Informational (all) Classroom resources (all) Support from school and community (all) Teachers appreciate of support (all)	Tangible resources (Mary & Anne) Informational (all) More personal in nature (Anne & Teresa) Support from school and community (all) Teachers appreciate of support (Anne)	
Communication support	Before the storm (all) During school closure (all) Once school resumed (all)	Before the storm (all) During school closure (Teresa) After the storm—a year after (all) Closer with families (Anne) Increase of communication with families (Mary & Anne)	Closer with families (Denise and Teresa) Increase of communication with families (Denise and Teresa)
Support to reestablish routines	During school closures (all) Once school resumed (all) Teachers own routine (all)	During school closures (Mary) Once school resumed (Denise, Mary, & Teresa)	

Losses Experienced by Students, Families, and Teachers

The teachers discussed how Hurricane Ike caused widespread loss. In the interviews, the teachers were asked about their own preparedness and recovery experience but all of them continually focused their responses on the experiences of their students and their families.

Losses experienced by students and families. Teachers discussed the storm in terms of what had been *lost by their students and their families*. They mentioned the *loss of resources and services* that affected their students with disabilities. Students *lost concrete resource items*, such as durable medical equipment, clothing, and personal hygiene supplies. These concrete items were needed to support their daily functioning in the classroom. The *loss of services*, such as transportation and medical services, not only affected students' daily functioning, but also their ability to return to school. Mary remarked,

What happened was the wheelchairs got destroyed in the storm and they had no way to get transported back and forth from school. I have one [student] that is still out from the storm because she has not gotten her wheelchair back.

The loss of specialized equipment and services has also been reported as a concern in previous research on the impact of disaster on adults with disabilities (Kailes, 2008; National Council on Disability, 2009).

The teachers also expressed distress about the *students' loss of academic, behavioral, and social skills* after missing instruction for several weeks. The loss of instructional time meant that students forgot skills previously learned. For example, Anne explained, "We had to reintroduce skills and mine got a little behind because they had not been in school for so long." The teachers' attention to students' regression of skills was not surprising. The Individuals with Disabilities Act, national legislation that mandates educational services for students with disabilities, includes provisions for students to receive extended year educational services to prevent regression of academic, social, and behavioral skills. Mary and Denise both commented that increased instruction was necessary to address their students' regression in skill level. During the follow-up interview, Mary reflected on what she would have done differently

I think that I would have pretty much insisted on those kids that were homebound and could not come to school that the parents let us come in and do some teaching to try and prevent some of that regression.

Teachers were also sensitive to losses faced by students and their families at home. Denise commented on the enormity of the losses experienced by the families and students: "They lost everything. They lost their homes. They lost all of their belongings." Losses experienced at home seemed to affect students' emotional functioning. Mary recounted the emotional impact that loss of belongings had on one of her students:

He looked in his front yard and all of his belongings were there. All of the things he pretty much likes. He likes art and all of his art was destroyed and he was really devastated with pain; with his pottery on the front lawn broken and his bed broken.

This echoes impact found in other adolescents exposed to trauma (Farrell & Crimmins, 2007). Denise, who taught children with autism aged 5 to 11 years, said, "When the parent dropped them off they would be more clingy to the parents which they were not before." Fear of separation from parents is a response typical of younger children or children functioning on a lower intellectual level (Farrell & Crimmins, 2007).

Losses experienced by teachers. Although their focus was on the loss experienced by their students, all of the teachers discussed their own losses as educators. Participants expressed a *loss in professional functioning*, meaning the disaster interfered with their ability to effectively meet students' needs. *This loss of professional functioning* stemmed from *loss of familiar classrooms*, *loss of teaching materials*, *the loss of specialized equipment*, and *disruption in their own routines*. Mary noted the *loss of familiar classrooms* affected her students' behavior once they returned to school:

We had to double up and the routines totally changed and the children understood that. They were getting restless that you could not go to different classes. You could not do anything that we normally do so it was kind of hard.

