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Exploring the Role of Communication in Crisis Readiness

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Exploring the Role of Communication in Crisis Readiness

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Concordia University–Portland

College of Education

Dissertation submitted to the Faculty of the College of Education

in partial fulfillment of the requirements for the degree of

Doctor of Education in

Instructional Leadership

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Abstract

The goal of this study was to examine the role of communication in campus crisis readiness at an institution of higher learning that experienced a major crisis. In order to have a good understanding of the issues, the challenges, and the breakthroughs, the researcher interviewed an institution's executives who had emergency and crisis readiness responsibilities. This study was designed as a case study to gain an in depth understanding of what prevails based on three instruments: interviews, online questionnaire, and document analysis. This study involved eight interviewees in a sit-down interview and 21 respondents in an anonymous online questionnaire. Evidence indicates the institution has made significant strides in the areas of communicating with stakeholders, engaging and monitoring of the social media, and making extensive use of technology in building a culture of campus crisis readiness. Respondents credited leadership for taking decisive action after the previous incident that served as a turning point in the institution's history of crisis readiness.

Keywords: communication, emergency readiness, schools, shootings, preparedness, educators, response, recovery

Dedication

To a widow and warrior,

A woman who couldn't read or write her name,

But whose love endures in my heart.

Her love for work and work for love

Had no measure or censure

But lots to be treasured.

For enduring my troubled youth,

With bruises and burns from all the fires I lit,

And the taunts from the mockingbirds-

That I'd be a jailbird.

Instead, her love nurtured me to be a hummingbird,

Pollinating crops across frontiers.

To my mother, my hero—Catherine Akwi [RIP]

Am grateful to my extended family of villagers. I hold each of you in high respect for their commitment to learning and education. I am grateful to Dr. Ambe of FEMA, Dr. Yvonne Tiandem-Adamu, Dr. Russ Decker of Lima, Ohio, and Dr. Christian Tekwe of TX, and Dr. Samuel Ticha, and my former boss in Singapore, Dr. Ivan Sin.

You are my unsung heroes. Your words and works inspire me profoundly. For that, I count myself as divinely fortunate to have benefited from your generosity. Wherever this journey takes me, I will carry the light, the love and the torch you have given with utmost respect; so I can help others find their own path on the hazy nights, as you'd done to me in these trying times. To you all, I say IOU! Gratias! *Mbene wen moh! Xie-xie, Merci, Danke!*

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Chapter 1: Introduction

Introduction to the Problem

Devastating emergencies and crises have the ability to do actual harm to a community or a community's interest. School violence and school shootings are contemporary-focused events because they tend to cause mass fear and invoke a deep human response (Muschert, 2007). Emergencies and crises such as school shootings have the potential to gain media and political attention. Owing to their rarity, focusing events are an important predictor of the opportunity to spur changes in policy and beyond (O'Donovan, 2017).

Research on the topic of crisis readiness in schools and institutions of higher learning has revealed that ineffective communication is a precursor to ineffective crisis response (Dillon, 2016). In the context of schools, mistakes in planning, response, or recovery can be very costly to an institution and its community. In the United States, school shootings have risen sharply from 6.4 to 16.4 annually over a 10-year period (Thompson et al., 2017). By their very nature, such focusing events are undesirable, particularly because institutions have a highly vulnerable and defenseless population of students and staff. For this reason, developing an understanding of what it takes to coordinate and communicate before, during, and after a crisis is invaluable.

In recent decades, many schools have invested in physical security systems; however, much remains to be done in the area school culture with respect to sharing lessons learned to guide future response (Crepeau-Hobson, Sievering, Armstrong, & Stonis, 2012). Caldwell (as cited in Wai-Yin Lo, 2004) stated that many institutions still trail in the area developing effective communications channels, inclusive and collaborative systems, professional development, and leadership. Public scrutiny and the need for safety of students, staff, faculty, and institutions has also increased.

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In response to the pressures, the leaders of institutions have invested more in other areas such as threat analyses, writing of emergency operations plans, and installation of physical systems to enhance emergency readiness. Authorities have also been called to increase pre-incident planning, increase information sharing with stakeholders, and effect changes in organizational culture (Topadzhikyan, 2013). Managing emergencies and the complexity of these systems will benefit from a more effective understanding and of the role that communication plays in campus crisis readiness.

Conceptual Framework

The Community Capitals Framework (CCF) provides as a holistic framework with respect to the interdependencies in the area of crisis readiness. Having such broad-spectrum framework comes in handy because communication and leadership are complex, multi-disciplinary issues that have many inter-dependencies internally and externally. CCF also sheds light on community preparedness, response, and recovery from a disaster (Ormond et al., 2018). More importantly, it outlines the significance of pre-incident bonding and bridging social capital—both of which facilitate community action toward successful community recovery (Stofferahn, 2012). CCF also captures the essence of effective communication and leadership in the building of trust before and during a crisis because the concept captures the essence of trust in a complex environment. Trusting relationships between school authorities and all students is essential in successfully resolving school hostage and barricade events (Daniels et al., 2007).

