PRESCHOOL TEACHERS’ PERCEPTIONS OF SELF-EFFICACY IN TERMS OF MEETING THE NEEDS OF STUDENTS FOLLOWING A CRITICAL INCIDENT
(The Example of Hurricane Katrina)

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Abstract
Hurricane Katrina highlighted teacher needs when serving students who have experienced a critical incident. The purpose of this single case study was to describe the perceptions of preschool teachers’ self-efficacy in terms of meeting the needs of students following a critical incident. These teachers had received into their classroom one or more students displaced by a critical incident, Hurricane Katrina. Specifically, using a survey with independent samples t test analysis, this study examined differences, by grade level, years of experience, and education level, in teacher perception of their addressing needs of displaced students. For the survey, a random sample was drawn from a single district population of K-5 teachers who had in class at least one student displaced by Hurricane Katrina. Results of the study indicated teachers with low self-efficacy were found to blame outside factors when things did not go as desired and no differences based on grade level taught or teacher educational level. However, teachers with fewer than five years of experience showed significantly less teacher self-efficacy. The findings contain implications for social change in that they demonstrated need for a plan to assist teachers in meeting the needs of critical incident students and a need to provide teachers with appropriate professional development.

Keywords: Preschool education, Teacher self-efficacy Critical incident Hurricane Katrina

INTRODUCTION
The Federal Occupational Health Organization defined (n.d.) critical incidents as highly traumatic occurrences caused by a stressful event and the victims could feel their lives have been threatened. To be a critical incident, a traumatic event has to be sufficient enough to overpower the individual’s coping abilities. When experiencing a traumatic event such as a critical incident, the ordinary physical and mental processes of a human being could cause them to become stressed. If a critical incident was exceedingly severe, a person could experience a sensitive arousal leading to Traumatic Stress. When individuals were exposed to a traumatic event, they were found to experience consequences such as poorer job performances, changes in the personality, anxiety attacks, poorer relationships with others,
reactions caused by depression, and thoughts of suicide. According to Flanagan (1954), a natural disaster falls into the critical incident category and could have caused stress to the educators as well as students. Therefore, teachers’ perceptions of self-efficacy could have been lessened by exposure to the hurricane, and in turn affected student learning.

A single case study took place at a north central school district in Mississippi where approximately 760 children displaced from Hurricane Katrina had enrolled. These children relocated from Louisiana and southern parts of Mississippi. This study placed an emphasis on how teachers portrayed their self-efficacy in meeting the needs of students displaced from Hurricane Katrina. This study was guided by the critical incident theory formulated by Flanagan (1954) Flanagan defined a critical incident as a disastrous event that is so severe that it could affect the mental and physical capabilities of a human. According to Flanagan, natural disasters were considered critical incidents; therefore, Hurricane Katrina could have affected the mental and physical capabilities of students who had lost their homes and had to relocate to another region.

Immediately following Hurricane Katrina, Mississippi State Superintendent Hank Bounds (2005) confirmed that the education community was a damaged system. He reported that many schools were totally destroyed or inoperable for months. Displaced school children from the southern part of Mississippi and parts of Louisiana were relocating throughout the United States. Many of the children and their families were relocating to other parts of Mississippi because their homes or places of employment were totally destroyed or heavily damaged. The problem of this study was it was not known how prepared teachers were in meeting the needs of all the students in the classroom.

Ware (2007) found that teachers with higher self-efficacy were more apt to remain optimistic during challenging events and put out more effort than their co-workers. On the other hand, teachers with low self-efficacy were found to blame outside factors when things did not go so well. Additionally, Collier (2005) pointed out that teachers who possess higher levels of self-efficacy were better at enhancing learning. Therefore, the purpose of this study was to investigate teachers’ perceptions of self-efficacy in terms of teacher preparedness as they incorporate into their classrooms students who have experienced a critical incident such as Hurricane Katrina. To better understand how critical incidents effect the education of children, other critical incidents are presented.