In addition, the four special education teachers reflected on the added strain of putting their classrooms back in order. Mary remarked, "It was difficult because we had everything in place and then to come back and it is not there. This was a time you could not ask the parents for this or that because they were all without." Anne also experienced loss in professional functioning when her classroom was relocated to another school that was not equipped to serve students with disabilities: "There are challenges here in my classroom.

I have no running water and all of my children are in diapers. I have no changing table in this classroom.” Personal or self-help skills, such as toileting, dressing, and personal hygiene, are essential learning objectives for students with significant disabilities (Westling & Fox, 2009). The loss of classroom adaptations made it challenging for the teachers to meet their students personal and self-help instructional needs.

Teachers experienced further *loss in their professional functioning* with the *disruption in their own routines* as schools were closed for an extended period of time. For example, Teresa’s teaching setting was completely shut down; she did not have a classroom to return to after the storm. The school assigned her to work temporarily in a school district daycare center until she could be placed in a permanent teaching position. In addition, Teresa’s new position was with children with intellectual disabilities rather than with children with health impairments. Although she expressed gratitude for support from the school district, Teresa was also challenged by having to quickly learn teaching techniques for students with intellectual disabilities.

Forms of Support

Teachers, like their students, experienced loss and disruption. Despite these experiences, teachers not only helped their students and families to prepare for the hurricane, they also helped them to recover from it. Teachers offered support in the form of *resources, communication and reestablishing routines*.

Resource supports. Teachers focused on the *concrete, tangible resources* that students with disabilities and their families needed to recover from the storm. Study participants focused on *resources* that came from one of two sources; support they themselves provided to their students and families or supports provided by the school and community. Many of the resources that the teachers provided were *informational* in nature. For example, the teachers informed families about resources available in the community, such as which shelters were providing meals, or gave them phone numbers to connect them with important services. At times teachers passed on information that they obtained through their own recovery efforts. For example, Anne remarked, “Well we did not have any power either so as much as we knew about it I would certainly share with my parents and would call and say ‘there is ice at this location.’” The teachers continued to provide *resources* for a full year following the storm, such as ensuring that families still living in hotels were getting needed hygienic supplies for their children and connecting students emotionally affected by the disaster to school counselors.

Teachers seemed to provide *resources of a more personal nature* than those provided by the community and school. For example, Anne gave one family pictures of their son who had passed away 3 years before the storm because the family lost all its pictures as a result of the flooding. Anne felt replacing personal mementos was important because she felt close to her students' families and friendships had developed. She explained,

In a life skills [self-contained classroom] setting you have some of the students for four to five years so you become very close with your parents because you go through a lot with your parents you go through hospitalizations with them. You go through ups and downs.

The teachers also provided *classroom resources* to replenish the ones that were lost from the storm. Anne brought toys from home that could be used in the classroom. Replacing classroom resources sometimes involved collaboration with other disability-related support staff. For example, Anne explained that "all of the therapists, we all got together because most of the equipment got destroyed but we pieced enough together for the therapists."

Postdisaster *resources provided at the community and school levels* were typically supplies necessary for immediate survival after the disaster, such as food, shelter, and clothing. Community and school resources usually replaced durable medical equipment or hygienic supplies needed by students. Anne remarked on the quick response by the community to provide these types of supplies after the disaster:

It was wonderful. The local hospital immediately opened up a clinic even before we started school back and got loaner chairs sent in from all over the counties so they could fit them with loaner chairs until the brand new ones came in.

Mary echoed her appreciation of resources provided by other schools in the district: "We had other schools come in. They brought in busloads of things for us such as diapers and wet ones. You know we had a lot of generosity going on." Appreciation and recognition of the immediate community and school supports have also been documented following Hurricane Katrina by teachers of young children (Buchanan, Casbergue, & Baumgartner, 2009).

Communication supports. Communication was another support provided by the teachers and occurred before, immediately after, and during long-term recovery. Study participants appeared to fill a critical communicational role in preparing their students and their families in advance of the storm. Teachers felt

it was important to increase their communication with the families before the storm made landfall. Teresa described how she passed on news:

Just giving them information and I made sure we had time to watch TV like I think CNN we were following so that way they could see the way meteorologist was tracking and this way we were tracking it and they could learn to do it on their own.