Communities that are rich in political, social, communication, and financial capital have fared well in the aftermath of a disaster (Ormond et al., 2018). The use of CCF enabled researchers to determine how community characteristics impact their crisis readiness and response; as well, researchers proved that bonding and bridging capital are able to change a

downward spiral of loss into an upward spiral of hope (Emery & Flora, 2006). Such a phenomenon is feasible in a campus crisis situation.
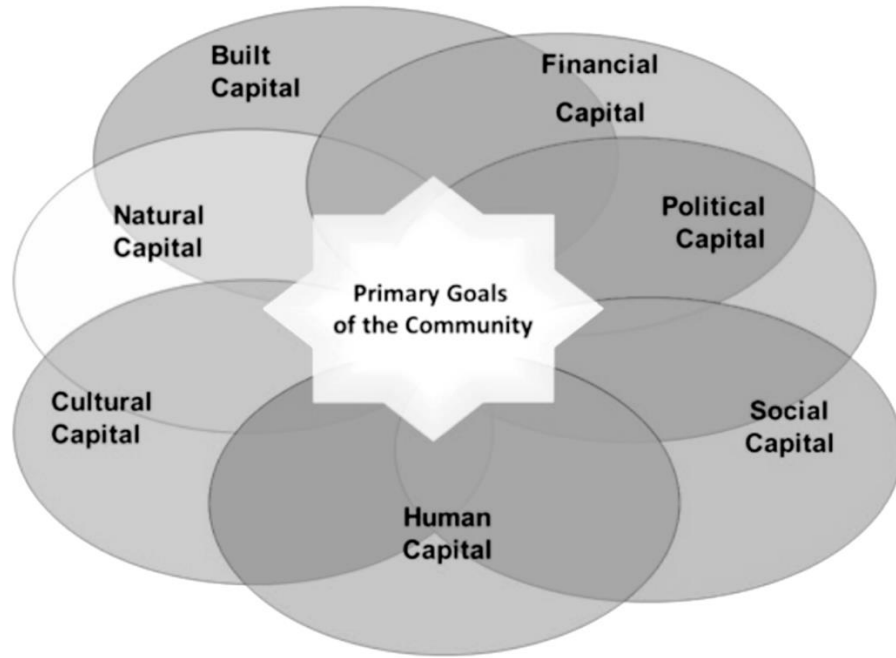
Figure 1. Community capitals framework.

Kopp, Nikolovska, Desiderio and Guterman (2011) noted that school shootings, unlike natural or technological disasters, do not often present clear signals. This notwithstanding, attacks are often predominantly woven in colloquial evidence and organizational folklore even before an incident happens. Besides the obvious emotional trauma of school shootings, they also come with educational and economic consequences (Katsiyannis, Whitford, & Ennis, 2018). The financial burden of school shootings on schools is hard to come by.

Statement of the Problem

A significant number of schools have crisis plans; however, it is not enough to simply have strategies (Adamson & Peacock, 2007). Plans need to be tested and for effective assessment to happen, communication is required. Moreover, evidence-based planning is recommended, and research shows that planning, response, and leadership issues have also been compounded by the

lack of evidence-based crisis response (Jonson, 2017) Although research on crisis mitigation strategies has grown over the last decade, little is known about their impact on indicators of school violence (Cuellar, 2018). In over half of the incidents studied, there was a prior threat of some kind, or a journal entry to classmates or peers (Fritzon & Brun, 2005). This awareness raises important questions: What is the role of communication on crisis readiness? Would a better understanding of the role of communicate to mitigate or prevent campus crisis?

A nation-wide survey of 47 Jesuit schools found 126 serious violent incidents happened within 28 schools during the 2004/2005 school year (Simonds, 2009). Another study also found that in 2012, approximately 749,200 students between 12 and 18 faced nonfatal school violence (Cuellar, 2018). From the years "1992 to 1999 there were 251 reported violent deaths associated with schools, and numerous other school shootings, stabbings and assaults in the USA" (Fritzon & Brun, 2005, p. 53). Though so much has been reported in the media, there is not much that can help educators to decipher who is at greater risk.

Some researchers have cautioned against generalizations in identification of potential assaults or signs of school violence because as they put, there is not one identifiable risk factor that fits all perpetrators (Wetterneck, Sass, & Davies, 2004). They however agreed that there are a number of risks factors that may help educators know who is at higher risk.

The widespread use of media has complicated the way leaders at institutions handle communication with stakeholders before, during, and after and emergency or crisis. Overall, mainstream media has enjoyed greater credibility; however, social media has been growing in significance (Egnoto, Griffin, Svetieva, & Winslow, 2016). Social media has also found better and faster ways of getting information out during a crisis, sometimes undermining the mainstream media which most school authorities prefer; this causes a disconnect.

Notwithstanding risks, school leaders have reluctantly adopted new media in sending emergency and warning alerts to students, staff, and faculty (Sheldon & Antony, 2018). Beyond school campus emergency management agencies with in-house information, communication technologies (ICT) departments are doing a better job of using social media in response (Jennings, Arlikatti, Andrew, & Kim, 2017).