Goldberg, Fivush, and Sales (2004) conducted a case study on children who experienced Hurricane Andrew. These children were 3-4 years old and were interviewed a few months after the hurricane. Six years later, the children were interviewed again. In this study, levels of stress they had experienced grouped the children. These levels depended on the severity of their experience. Stress levels were labeled as high, moderate, and low. High levels of stress were defined as the victims being at home when their houses were demolished around them. Events occurred such as the roof caving in, trees falling into the homes, and glass flying around. Moderate stress was defined as the victims experiencing a severe storm with fallen trees and water creeping into their homes. For the most part, their homes were intact. A low stress was defined as children whose families had prepared for a storm, but only received heavy rainfall. In two interviews, it was found that every child was able to recall detailed events six years after the experience. In many cases children were able to recall twice as much information six years after the event occurred as they had recalled a few months after
the event. The first interview yielded that those who experienced higher stress reported fewer details than children who experienced moderate stress. However, six years after the hurricane, all three groups reported the same amount of information. Children who experienced higher stress during the storm required more questioning and probing than children from the other groups. The descriptions of the high stress group were more consistent than the others.

In a case study conducted on fourth-grade children who experienced Hurricane Floyd in 1999, Beatly, Bingham, McGhee, O’Brien, Skalko, and Russoniello (2002) identified distinguishable coping strategies the children used. These strategies included regulating emotions, withdrawing, criticizing self, becoming a problem solver, and blaming others for what happened. These methods of coping represented the struggle children were challenged with after experiencing unresolved issues relating to the hurricane. Beatly, et al. explained that coping strategies were a normal pattern in children who experiences critical incidents such as a natural disaster. The study suggested that intervention programs are needed to increase the success rate of the children’s ability to solve problems and regulate emotions. These interventions will reduce the needs of children in using adverse coping methods such as social withdrawal, criticizing self, and blaming others.

Beatly et al. (2002) described the social environment as an important factor in the development of healthy emotional individuals following a natural disaster. Following a natural disaster, the devastation and chaos of a social environment should be taken into consideration. Children whose homes were flooded need extra attention. Social systems are important supportive institutes that provide hope and support to these children. These support systems will help the children better accept what has happened and allow them to cope with the outcomes in a positive way. Programs should be designed in the social environment to decrease the usage of negative coping strategies such as blaming others for the aftermath of critical incidents. Decreasing negative coping strategies is important, but having essential resources following a disaster is also important.

LeGreca et al. (1996) conducted a study on the effects Hurricane Andrew had on school-aged children. It was discovered that some children experienced symptoms of stress disorders, but over time the symptoms declined. Furthermore, these stress disorders were found to be incapacitating and obstructing to a portion of the participant’s academic performance. It was also found that victimized children of natural disasters became so stressed that they would experience disturbing thoughts about the incident. They would think about what happened, what could have happened, and relived their experiences. At times, affected children would become detached from others or any sort of activity in which they felt could result in a disaster. Others were known to have nightmares about the catastrophic event and were afraid it would happen to them again. With the hurricane causing so much stress, many of these victimized children found it difficult to sleep at night. This sleep disturbance caused many victimized children to experience difficulty in concentrating in school.

The researcher found existing literature on children who have experienced critical incidents, but little information revealed how teachers addressed the individual needs of the students who had experienced a disastrous event. Therefore, the gap in the literature indicated that it is not known if teachers are capable of responding to and meeting the individual needs of students who have experienced a critical incident. Teachers were disrupted in the middle of
a school term and returned to school with added problems such as additional students who could have been traumatized from the hurricane.

**METHOD**

This study is trying to respond to the three hypotheses: To examine hypothesis 1—to what extent, do differences exist on teachers perceptions by grade—an independent sample *t* test was conducted on the total satisfaction score by grade (K-2 vs. 3-5). To examine hypothesis 2—to what extent, do differences exist on teachers perceptions by years of teaching experience— a *t* test was conducted on the total satisfaction score by years teaching experience (less than 5 vs. more than 5). To examine hypothesis 3—to what extent, do differences exist on teachers perceptions by education level—a *t* test was conducted on the total satisfaction score by education level (undergraduate and graduate).

