The Student Storm Survey©: College Students’ Thoughts on their University’s Response to a Natural Disaster

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ABSTRACT

Hurricanes Gustav and Ike devastated the region that our University serves. Near the start of the semester, only one of the ten scheduled class days could be completed and administrators asked students and faculty to “continue the learning process” online via Blackboard©, our Electronic Delivery System (EDS). The Student Storm Survey© (SSS) examined student reaction to shifting from “brick-and-mortar” to “online” instruction on EDS as well as other storm-related decisions.

A small majority of the respondents reported that they wanted to work on EDS assignments, though most failed to complete them while the University was closed; most disagreed that such assignments helped them return to school. With respect to the University’s decisions about when to close and reopen, overall, students were satisfied with these decisions, but those whose homes suffered the most damage were the least content. Suggestions for improving EDS effectiveness to continue learning, and making more informed decisions about school reopenings after future emergencies are presented.

Out of necessity, universities in the Gulf South Region are forced to prepare for the damage and disruption caused by tropical storm activity. Hurricane Emergency plans focus on public safety and the protection of property in the event of an approaching storm (Nicholls State University, 2008). However, efforts can be made to minimize the disruption of the academic workings of the institution and facilitate the students return to campus life.

Still, hurricanes are very disruptive events. There are a number of studies documenting the effects of hurricanes on the psychological wellbeing of the general populace. For example, Kelly et al. (2010) analyzed how exposure
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The current research was conducted at a comprehensive, public university in the southern United States, with a student body of approximately 10,000. The study aimed to examine student response to Hurricane Katrina, which made landfall on September 1st, 2008, in Louisiana, and the University’s response to the storm. The research focused on understanding how students perceived the University’s emergency plan and the effectiveness of the University’s communication strategies during the disaster.

**The University**

The University is located in a region affected by Hurricane Katrina and its aftermath. The study aimed to explore students’ perceptions of the University’s emergency plan and the impact of the storm on their academic and personal lives.

**METHOD**

**Participants**

A total of 91 undergraduates registered for two courses: Developmental Psychology and Social Psychology, which were offered in the fall semester of 2008. Students were asked to complete the survey at home and return it as soon as possible. The vast majority (73.6%) completed the survey from September 22nd through September 24th, though surveys were accepted until October 6th.

**Procedure**

Surveys were distributed in class. Verbal instructions emphasized survey data might aid future students. Students were asked to complete the survey at home and return it as soon as possible. The vast majority (73.6%) completed the survey from September 22nd through September 24th, though surveys were accepted until October 6th.

**RESULTS AND DISCUSSION**

An alpha level of .05 was maintained for all statistical tests. Since a number of students failed to complete all the SSS items, sample sizes will be reported for each analysis. Unless otherwise noted, SSS Likert-type items ranged from 1 = “strongly disagree” to 5 = “strongly agree.” Data are organized into two sections. In the first, items concerning continued learning while the University was closed are displayed; in the second, items relevant to the length of closure and related issues are presented.

**Continued Learning while the University was Closed**

The Student Storm Survey© attempted to explore student opinions regarding the utility of University’s designated EDS in the aftermath of Hurricanes Gustav and Ike. Many of the remaining items treat Gustav and Ike as a single “event” since both resulted in emergency school closures. The following SSS items seem most germane: “Post- ing new assignments for my classes on Blackboard© while Nicholls was closed helped me prepare to return to school” (EDS-Assignments-Helped Return); “While Nicholls was closed I wanted to work on my Blackboard© course assignments” (Wanted-EDS-Work); and finally, “After Nicholls closed I checked the Blackboard© website for new assignments on the following days” (Daily-EDS-Work). Days the school was closed/reopened was embedded in the SSS to help students with chronology. The SSS utilized fill-in-the-blank, multiple-choice, and Likert-type items. Most SSS items contained parallel items for each storm; the survey had an item about Hurricane Gustav followed closely by the same item about Hurricane Ike.

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the University briefly reopened; therefore, “Total-Days-CHECKED-EDS” ranged from 0-17 days. For data on the EDS items are presented as Table 1.