Sometimes, communication and miscommunication has led to differences. Instead of bringing the community together, some of the tragedies have driven communities apart due to inconsistencies (Monzingo, 2017). Furthermore, though school shootings last, on average, 12 minutes communication issues sometimes last years (Thompson et al., 2017). Often, the media response overwhelms the response resources and capabilities of a small school community. This explains why effective communication and effective leadership work in tandem in promoting campus safety and crisis readiness. Without effective leadership, it is not possible to correct existing strategies or adopt new assumptions, norms, and beliefs within the internal and external environment of an institution (Deverell, 2009). Another issue unresolved issue for some states and localities is the fact that some states and localities are allowing the arming of educators. Weiler and Armenta (2014) found that principals have been reluctant to support the arming of educators.

Purpose of the Study

The purpose of this holistic case study is to examine the role of communication in crisis-readiness so as to better understand how leaders facilitate the process of adaptation in preparing for a crisis, especially in the aftermath of a major campus crisis incident. According to the National Fire Protection Association (NFPA) 1600, the national standard on disaster/emergency management and business continuity, *crisis communication* refers to activities aimed at

disseminating information to internal and external audiences, preventing, planning, responding, and recovering from an emergency (NFPA, 2013). A case study method lends itself to a deeper understanding of this topic because a college campus is a multilayered environment with many systems and subsystems.

Another framework that supports this study is the ecological learning framework (Preston, Chadderton, Kitagawa, & Edmonds, 2015) This framework advances the idea that there are two main types of community learning that occur after a disaster. Small-loop learning (i.e., adaptive, incremental, experimental learning) results in incremental, adaptive, or experimental changes, whereas large-loop results in a paradigm shift. Overall, there are three types of community learning in a disaster: navigation, organization, or reframing. The type of learning that occurs depends on social factors such as stress, trauma, civic innovation, and coercion. Insights from this framework will provide ideas for theoretical triangulation when analyzing data. The results from this study can inform the way institutions plan and implement campus crisis readiness.

Research Questions

 RQ. What is the role of communication in crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?

 SQ₁. How does leadership influence crisis-readiness and response on the campus of an institution of higher learning in the aftermath of a major crisis?

 SQ₂. How does information sharing impact crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?

Rationale, Relevance, and Significance of the Study

Though school shootings last about 12 minutes (Thompson et al., 2017), communication issues are marathons. Some communication issues last for years. Very often the media response overwhelms the response resources and capabilities of a small school community. Even after an incident is over, local authorities continue to deal with issues such as sustaining the marathon of communication needs aimed at avoiding future attack. Given the relative frequency of school shootings and other human-made crises, how can schools better prepare for this kind of events that can change the way they educate pupils and students across U.S.?

This study offers new and transferable insights for communication in crisis with respect to schools and colleges today. The potential implications of this study include gaining information on how educational leaders use the crisis readiness in leadership circles as a performance measure or metric. From a social perspective, this study explored transferable ideas that could serve others who review research in this area or regarding the crisis readiness in educational settings.

Definition of Terms

Crisis: Crises are, by definition, relatively unpredictable and unexpected events. They are often associated with acute distress, presenting individuals with problems that, at least initially, may not appear to have a solution. Crisis events include acts of violence or threatened violence, as well as severe illness or injury, death, and natural or man-made disaster (Nickerson & Brock, 2011).

Communication: Obtaining information from credible sources about the nature of an impending or ongoing crisis and responding appropriately can make the difference between life and death (Barker & Yoder, 2012).

Educational leaders: For research purposes in this study, educational leaders are superintendents, PreK−12 principals, assistant principals, athletic directors, and central office administrators.

School crisis stakeholders Internal stakeholder audience includes staff members (e.g., administrators, teachers, support staff) and students. Each of these groups has a different perspective and different concerns during an emergency, so it is important to craft the message accordingly.

Crisis learning: Communication, decision making, and collaboration in the community plays a significant role in the community learning and growing from the crisis.

Trust: An important element or ingredient for understanding and mediating the social structures in schools. (Kutsyuruba, Walker, & Noonan, 2016).

Leadership: It occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation (Pietsch & Tulowitzki, 2017).

Assumptions, Delimitations, and Limitations

Assumptions. In this study, an underlying assumption was that educational leaders are responsible for providing a safe and secure place for students and faculty members. This is an enduring practice of school leaders everywhere. It was also assumed that crisis readiness training must be designed to meet the needs of the diverse group of stakeholders that educators serve within institutions of higher learning.

Delimitations. Selecting participants from a school that has faced a crisis contributed positively to the information discussed in the interviews and data collection. In other words, the participants know the issue sufficiently. The interview questions were aligned with the literature

reviewed in this study and, therefore, the structure of the interviews is another delimitation. The research was conducted in a natural setting, which means all interviews, member checks, and personal reflections occurred in the workplace for each participant. Boundary details are outlined in Chapter 3 in the research design section.

Limitations. The study depended upon the willingness of participants to join; no one was coerced to take part in the inquiry within the confines of case bounding. Secondly, based on the research question, not every institution could be considered; therefore, only a limited number of institutions qualified on grounds that they faced a recent major crisis. Another limitation of this study was potential researcher bias. This researcher is an educator with an emergency management background; therefore, it was possible that the researcher harbored some sympathies for the views of participants in high-pressure positions. The past experiences of the researcher shaped the interpretation of the data (Creswell & Poth, 2018).