A quantitative survey was implemented to address the following research question: What differences are there in teacher self-perception of their efficacy in addressing needs of displaced students following a critical incident based on grade level taught, years of experience, and education level? The total population in this study was 354 teachers from a north central school district who were assigned in grades K-5, and had received at this one student who was displaced from Hurricane Katrina. A sample size of 184 was determined by MACORR, an online sample size calculator using a confidence level of 95% with a 5% confidence interval. Participants were selected from a container by a random selection method. Surveys and consent forms were mailed to the 184 teachers who were chosen by random selection. The teachers were instructed to mail the completed surveys back to the researcher using the school mail. The deadline for the returns was set at exactly two weeks later, or the fourth week of the study. One-hundred eight of 184 respondents returned completed surveys. A follow-up procedure was not employed because a target rate of 100 respondents was reached and the rate of return was 66%.

The instrument was titled “Teacher Efficacy Following a Critical Incident.” This instrument consisted of 10 questions that assessed the perceptions of teachers’ self efficacy of how met the needs of Hurricane Katrina. This instrument was adapted from a “Teacher Self-Efficacy”, scale. The “Teacher Self-Efficacy, scale” was written by Ralph Schwarzer, Gerdamarie Schmitz, and Gary Dayner (1999). Through emails, permission was granted by Ralph Schwarzer to use the survey as a tool to design a new instrument. In several studies conducted by Schwarzer (1999), a Cronbach’s alpha tested reliability of 10 Teacher Efficacy Scales in three samples that yielded, $\alpha = .67$, $\alpha = .76$ and $\alpha = .65$. Therefore, the researcher used the Cronbach’s alpha to test for reliability of the “Teacher Efficacy Following a Critical Incident.”

Creswell (2003) stated that a pilot study could be used to test content validity and reliability by using results to improve questions on a questionnaire. Therefore, to test for content validity and reliability a quantitative pilot study was conducted on a smaller scale prior to the main study. This pilot study was conducted at the same school district, but did not include participants from the main study. In total, 21 participants were asked to participate, but only 15 returned the surveys. These participants were chosen by purposive sampling, and not included in the main study.
Another method used to achieve content validity was the use of raters. To assess content validity, 10 raters were randomly selected from the total population of 354 teachers earlier defined as appropriate. These raters were deemed appropriate because they had been assigned to grades K-5 from the north central school district in Mississippi and had received at least one student displaced from Hurricane Katrina. However, none of the raters were used in the main study. The raters were asked to complete a questionnaire to indicate if the survey items were relevant or not relevant. All raters rated all items as relevant. Therefore, revisions of the survey were not warranted.

Fifteen teachers participated in the pilot study; 6 (40.0%) have been teaching for less than five years and 9 (60.0%) have been teaching for more than five years. Eleven (73.3%) of the students have an undergraduate degree and 4 (26.7%) have a graduate degree. Seven (46.7%) of the participants have a grade assignment of K-5 and 8 (53.3%) have a grade assignment of 3-5. A Cronbach’s alpha test of reliability was conducted on the ten Classroom Normalcy satisfaction items; the alpha reliability for the ten items is, $\alpha = .78$.

For analyzing quantitative data collected from the “Teacher Efficacy Following a Critical Incident” survey, SPSS was used by the researcher. The survey used an independent sample t test to evaluate the differences on the individual groups used in the study. Green and Salkin (2005) reported that an independent sample t test is useful when evaluating differences among groups with two independent variables. This study had three groups with two independent variables in each group. The groups consisted of grade assignments (K-2 vs. 3-5), years of teaching experience (less than 5 years vs. 5 or more) and education level (undergraduate vs. graduate). The researcher entered the data into SPSS and analyzed the outcome. A Cronbach’s alpha test estimated reliability for the survey instrument. Construct validity of the survey was established by the use of the interviews as a follow up study to explain any discrepancies found in the survey analysis. Content validity of the survey was established by asking 10 teachers to rate the items on the survey. To assess content validity, 10 raters were randomly selected from the total population of 354 teachers who were assigned to grades K-5 in the North central school district in Mississippi and had received at least one displaced student from Hurricane Katrina. None of the raters were participants in the study. The raters were asked to complete a Raters’ response questionnaire to indicate if the survey items were relevant or not relevant. All raters rated all items as relevant. A scale score was created by adding the relevant responses of all 10 items and dividing by 10.