Other teachers talked to their students, engaged them in role play, discussed safety issues, and used visual support to communicate to students the possible scenarios that could arise from the hurricane. Mary prepared her students for the evacuation by explaining to them, “You need to take your favorite toy or your favorite CD.” Mary reflected during the follow-up interview her wish to increase communication on preparedness with her students because of the severity of Hurricane Ike. She said, “I would have talked more about what would happen if you were homeless so they could be aware there is a possibility that something that drastic could interrupt their livelihood and their lifestyle.”

Communication support continued while school was out for 3 weeks. All four teachers maintained contact with their students and their families immediately after the storm and during the 3 weeks that school was out. Contact was maintained primarily through cell phones or e-mails. All the teachers made sure to communicate with each of their students and their families, checking on their well-being and providing information on resources. Denise commented, “All of my parents have my cell phone number and I was in contact with them all of the time so I made sure they were okay.” Teresa also remarked on increased contact with her student’s families, “I feel closer to their families and I think they also feel closer to us. The communication lines have opened up more than ever before.” Likewise, students and families maintained contact with the teachers, in part, to get information about the progress of recovery efforts in the Galveston area and occasionally sought advice from the teachers. Teachers continued to maintain contact with their students and their families, even those who had relocated to different counties, a full year after the storm. For example, Anne had a father contact her about medical and educational advice for a former student who relocated to another state. She also communicated about housing costs with a mother who was interested on returning from out of state to the affected area. Communication from teachers also provided emotional reassurance to students after the storm. Three teachers reported that a few of their students become stressed when there are changes in the weather. One of the students expressed stress

by stating, “No more Ike” every time it rained. Teresa and her colleagues tried to allay their students’ anxieties about future storms, “We as teachers explain to the students . . . that there is nothing to worry about.” Mary said, “They don’t want it to happen again but it [Ike] is still on their minds” and she talked to them daily about the weather in order to ease their anxiety.

Support to reestablish routines. Hurricane Ike disrupted students’ daily routine both during and following the storm. Families faced difficulties in maintaining structure for their children while having to live in shelters or hotels. Teachers felt that they offered guidance that helped parents to *maintain routines during the evacuation and temporary sheltering* phases. They offered to provide home-based instruction while the students were out of school. As reflected below, they also talked to parents about using a schedule for the children and reminded parents to explain their daily activities.

When I would talk to my parents and ask how the kids were, they said they are very upset and confused. They [the kids] think they need to be going to school. It was very rough on them. I tried to tell the parents to do as much as you can, even if you have to draw a picture, let the students know what is going on. (Denise)

Mary had her students visit the school even though they could not attend on a permanent basis. Her explanation to her students was: “You can’t come back now but you might be back here and your teacher is still here some of your classmates are still here. We were trying to get some normalcy with them.” After students and their families returned to the area, teachers viewed the *return to a daily routine* as a way to provide students with a sense of comfort. Returning to routine was seen as a way to help students gain a sense of normalcy and connection. Anne said, “We were so excited that the students were back. They were happy and back in the routine here where everybody is happy singing our same songs—and you know that kind of stuff gets them back to normal.” After Hurricane Andrew and Hurricane Katrina, teachers and schools were found to similarly focus on reestablishing the routines of their students and to provide instruction immediately after school resumed (Dash, Morrow, Mainster, & Cunningham, 2007; Fothergill & Peek, 2006).

Discussion

Special education teachers in this study focused primarily on the negative impact of Hurricane Ike upon students and their families. Teachers described a variety of losses because of the storm. Students lost concrete resource items

such as wheelchairs and transportation services necessary to access educational services. Students lost behavioral, academic, and social skills as a result of school being closed over a prolonged period of time. Students and families lost their homes and personal belongings. Teachers repeatedly reflected upon how these losses affected their students' emotional well-being.