In order reduce bias, researcher used propositions based on literature review to keep a closer focus on the goals of this inquiry. The researcher further reduced bias by using auditor triangulation and keeping an accurate audit trail. Furthermore, the researcher also established a routine 30-minute self-reflection and reflexivity exercise to identify and journal ways in which researchers' professional, social background, assumptions, positioning and behavior may impact the research inquiry.

Summary

Chapter 1 introduced the background and purpose of this crisis readiness study in the context of an institution of higher learning. It also included a rationale and the significance of the study in relation to the way educational institutions contend with issues of communication during a crisis. The chapter further outlined a theoretical framework that support the purpose of this

study. Lastly, the chapter spelt out some assumptions, delimitations, limitations and a concise definition of terms that have an important bearing on this study.

Chapter 2 presents a literature review of contemporary studies that relate to the issue of communication and crisis readiness in schools and colleges across the United States. Chapter 3 focuses on the research methodology for conducting case study research, while Chapter 4 presents research findings and data analysis. The final chapter, Chapter 5 discusses the findings and offers a deeper interpretation of the results from Chapter 4 in light of their significance, importance and meaning.

Chapter 2: Literature Review

School shootings have been on the rise in the U.S. (Abrams, 2016). Unlike other types of emergencies, shootings come with immense psychological encumbrances. They often attract public attention and intense media scrutiny, as well as cause mass fear and deep human emotions (Muschert, 2007). Some researchers have called on authorities to increase pre-incident planning, increase information sharing with stakeholders, and effect changes in organizational culture (Topadzhikyan, 2013). Notwithstanding a louder public outcry, school violence, and school shootings are not abating.

To prevent the prevalence of school shootings, there are growing calls for policies and legislative mechanisms to deal with the issue (Katsiyannis et al., 2018). So far, schools have made investments in physical elements such as security systems; however, much remains to be done in the area culture with respect to sharing lessons learned in order to guide future response (Crepeau-Hobson et al., 2012). Schools also need to be more adaptable as learning organizations in order to face the onslaught of school shootings. For that to happen, Caldwell (as cited in Wai-Yin Lo, 2004) stated that schools must develop effective communications channels, inclusive and collaborative systems, professional development, and learning-focused leadership.

The purpose of this study is to explore the role of communication in crisis readiness within an institution in the aftermath of a major crisis. Three main themes have emerged from a literature review on communication, crisis readiness, and leadership in schools and colleges. These emergent themes are dysfunctional leadership in crisis, defective information flow, and distorted stakeholder engagement.

Conceptual Framework

School safety is a complex issue with many facets and stakeholders. A significant number of schools have crisis plans; however, it is not enough to have plans (Adamson & Peacock, 2007). There are other challenges such as deficiencies in leadership; leadership is key to navigating crisis readiness (Crepeau-Hobson et al., 2012). It is arguable that educational leaders, as well as their counterparts in other fields, have often missed the wake-up calls and the lessons that come from crisis focusing events (Dahl, 2010). Effective crisis readiness issues have also been compounded by the lack of evidence-based crisis research (Jonson, 2017). Even though they lack evidence in school crisis research, school authorities have made investments investment in physical security systems and hiring School Resource Officers (SROs). Public debates have also emerged on the issue of arming of educators, a move that most principals have been reluctant to support (Weiler & Armenta, 2014).

In response to the complexities of school shootings, a growing number of researchers have examined the role of school culture and organizational learning on how schools have adapted to crisis. Some have argued that for schools to make progress in the area of crisis readiness, there must be a willingness make changes internally and externally in improving strategy with respect to fundamental assumptions, norms, and beliefs (Deverell, 2009).

Based on the complexity of this issue and the need to explore both internal and external flow of information between a school and its stakeholders, the best lens possible for this study is the CCF, highlighted in Chapter 1. CCF is as a holistic framework that assesses how community characteristics affect preparedness, response, and recovery from a disaster (Ormond et al., 2018). It also examines the significance of pre-incident bonding and bridging of social capital—both of which facilitate community action toward successful community recovery (Stofferahn, 2012).

Furthermore, the CCF will also offer a closer examination of other factors that impact effective communication at a cultural, social, financial, and political level. Thus, the lens of this framework covers a wider frame of reference for epistemological understanding of communication, and leadership in a school setting.

Review of Research Literature and Methodological Literature

School shootings have been on the rise and their burden has been increasing across the U.S. (Abrams, 2016). In the past decade, school shootings have risen sharply from 6.4 to 16.4 annually over a 10-year period (Thompson et al., 2017). Shootings cause mass fear because they invoke a deep human response (Muschert, 2007). As a result of the fear invoked and the growing incidence of school shootings, schools are facing greater public scrutiny from the mainstream media, social media, and other stakeholders. Besides the media, the relationship between school authorities and parent groups is often fractious in the aftermath of school shootings.