Students’ opinions of using EDS to continue learning after the emergencies are disappointing. The majority of students “disagreed” with the notions that EDS assignments helped them to return to Nicholls, or that they could complete most EDS assignments. The average number of times they checked EDS assignments was about once every other day, but 24 students (26.3%) looked at the EDS 3 times or less in 17 days, or 1.24 times per week. One student’s comments provided an explanation for why they did not check the EDS more frequently: “How could I check Blackboard® when I didn’t have power, much less the Internet?” (Anonymous Developmental Psychology Student, September, 22, 2008). Her comment is echoed by certain survey items; for example, students indicated that on average, they were without electricity for over seven days (M = 7.83, SD = 4.78, n = 88) and that some remained without power (or had limited generator power) for as many as 28 days. Data indicate that the typical student was without Internet access for over nine days (M = 9.54, SD = 8.82, n = 89). Some remained without for 31 days. For comparison, cell phone service was reportedly down only about a day and a half on average (M = 1.61, SD = 2.64, n = 88). It should be noted that some of the same students who reported being without internet access for weeks indicated that they checked the Nicholls’ EDS within days after Gustav while they were without internet service! It is possible that some checked at a friend’s house, at public hot-spots, via internet-enabled cell phones, or relief-organization sponsored kiosks set up for storm victims.

To investigate internet access and student satisfaction with the EDS further, a Spearman’s rho was computed between the “EDS assignments helped me return to school” and the number of days “without internet service” items. The correlation was significant (rho = -0.346, p<.001, n = 89). The longer the student reported they were without internet access, the less they “agreed” that EDS assignments helped them return to school. You cannot surf the web using your cell phone/internet cables when wireless does not function.

“Total-Days-CHECKED-EDS” variable aggregates the times a student logged-on to Blackboard® over seventeen days. Figure 1 presents a graph of the data partialed out each day from 08/29/08 (when the University closed for Gustav) to 09/14/08 (the day before the University reopened after Ike).

The graph clearly shows dips in EDS access on the days of Hurricane Gustav’s landfall (September 1st, 2008) and Hurricane Ike’s landfall (September 16th, 2008). There is also a “scalloped” pattern present after Gustav (a large dip followed by a general increase in reported EDS checks each day thereafter), until “checks” dropped sharply again for Ike.

At first the current authors thought this “scallop” was entirely due to the day-by-day recovery of the local infrastructure. As more of the local internet reconnected, more students had access to the EDS. No doubt infrastructure recovery accounts for part of this trend; but upon reflection, the current authors would suggest a “Skinnerian” (Ferster & Skinner, 1957) modification to the infrastructure explanation. The students’ response set may (in part) reflect a “fixed interval” reinforcement schedule. It is likely that the last thing most students wanted to think about after Gustav was school, they were too busy attending to their friends and loved ones to even think about it. But if the accessibility (‘pay-off’) somehow didn’t fit), school reopening approached, the responses were more frequent and therefore, more frequent (more student “checks”). Administrators and faculty should remember this when planning for future hurricanes; sometimes academicians forget that students actually have lives.

Speaking of academicians, we need to mention another vital determinant of students’ continued learning via EDS in emergencies, namely: CONTENT. Based upon informal conversations with our colleagues we would suggest that the main way faculty chose to continue the academic process after Gustav was an e-mail to: “read chapters 4-6 in your text”. Whether or not that is appropriate and effective is a topic for later discussion. To their credit, the majority of students (a slight majority) reported that they wanted to work on their EDS assignments while school was closed. The most common reason students checked the EDS (Total-Days-CHECKED-EDS). The more a student self-reported that they wanted to work on the assignments the more they checked the EDS. The correlation between wanting to work on EDS (Wanted-EDS-Work) to completing most of the work (Completed-Most-EDS-Work) was even stronger. The more they wanted to work on the assignments the more they completed them. The most striking correlation was between completed most assignments (Completed-Most-EDS-Work) and feeling that the Blackboard® assignments helped them prepare to return to school (Wanted-EDS-Assignments-Helped-Return). Recall that when rating agreement with the item: “Posting new assignments for my classes on Blackboard® helped me prepare to return to school” the modal response was “strongly disagree” (36 of 91 students or ~40%); however, the more a particular student completed their EDS assignments, the more likely they were to indicate that the assignments helped them return to school (rho = .729, p<.001, n = 91).