**FINDINGS**

In this study, one-hundred eight individuals participated. Fifty (46.3%) were K-2 and 58 (53.7%) taught grades 3-5. Forty-three (39.8%) of the teachers had taught for less five years, while 65 (60.2%) taught for more than five years. Forty-nine (45.4%) individuals were undergraduates and 59 (54.6%) were graduates. A Cronbach’s alpha test of reliability was conducted on the ten Teacher Efficacy satisfaction items; the alpha reliability for the ten items is, $\alpha = .85$. To examine hypothesis 1, an independent samples $t$ test was conducted on teacher self-perception of their efficacy in addressing the needs of displaced students following a critical incident by grade level taught (K-2 vs. 3-5). Results of the one-sample K-S test and Levene’s test of equality of variance revealed that the assumption of homogeneity was violated and values for equal variance not assumed were used. The results are summarized in
Table 1, where total satisfaction scores for K-2 ($M = 1.87, SD = .36$) were not significantly different than total satisfaction scores for 3-5 ($M = 1.90, SD = .52$), $t (101.50) = -.417, p = .678$. The null hypothesis of no differences by grade level is accepted. Table 1 represents data collected for hypothesis 1.

Table 1-Independent Samples $t$ test on Total Satisfaction by Grades

<table>
<thead>
<tr>
<th>Variable</th>
<th>$T$</th>
<th>$Df$</th>
<th>Sig.</th>
<th>$M$</th>
<th>$SD$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Satisfaction</td>
<td>-.417</td>
<td>101.50</td>
<td>.678</td>
<td>1.87</td>
<td>.36</td>
<td>1.90</td>
<td>.52</td>
</tr>
</tbody>
</table>

Fredriksen (2004) reported that during the elementary years, students who felt closer to the teacher were found to be more socially and emotionally adjusted to school. Furthermore, students who bonded with their teachers were found to get along with their peers better than those who did not. In middle school, it was found that students who purposefully sought teacher approval had fewer problems in adjusting to a new environment, had higher self-esteem, and suffered lower levels of depression. These findings suggested that teachers should find ways to lessen the stress that is associated with school and provide more opportunities with interaction between themselves and their students.

To examine hypothesis 2, an independent samples $t$ test was conducted on teacher self-perception of their efficacy in addressing the needs of displaced students following a critical incident by years of experience (less than 5 years vs. more than 5 years). Results of the one-sample K-S test and Levene’s test of equality of variance revealed the assumption of homogeneity of variance was met. The results are summarized in Table 2, where total satisfaction scores for the less than 5 years group ($M = 2.06, SD = .50$) were significantly higher than total satisfaction scores for the more than 5 years group ($M = 1.77, SD = .38$), $t (106) = 3.41, p = .001$. The null hypothesis of no differences by years of experience is rejected.

Table 2- Independent Samples $t$ test on Total Satisfaction by Years of Experience

<table>
<thead>
<tr>
<th>Variable</th>
<th>$T$</th>
<th>$Df$</th>
<th>Sig.</th>
<th>$M$</th>
<th>$SD$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Satisfaction</td>
<td>3.41</td>
<td>106</td>
<td>.001</td>
<td>2.06</td>
<td>.50</td>
<td>1.77</td>
<td>.38</td>
</tr>
</tbody>
</table>