This dissertation seeks to understand the role of communication in crisis readiness within a campus in the aftermath of a crisis. Though mainstream media has enjoyed greater credibility, social media has been growing in significance and has found better and faster ways of getting information out during a crisis (Egnoto et al., 2016). Perhaps, school authorities have missed the lessons that come from recent "wake-up call" events such as school shootings. According to Dahl (2010), events sometimes serve as a focus in government policy making because they remind decision-makers to be more receptive to intelligence and intelligence collection. Unfortunately, this has led to hostilities in schools between authorities and stakeholders. Some of the tragedies have driven communities apart. In some cases, effective response and lasting recovery was compromised by lack of inclusion and inconsistencies in mandates on how schools deal with active shooter incidents (Monzingo, 2017).

The establishment of trusting relationships between school personnel and all students is essential in successfully resolving school hostage and barricade events (Daniels et al., 2007). Other researchers have also found trust to be necessary in crisis readiness, even beyond schools. Communities that are rich in political, social, and financial capital have fared well in the aftermath of a disaster (Ormond et al., 2018). This underscores the importance of conducting after-event (AER) or after-action reviews (AAR) to ascertain strengths and weakness in the aftermath of an incident. In emergency management circles, such reviews focus on both failure and successes (Ellis & Davidi, 2005). Organizations do this to reflect and to draw lessons that inform future planning and response.

Adamson and Peacock (2007) argued that a majority of schools have crisis plans (95.1%) and teams (83.6%). Having a crisis plan or team is only part of the equation of crisis readiness. The bigger question is how the plan stands the test of a challenging incident such as a school shooting. Jonson (2017) argued that failure to enact evidence-based responses has had fiscal consequences that are only now being discovered.

On the communication front, school shootings last about 12 minutes (Thompson et al., 2017). Whether communication is transmitted in the form of an AA, lessons learned, or informal debriefs does not matter. Communication has been found to promote performance because it directs analysis and guided performance in terms of mental and specific causes (Ellis, Mendel, & Nir, 2006).

Historical Background of School Shootings in U.S.

Over the years, there has been an increase in mass school shootings and related deaths from the first that was one recorded in 1940 to the most recent ones of 2018 (Katsiyannis et al., 2018). Gun violence in the United States has been described by some as an epidemic and more

30,000 Americans routinely die in shootings every year (Spiegler & Smith, 2019). In schools and colleges, some studies have attempted to demonstrate the unseemly impact of school shootings. According to Katsiyannis et al., data from the National Crime Victimization Survey indicated that students between the ages of 12–18 have been exposed to 841,100 nonfatal victimizations at school. Though a greater part of U.S. population resides around the Northeast, most of the mass shootings have happened predominantly in Western and Midwestern states with each comprising over 31% of the cases.

From 1992 to 1999, "there were 251 reported violent deaths associated with schools and numerous other school shootings, stabbings. and assaults in the U.S." (Fritzon & Brun, 2005, p. 53). Over the years, different authors have advanced different reasons that trigger adolescent mass murders. Some have put the blame on the fact that most of the perpetrators come from broken homes while others have blamed it school culture, peer/social dynamics, and disclosure of intentions (Lenhardt, Farrell, & Graham, 2010). In a study on both implicit and explicit factors, Fritzon and Brun (2005) proposed a model for understanding the motives of the perpetrators of extreme acts of school-associated violence. The authors concluded in a significant number of the incidents they studied, there was a prior threat of some kind, or a journal entry to classmates or peers (Fritzon & Brun, 2005).

The Complexities of School Shootings

Unlike many types of crisis, school shootings are both complex and divisive. With respect to gun some are for control while others have rejected it (Weiler & Armenta, 2014). In the area of external communication, there is competition between social media and mainstream media. In the early stages of response, social media has thrived, subsequently leading to opinion sharing over time (Heverin & Zach, 2012). With respect to mitigation and prevention, school

shootings crisis have been harder to predict. Modzeleski and Randazzo (2018) also argued that it is possible to prevent school shootings by looking at a person's behavior and/or communications.

Another element of complexity is the fact that school crisis is embedded in culture. Much remains to be done in the area culture with respect to sharing lessons learned in order to guide future response (Crepeau-Hobson et al., 2012). In some ways, school violence is a reflection of socio-cultural violence. In 2015, there were a total of 36,252 gun-related fatalities, of which 35.8% fatalities did not involve law enforcement (Katsiyannis et al., 2018).

The Emergence of Emergency Management in Schools

In 2015, there were a total of 36,252 gun-related fatalities, of which 35.8% fatalities were non–law enforcement related (Katsiyannis et al., 2018). In that period, 142 youth and children between five and 12 years of age died from gun-related injuries that were non-law enforcement related, and 1,851 adolescent ages 13 to 18 died from gun-related injuries, of which 55% were non-law enforcement related and 40.25% were suicides. As a result of this increasing toll, schools have been increasing programs and plans to prepare, respond, and recover from emergencies and crisis.

Topadzhikyan (2013) pointed out that schools need to make strides in crisis prevention by adopting advance planning and continuous information sharing with stakeholders regarding individuals or issues of concern. Besides prevention, Topadzhikyan also advocated that leaders have a duty to address issues such as changes in organizational culture, law enforcement, and the sharing of solutions. This position is similar to the ecological learning framework (Preston et al., 2015). In this this framework, Preston et al. (2015) argued that there are two main types of community learning that occur after disaster. Small-loop learning results in incremental, adaptive or experimental changes, whereas large-loop results in a paradigm shift. Overall, there are three

types of community learning in a disaster: navigation, organization, or reframing. The type of learning that occurs depends on social factors such as stress, trauma, civic innovation, and coercion.