### Table 1

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Median</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posted EDS assignments helped me return (n=91)</td>
<td>3.69</td>
<td>3.10</td>
<td>2.00</td>
<td>1</td>
</tr>
<tr>
<td>Wanted to work on EDS Assignments (n=90)</td>
<td>5.37</td>
<td>3.62</td>
<td>5.00</td>
<td>1</td>
</tr>
<tr>
<td>Completed most EDS Assignments (n=91)</td>
<td>3.34</td>
<td>2.97</td>
<td>2.00</td>
<td>1</td>
</tr>
<tr>
<td>Total days checked EDS for Assignments (n=91)</td>
<td>7.33</td>
<td>4.85</td>
<td>7.00</td>
<td>3</td>
</tr>
</tbody>
</table>

*1: where 1 = “Strongly disagree” and 10 = “Strongly agree”
2: potential range for this is 0 – 17 days including 2 days reopened after Hurricane Gustav.
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Table 2
Spearman’s Correlations between Electronic Delivery System Variables

<table>
<thead>
<tr>
<th>Question</th>
<th>Post ed Assignments Helped me return</th>
<th>Wanted to work on ed assignments</th>
<th>Completed most ed Assignments</th>
<th>Completed days checked ed for Assignments</th>
</tr>
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<td></td>
<td></td>
<td>-.41***</td>
<td>-.72***</td>
<td>-.430***</td>
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<td></td>
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<td>-.348**</td>
<td>-.227**</td>
<td>-.387***</td>
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| * = p<.05, ** = p<.01, *** = p<.001 (n=91) |

Table 3
Descriptive Statistics of Students' Ratings of Nicholls' Reaction to Storms and Length of Closure

<table>
<thead>
<tr>
<th>Question</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Median</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall happy with Nicholls’ reaction to Gustav (n=90)</td>
<td>7.43</td>
<td>2.09</td>
<td>8.00</td>
<td>8</td>
</tr>
<tr>
<td>Overall happy with Nicholls’ reaction to Ike (n=90)</td>
<td>7.32</td>
<td>2.59</td>
<td>8.00</td>
<td>10</td>
</tr>
<tr>
<td>Nicholls closed long enough for Gustav (n=90)</td>
<td>6.79</td>
<td>3.28</td>
<td>8.00</td>
<td>10</td>
</tr>
<tr>
<td>Nicholls closed long enough for Ike (n=90)</td>
<td>7.92</td>
<td>2.68</td>
<td>9.00</td>
<td>10</td>
</tr>
</tbody>
</table>

| *where 1 = ‘Strongly disagree’ and 10 = ‘Strongly agree’ |

To test this hypothesis, two other SSS items: “My home received significant damage from Gustav” (Mdn = 4.26, SD = 2.93, n=90) and its parallel item for “Ike” (Mdn = 2.23, SD = 2.27, n=90) were analyzed. A Wilcoxon Signed Ranks test of the items indicated that students reported significantly more home damage from Gustav (Mdn = 3.5) than from Ike (Mdn = 1.0); z = 5.67, p<.001, n = 90. Test results suggest the notion that the “Long-enough-Gustav” “Long-enough-Ike” difference indeed may be due to the “greater threat” that Hurricane Gustave posed.

When the “My home received significant damage...” items were explored further, another issue was apparent. A Spearman’s rho correlation was computed between the “Long-enough-Gustav” and the “My home received significant damage from Gustav” (Home-damage-Gustav) items. The correlation was nonsignificant (rho = 0.29, p<.05, n = 90); however, the Spearman’s rho between “My home received significant damage from Ike” (Home-damage-Ike) and its corresponding “Long-enough-Ike” item was significant (rho = 0.342, p<.001, n = 90).

Students with more home damage due to Ike felt the University should have stayed closed longer than a little more than three calendar days; but this effect was not apparent for the Gustav closure of twelve calendar days. The additional days for Gustav may have provided students who suffered more property loss time to recover; the time off for Ike might not have been sufficient. An alternative explanation might lie in “bereavement overload.” Hurricane Ike occurred less than two weeks after Gustav. The effects of Ike might have been exacerbated by Gustav.

The patterns in the “Long-enough...” and “Home-damage...” data indicate how complex decisions to reopen after a disaster can be. When deciding to reopen administrators should consider damage on both a community-level as well as an individual-level, recognizing that some students may have suffered much more than others (e.g. the substantial number of students whose homes were devastated by hurricanes twice in two weeks). Perhaps there should be greater attention paid to these students after a disaster.