Ware (2007) found that teachers with higher levels of teacher self-efficacy were more capable of overcoming challenges in the classroom and could continue to teach well following an emergency. When asking participants about teaching important subjects to difficult students, 10% admitted to being very dissatisfied in regards to their self-efficacy, while 45% very noted as being very satisfied. It appeared that years of experience was a factor in the challenge of teaching students who were facing difficulty in their lives. However, most of them admitted that as time passed they became more capable teachers.
To examine hypothesis 3, an independent samples t test was conducted on teacher self-perception of their efficacy in addressing the needs of displaced students following a critical incident by education level (undergraduate and graduate). Results of the one-sample K-S test and Levene’s test of equality of variance revealed the assumption of homogeneity of variance was violated and values for equal variance not assumed were used. The results are summarized in Table 3, where total satisfaction scores for the undergraduate group ($M = 1.93, SD = .55$) were not significantly different than total satisfaction scores for the graduate group ($M = 1.85, SD = .35$), $t (77.98) = .88$, $p = .382$. The null hypothesis of no differences by education level is accepted.

Table 3- Independent Samples t test on Total Satisfaction by Education Level

<table>
<thead>
<tr>
<th>Variable</th>
<th>$T$</th>
<th>$df$</th>
<th>Sig.</th>
<th>$M$</th>
<th>SD</th>
<th>$M$</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Satisfaction</td>
<td>.88</td>
<td>77.98</td>
<td>.382</td>
<td>1.93</td>
<td>.55</td>
<td>1.85</td>
<td>.35</td>
</tr>
</tbody>
</table>

Collier (2005) described successful teachers as ones that recognized they played a significant role in student learning and set higher goals for their students. Furthermore, these teachers expected more from their students and were more apt to take personal responsibility for their student’s education endeavors. Collier rationalized that not only did teachers with higher levels of self-efficacy set higher goals for their students, but they established a set of higher goals for themselves and the teaching profession. Curran (2003) pointed out that teachers need to be able to understand their own self-worth as well as that of others. Educators must recognize that every person has culture, with a unique set of beliefs, preconceptions, and presumptions about how humans should behave. Furthermore, teachers must recognize differences in students concerning culture, race, and ethnicity. To achieve fairness, teachers must overcome subjectivity and learn about the background of all their students.

CONCLUSIONS AND RECOMMENDATIONS

Teacher efficacy was found to play an important role in student erudition. Collier (2005) explained that teacher efficacy was influenced by how teachers perceive themselves as educators. In other words, the teacher’s personal beliefs system significantly impacts decision-making and instruction. Furthermore, Collier explained that teachers’ perceptions of self-efficacy greatly impacted student learning. Teachers’ perceptions of self-efficacy could have made a significant difference in how the teachers were able to address the unfamiliar needs of students who were possibly traumatized by the hurricane. Therefore, how teachers perceived themselves as having self efficacy following Hurricane Katrina was found to be an important topic for investigation. This study concluded that teachers’ perceptions of self efficacy were important and grade assignment and level of education did not appear to be affected by Hurricane Katrina. However, teachers with less than five years of teaching experience appeared to be impacted by Hurricane Katrina to a greater degree than others, and possibly needed additional assistance.
From the results of this study, the researcher made the following recommendations for further studies:

1. Replicate this study at another grade level or a geographic region that was more heavily exposed to the disaster itself.
2. Conduct a study that involves parental support compared to academic achievement following a critical incident.
3. In terms of meeting the needs of teachers following a critical incident, conduct a needs assessment from teachers who have experienced a similar critical incident.
4. Conduct a study assessing the emotional needs of teachers following a critical incident in a geographic region that has been heavily exposed to a natural disaster.
5. In terms of crisis management, conduct a study to determine attitudes and perceptions of teachers using an existing plan in their district as it relates to a specific critical incident.
6. Conduct a study to determine if there is a correlation between student exposure to Hurricane Katrina and academic success.
7. Conduct a study to determine teachers’ input of information that should be added to a protocol that would meet the individual needs of a student following a critical incident.

In the midst of a disaster, teachers are great resources in positively influencing student success (Collier, 2005). Teachers’ self efficacy was found to be important because those with higher levels of self efficacy were more likely to address the needs of all students with appropriate plans and reaching materials. On the other hand, teachers with low self-efficacy were found to blame outside factors when things did not go as well as desired (Ware, 2007). Since teachers’ perceptions of self-efficacy were found to be directly related to student learning, this study indicated a need for a support system following a critical incident for teachers. Further, this study recommended a pro-active plan to be in place prior to a critical incident that included staff development training.