School emergency management in flux. "Preventing a violent incident such as a school shooting, schools can reduce the trauma caused by school violence" (Modzeleski & Randazzo, 2018, p. 113). According to both authors, lessons are not sufficiently utilized to prevent future incidents. Modzeleski and Randazzo (2018) also argued that it is possible to prevent school shootings by looking at a person's behavior and/or communications. They have gone as far as to point out what they call *the pathway to violence*. Based on their observation, fellow students often know about a potential shooter's plans and intent long before they pull a trigger. Unfortunately, schools have not done a good job at tracking such intelligence or communication from the ground.

Another area for improvement is closing gaps in communication. Barnes (2013) cited Asbby in arguing that school administrators often overlook disaster preparedness due to competing priorities. Unlike other types of organizations, school staff serve a critical role because children are highly dependent on staff, and their needs become magnified during an emergency.

Mitigation. One important activity that is part of the mitigation phase is vulnerability and threat assessments. A vulnerability and threat assessment guides authorities in crisis resource allocation. Barnes (2013) cited personnel of Los Angeles County Schools as saying that schools are the least prepared for terrorism and biological emergencies. On the other hand, a suburban school district in Arizona heeded the Department of Education's call for safer schools by recently upgrading security mechanisms at its campuses (Jagodzinski, 2018). Each of the schools

in the district upgraded with respect to implementation of School Resource Officer (SROs) and the installation of ballistic glass at all school lobbies. Barnes' research also focused on the perceptions of three groups of stakeholders: parents, teachers, and support staff. Each group lauded the new innovated ballistic glass lobby renovations, though without any mention of the cost or the justifying vulnerability and threat analysis. Modzeleski and Randazzo (2018) pointed to the fact that nearly half of all schools (49%) have implemented threat assessments.

Preparedness. According to the Department of Homeland Security (DHS) and the Federal Emergency Management Agency (FEMA), the preparedness phase is "a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response" (Dassance, 2007). In light of this definition, one can argue that schools are making some progress. Adamson and Peacock (2007) noted in their study of 228 psychologists that 95% of schools had crisis plans and 83.6% have teams in place. With respect to communicating corrective action, so far, it is not clear how much corrective action is based on sound communication (Dillon, 2016). Dillon (2016) also argued that one of the main effects from recent man-made disasters such as Virginia Tech shootings and natural disasters such as Hurricane Katrina is poor communication in each phase of emergency management planning.

Ineffective communication during the preparedness phase is arguably a precursor to ineffective flow of information during the subsequent phases of emergency management (Dillon, 2016). At Virginia Tech, Dillon (2016) argued there were multiple layers of failure in effective communication. These included leadership failures, emergency plan, a poor interpretation of legal/procedural knowledge, and ineptitude in communicating with medical stakeholders to save

lives. Poor communication was an entrenched issue, so much so that it took authorities over two hours after the incident before sending out a mass alert to notify students of a shooting.

Citing Hart (1993), Broekema, van Kleef, and Steen (2017) pointed out that the process of learning from a crisis comes with stories, emotions and symbols that play a key role. During a crisis, learning comes with cognitive limitations because people are forced to grasp the full complexity of events (Broekema et al., 2017). This raises a very important issue which is that perhaps schools are not adapting effectively enough to crisis due to the complexity of school shootings and the burden they bring upon them. Broekema et al. raised the issue of organizational learning as a metaphor because it is only individuals within organizations that have the cognitive capability to draw lessons, and not organizations as such.

Deverell (2009) argued that learning from crisis happens in a series of crisis-induced lesson-drawing process. The learning process is either based on single- or double-loop learning. In citing Argyris and Schön, Deverell indicated that single-loop learning is achieved when organizational members detect and correct flaws in the organization and its procedures without inquiring into basic organizational premises and norms.

On the other hand, there is also double-loop learning that takes the form of restructuring of organization's norms, strategies, and assumptions. This deeper form of learning presupposes that error detection becomes not only connected to strategies but must also to relate to the norms that define effective performance. Deverell (2009) concluded that double-loop learning is the only true learning; however, an in-depth analysis of single loop learning processes are just as important, provided the learning processes move from theoretical to practical realms.

The emerging picture here is that learning within organizations or institution not as straight-forward process, let alone in a complex crisis. In the case of school shootings, there are

multiple legal policies and requirements such as county, city, state, and federal policies and regulations that govern the way students are managed. Perhaps the most important finding is that feedback—one element of communication—does not play a major role in crisis readiness. Broekema et al. (2017) put it succinctly: "Data from in-depth interviews with key experts in the organization and from crisis management documents indicated that political–economic context, social–emotional understanding, organizational structure, crisis management stage and organizational forgetting are key factors" (p. 326).