As has been described by other scholars (e.g., Buchanan et al., 2010; Prinstein et al., 1996), this natural disaster not only affected the lives of school children but also the professional roles of their teachers. Teachers experienced considerable difficulties in carrying out their professional duties, which, in turn, affected their capacity to effectively instruct their students. Teachers had to teach in unfamiliar classrooms and with unfamiliar materials. Instructional materials and specialized equipment were lost. School routines changed and students were frequently absent. Teachers had to modify instruction to mitigate regression in their students' social, behavioral, and cognitive skills. These struggles all took place while teachers were still recovering from their own personal losses and attempting to reestablish personal routines that were disrupted by the disaster.

Despite these challenges, teachers in this study expanded their role as supportive professionals to students and families before, during, and after the storm. Support included providing resources, communication, and reestablishing routines. Teachers provided concrete resources directly to the students and their families. The school district and community were also instrumental in providing tangible resources that directly assisted students and families. Communications from these teachers kept students and parents informed throughout all phases of the disaster and continued for a full year after the storm. As a result, a strengthened connection between teachers and families was evidenced. When possible, teachers reestablished familiar routines in order to provide a sense of normalcy to their students after the storm.

The support role of these teachers was both similar to and different from that of teachers documented in other natural disasters. As shown in other research (Peek, 2008; Ronan et al., 2001), these teachers were a valuable source of disaster information and preparedness for students and their families. The social and emotional roles adopted by these teachers also have been previously reported in studies about teacher–student relationships following disaster (e.g., Barrett et al., 2008; Dash et al., 2007; Reich & Wadsworth, 2008; Vernberg & Vogel, 1993). For example, the teachers in this study provided classroom-based support to address their students' emotional needs. The role of these teachers, however, differed with respect to the timing of their disaster-related actions. Teachers in this study were proactive before, during, and immediately after this natural disaster. These teachers did not wait

until their school district reopened to contact their students; rather, they maintained contact even while they themselves were evacuating. Our findings suggest that the high level of interaction maintained with students and their families during the storm was facilitated by close relationships established prior to the storm. Teachers intensified their communication with families after the disaster and expanded their roles to include social and emotional assistance. Finally, the role of teachers in this study differed in that it addressed essential disability-related needs. Teachers assisted in finding resources necessary for the daily functioning of these students, such as hygiene supplies and wheelchairs. Such support may have been critical given that emergency management systems often provide limited accommodations and unequal access to services for individuals with disabilities in disaster (Kailes, 2008; National Council on Disability, 2009).

Recommendations

Research has shown that school-based preparedness programs provide students with an increase of preparedness knowledge (Peek, 2008; Ronan et al., 2008) and are most effective when directly involving students in experiential learning (Morris & Edwards, 2008; Nikku et al., 2006; Ronan et al., 2008). However, the special education teachers in this study had little disaster preparedness training. The role that educators play in disasters can be strengthened through training that addresses the needs of students with disabilities. Resources such as lesson activities and visual aids are available to assist teachers in preparing their classrooms for disaster (Federal Emergency Management Agency, 2010). However, modification to existing preparedness curricula or the creation of new curriculum is needed to ensure that students with significant disabilities are equally prepared for disaster.

Teachers can provide a strong supportive role to their students after a disaster (Reich & Wadsworth, 2008; Vernberg & Vogel, 1993; Wolmer et al., 2005). Training efforts should include how to effectively link families to disability-related support after a disaster. Disaster-related information can be especially critical in the case of children with disabilities, whose needs are likely to be more complex and require additional support. Teachers would also benefit from training on how responses to disaster manifest psychologically in students with disabilities (National Association of School Psychologists, 2002) and how to refer students to mental health services, when needed.

This study is an interpretation of the experience of a small group of teachers and is best used to illuminate how teachers of students with

disabilities respond when their schools are directly affected by a natural disaster. Studies of other types of disasters as well as in other communities would help in further understanding the roles teachers of students with disabilities assume during disasters.

Authors' Note

Any opinions, findings, conclusions, or recommendations expressed in this article are those of the authors and do not necessarily reflect the views of the Center on Disability and Development at Texas A&M University.

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