References


Fredriksen, J. (2004). Positive teacher-student relationships are seen through a variety of psychological models. New Directions for Youth Development, 103, 45-52.


PART 1: Teacher Efficacy Following a Critical Incident

The purpose of this voluntary survey is to gather information from teachers involving meeting the needs of displaced students following a disastrous event such as Hurricane Katrina. Your participation is needed and deeply appreciated!

Directions: Each item below asks you to rate items following Hurricane Katrina. Circle the items on the right that best describes you.

| In terms of satisfaction AFTER Hurricane Katrina, I would rate my ability for the elements below | Scale of Satisfaction |
|---|---|---|---|---|---|
| | Very Satisfied | Satisfied | Neutral | Dissatisfied | Extremely Dissatisfied |
| 1. I can teach important subject content to difficult students. | 5 | 4 | 3 | 2 | 1 |
| 2. I can sustain a positive relationship with parents even when conflicts occur. | 5 | 4 | 3 | 2 | 1 |
| 3. I can reach difficult students when I try hard. | 5 | 4 | 3 | 2 | 1 |
| 4. I am more capable of addressing the needs of students as time progresses. | 5 | 4 | 3 | 2 | 1 |
| 5. I can maintain composure and teach well even when disrupted by a disastrous event. | 5 | 4 | 3 | 2 | 1 |
| 6. I am responsive to the needs of my students even when I am experiencing a bad day. | 5 | 4 | 3 | 2 | 1 |
| 7. I can put forth a positive influence on personal and educational growth of all my students. | 5 | 4 | 3 | 2 | 1 |
| 8. I can initiate innovative projects with all my students when faced with oppositions. | 5 | 4 | 3 | 2 | 1 |
| 9. I can construct creative ways to teach well even when faced with constraints. | 5 | 4 | 3 | 2 | 1 |
| 10. I can motivate all my students to participate in innovative projects. | 5 | 4 | 3 | 2 | 1 |

PART 2: Demographic Survey Directions: Each item below asks you to describe yourself. Circle the number on the right that best describes you.

<table>
<thead>
<tr>
<th>What best describes your years of teaching experiences?</th>
<th>2= More than 5 years</th>
<th>1= Less than 5 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>What best describes your education level?</td>
<td>2= Graduate</td>
<td>1= Undergraduate</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>What best describes your grade assignment?</td>
<td>2= 3-5</td>
<td>1= K-2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td></td>
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</tbody>
</table>

OKULÖNCESİ ÖĞRETMENLERİNİN KRİTİK BİR OLAY SONRASI ÖĞRENCİLERİN GEREKSİNİMLERİNİ KARŞILAMALARINA DÖNÜK ÖZ YETERLİK ALGILARI
(Katrina Kasırgası Örneği)

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Özet


Bulgular: Araştırma ile öğretmenin öz yeterlik algısında düşük bir öz yeterliğe sahip olduklarını bulgulanırken, eğitim seviyesinin veya okuttuğunu sınıfın seviyesinin farklılık oluşturmadrığını ortaya koymaktadır. Bununla birlikte deneyimi beş yılda olan öğretmenler öz yeterlikte deneyimi beş yılda fazla olanlara göre anıltılır bir şekilde daha az bir öz yeterlik göstermişlerdir.

Öneriler: Elde edilen sonuçlarla bakarak, kritik bir olayı yaşayan öğrencilerin gereksinimlerini karşılamalarında öğretmenler için oluşturulabilecek bir yardım planı ve bu öğretmenlere uygun mesleki bir gelişim olanağı sağlama gerekği gibi bir takım büyük katkıları ihtiyaç olmuştur.

Anahtar Kelimeler: Okulöncesi Eğitim, Öğretmen öz yeterliği, Kritik olayın Katrina kasırgası...