Response phase. FEMA defines the response phase as various activities that focus on the short-term, direct effects of an incident. Response includes immediate actions to save lives, protect property, and meet basic human needs. It also includes the execution of emergency operations plans and mitigation activities designed to limit the loss of life, personal injury, property damage, and other unfavorable outcomes. As indicated by the situation, response activities include: (a) applying intelligence gathering to lessen the consequences of an incident, (b) increased security operations, and (c) continuing investigations into nature and source of the threat. Response activities may also include apprehending actual perpetrators and bringing them to justice or in the case of school shootings—it may include lockdown, shelter-in-place, evacuation of students, search and rescue operations, fire suppression, and more. This calls for an efficient use of intelligence and effective communication to lessen the loss of lives and property.

Dillon (2016) observed that Virginia Tech's emergency plan needed updating and maintenance. Dillon, citing Giblin, Burrus, and Schafer (2008), pointed out that 70% of plans surveyed required significant upgrades. Without up-to-date information or a deeper utilization of past intelligence in an active shooter situation, or any emergency for that matter, the consequences can be devastating. In another response readiness study that involved 18 shooters

in 16 separate incidents of targeted school violence with two of the incidents involving two shooters, there is need for expanded mental health response in schools (Lenhardt et al., 2010). DiLeo et al. (2018) stated that information about short- and long-term behavioral health needs can make or break because an institution's resources are often overwhelmed during an emergency response.

Recovery. The Department of Homeland Security (DHS) has advocated for resilient organizations and communities. DHS and TCL, in the immediate aftermath of a crisis, a school 's resources are often overwhelmed. Based on a study of 7,184 microblogging communications sent in response to three violent crises that occurred on U.S. college campuses, microblogging communications helped individual contributors and their followers to make sense of the situation (Heverin & Zach, 2012).

Crepeau-Hobson et al. (2012) argued that evaluations or debriefings are probably the most challenging aspect of the crisis response process in school crises. Given that debriefs are often not very effective, some researchers have advocated for other ways of learning from past mistakes and near misses. Instead of insisting on debriefs some researchers have advocated for embedding notions of single- and double-loop learning and tacit and explicit knowledge, which are also features of organizational learning that are more familiar with educators (Lawler & Sillitoe, 2013).

To Arm or Not to Arm Educators

There has been no shortage of ideas on what should be done to mitigate school shootings. The National Association of Secondary School Principals (NASSP) supported reinstatement of the assault weapons ban while calling for stricter background checks for people who purchase firearms. There is a raging debate on this issue amongst educators in schools and colleges, at

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school conferences, parent conferences, along the halls of Congress and state assemblies. Weiler and Armenta (2014) found that principals generally felt that any advantages of having armed school personnel would be outweighed by the disadvantages. According to Topadzhikyan (2013), change is needed to prevent school shootings.

The Role of Effective Crisis Communication in a School Emergency or Shooting Incident

"Extant communication research on school shootings is limited" (Thompson et al., 2017, p. 535). This scarcity notwithstanding, some ideas can be gleaned from related fields of high-stakes crisis readiness. In preparation for an infectious disease outbreak, public health officials, scientists, and communication professionals' approach effective crisis communication from the perspective of building partnerships with journalists, ensuring information is truthful before communicating and managing trust in communication (Holmes, Henrich, Hancock, & Lestou, 2009). In the case of public pandemics, public health authorities have adopted WHO guidelines on crisis communication relating to infectious disease outbreak. In such situations, public safety authorities have created media partnerships that strengthen communication and trust during critical moments in crisis communication (Holmes et al., 2009).

In a face-to-face study of 10 school authorities who have experienced a recent school shooting, there are six primary communication challenges that school districts face in the aftermath of a school shooting (Thompson et al., 2017). These unique challenges include managing emotions of those directly involved, identifying affected students, and coordinating with hospitals and law enforcement while at the same time communicating with larger community. Beyond the challenges, Thompson et al. (2017) advocated the use of discourse of renewal theory (DRT), a theory as the best possible platform for a postcrisis organizational rebuilding. DRT is framed as a theory to help school authorities in outlining a dynamic and

positive process for organizing a postcrisis future that liberates community resources to rebuild based on the positive aspects of a crisis.

Another study on the role of social media in crisis communication found that social media plays a part in all the phases of emergency management. Of 40 American Red Cross communication professionals, researchers used qualitative methods in combination with empirical data. They found through their in-depth interviews that social media provides a low-cost channel for generating volunteers, donors and getting media attention during a crisis (Liu, Jin, Briones, & Kuch, 2012). The study concluded that social media helps the American Red Cross to build reputation as well as building relationships with traditional media and volunteers. While social media's influence is external in reach, internal communication is equally as important. In the internal environment, positive uninhibited and open (i.e., communicative) behaviors have been found to reduce negative actions during a crisis (Mazzei, Kim, & Dell'Oro, 2012). It demonstrated the importance of relationships and engagement in strategic crisis communication.