CONCLUSIONS

It is easy to conclude that in the face of a hurricane the educative process cannot resume until things get entirely back to normal. The current authors would suggest such reasoning is tantamount to learning helplessness and just as ineffective. The Student Storm Survey© suggests that a substantial number of students will not want to “deal with school until it reopen[s]; but a substantial number do! EDS instructional techniques will have to be designed to engage both those students wanting to continue instruction via the internet and engage those who do not.

While we cannot offer much in the way of specific advice regarding when a university should close and reopen, we can say surveys of student opinion should not be the sole (or even the primary) determinant. We can however, offer the following suggestion to administrators based upon survey data: Administrators should not reopen before the university community is ready, nor fail to reopen when it is. Make the decision after weighing community-level and individual-level factors. Be fair to all, but make allowances for students who may have suffered more than others; these are not easy tasks, especially while trying to respect academic integrity.

Make students aware of the resources available to them and their families. Nicholls distributed supplies shortly after the storms, but some students reported they could not attend class because they had to wait in a line to apply for government assistance. Perhaps these students could be directed to make applications for government disaster assistance available on campus as well as knowledgeable people to answer questions about the same. Make students aware of opportunities to volunteer to help others in their community, and where on campus they can receive counseling if necessary.

Finally, don’t forget that faculty members may have suffered losses as well. Treat them with the respect you expect in return; success or failure of your efforts will largely depend upon their good works.

To shift focus now to what faculty members can do, the current authors would like to return to the subject of counseling again. Most educators are not psychological counselors, but we are ethically bound to direct troubled students to trained counseling professionals. We can however, definitely tell them that nothing, not even academics is as important as their well-being and the well-being of their loved ones.

Immediately after the storms, some of our students lost their jobs; many others had to quit school to help their families. Weems et al. (2007) identified symptoms of Posttraumatic Stress Disorder (PTSD) in Katrina evacuees. Some of our students’ experiences rivaled those of Ka-thrina evacuees, and were traumatized by their experience. Unfortunately, as a direct result, several tried to commit suicide. As faculty, we should let our students know that our institution is also a “community” where caring people will work with them to stay in school and (if necessary) help to put their lives back together. A recent article in a local newspaper reminded us of this fact by citing the State’s mental health needs after Hurricane Katrina and noting that: “…college and university suicide prevention and intervention programs are often the first line of defense for those battling mental illness” (Buskey, 2013, July 26).
We can offer the following additional suggestions to faculty based upon survey data and general observations:

1. The time to communicate what you want students to do during an emergency is BEFORE the emergency. You can’t give students the perfect assignment after the school has closed and the internet is down. Perhaps initial assignments should be printed in your syllabus at the start of the semester, clearly labeled “do not attempt until school closes due to an emergency”.

2. The Nicholls State Continued Learning Policy advises faculty to be “flexible” in the assignments given while the University is closed. We take this to mean that work should not “overwhelm” already stressed students; faculty should realize that some students may be incapable of completing the assignments; partial-credit anyone?

3. The Policy also suggests being “imaginative” in fashioning assignments. Not everyone is imaginative, so we have a simple solution called “ancillary materials”. A book-rep near you is just dying to tell you about them. Any faculty member who avails themselves of these mostly free (they come with the book) materials will improve their teaching. Any faculty member who lives in a coastal area who does not avail themselves of these materials (or create their own) is one major hurricane away from shortchanging their students during an extended school closure.

4. The current authors would suggest that faculty make assignments that can be accomplished easily without reliable electricity. If a student has to stay on-line to read web-pages hour after hour draining power from their laptop, or print out an assignment to complete it (duh! No power), it probably won’t get done. Follow the GOGOLF (Get-On-Get-Off-Line-Fast) principle for communicating assignments. Pick and choose assignments using the GOGOLF principle.

5. Finally, a number of students went online to the EDS trying to continue learning only to find that their instructor had nothing there. Post something immediately, even if it’s just a message telling them to be safe and some simple assignments easily accomplished. As far as you can, let students know when you expect additional assignments to be posted during the closure if you don’t have them ready, if you do, post them immediately. Reassure students that you will be flexible when classes begin again, and that they will be able to finish the work necessary to complete the course. Take into account their circumstances, lighten-up, and where possible, don’t leave them twisting in the wind.

REFERENCES


Author Note

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