One concept is getting attention as a tool for effective crisis communication. Internalization, distribution, explanation and action, otherwise known as IDEA (Sellnow, Lane, Sellnow, & Littlefield, 2017). offers an alternative framework for effectively designing and developing effective messages that help people to better protect themselves during high risk events or crises. The model consists of four components: identify the suitable channel and strategy for disseminating high-risk message, helping recipients internalize impact, offering a concise explanation of the risk and offering specific proactive action for recipient to take (Sellnow et al., 2017). It is based on a posttest quasi-experimental cross-sectional research initiative in which the authors found that messages designed based on IDEA model were

significantly more effective. They also resulted in greater behavioral intentions to engage in appropriate self-protective actions in the event of an acute risk or crisis situation.

Another model that has been proposed and has the relevance to serve educators is CCF. According to this concept, effective community response to a disaster is significantly related to a community's preexisting bridging and boding capital because both play a role in a community's ability to socially mobilize resources to recover from a disaster (Stofferahn, 2012). The CCF has also delineated a link between bridging and bonding social capital and successful emergency response. In addition to the link, the framework went further to indicate that cultural, social, and human capitals were the keys to a community's ability to mobilize political needed in getting financial capital that supports post disaster recovery and restoration. Unlike other models, Stofferahn (2012) argued that cultural capital is significant because it determines how a community engages in collective action.

Towards a Crisis-Resilience Culture in Schools and Colleges

Himes-Cornell et al. (2018) argued that that a community's ability to cope with a disaster depends on its endowment of social and economic resources, collectively known as "community capital." Stofferahn (2012) concluded that although citizens studied did not possess any direct knowledge of CCF concept or its tenets, they nonetheless exhibited a deep understanding of the different resources found within their community and how to mobilize those resources in the form of capitals to solve problems confronting their community. Similarly, Mutch (2014) advocated that schools serve as hubs of disaster preparedness in a community. For this reason, it schools are expected to have community capital. Such capital includes strong political, social, and financial capitals.

According to Preston et al. (2015), there are three types of learning that happen in a community disaster: navigation, organization, and reframing lessons. Based a study of on lessons learned from natural disasters in Japan, United Kingdom, the United States, New Zealand, and Germany, their Ecological Model of Learning is appropriate for a school setting. It includes factors such as community learning, adaptiveness, incremental learning, and experimental learning. Communities that possess strong political, social, and financial capitals fared better in aftermath of disasters, thereby effectively enhancing longer term recovery and transformation (Himes-Cornell et al., 2018). This is potentially a good measure of a school's performance in the aftermath of a school shooting or any other type of emergency for that matter. Based on this model, it can be inferred that schools that are rich in community capitals have a better chance to respond and recover from a school emergency relative to schools that are deficient in community capitals.

Some empirical studies have shown that social capital is related to the success of local, regional and quasi-government agencies such as local governments, schools, and school districts according to Andrews (as cited in Andrews & Wankhade, 2015). Both authors also argued that the relationship between social capital and the performance of public organizations is well established. Similarly, Jeffres, Jian, and Yoon (2013) advocated that greater public engagement yields communication capital. In this case, *communication* refers to symbolic activities that impact civic engagement, including all forms of communication that facilitate social problem solving with a community. They found four dimensions of communication capital: social capital, media use, neighborhood communication, and efficacy.

Based on the above sources, there is ample room to believe that social capital strengthens social, cultural, and communication capitals. What is more, such capital plays a role in the way

information and communication flows before, during, and after a crisis; this much is obvious. However, it is uncertain to what extent social and cultural capital impacts information flow during school shootings. Does it play a positive or negative role and how does this relate to a school's cultural capital?

Of all the conceptual frameworks explored, the CCF offers a reflective and introspective lens through which to study how institutions are handling crisis readiness. This lends itself to a broader scope that establishes the interrelationships and channels through which information flows. Above all, it will help the researcher to observe the difference in pre-incident and post incident adaptations especially with respect to social capital. Newman, Fox, Harding, Mehta, and Roth (2004) have concluded that "social capital can be a powerful mechanism for information exchange and enforcing norms in order to promote desirable child outcomes" (p. 425). The role they emphasized can be either positive or negative.

The Undeniable Role of Social Media in Crisis Readiness

Unlike other types of organizations, schools and institutions of higher learning face a bigger challenge in dealing with a wide variety of social media and social networking sites that are used by students, notwithstanding risks and other inherent challenges (Ricciardelli, Quinn, & Nackerud, 2020). Though initially reluctant, university communicators are increasingly adopting social media because these media lend themselves to two-way interactive engagement (Kelleher & Sweetser, 2012). According to these authors, university administrators in departments such as university relations, athletics department, admissions, public relations, external affairs, media relations, student engagement, student services, and development services are making adjustments to embrace more social media tools so as to engage and interact with their students. Other researchers have also agreed that more and more institutions of higher learning have found

the need to leverage the power of social media in preparing and responding to emergencies. Ada, Rao and Sharman (2010) argued that universities have stated that social media potency lies in the fact that it holds together a diverse population, which very often includes local and international students, faculty, staff, and visitors. Obviously, this varies based on culture, language, socio-economic, and health status. Furthermore, university campuses tend to be more diverse in the infrastructurally and technologically and such diversity adds to the level complexity that must be taken into account in the course of crisis readiness. Hence, as a special and unusual community, a university community should have the adequate resources and capabilities to plan, respond and recover from emergency situations without much support from external authorities without immediate support from external communities.

The authors further argue that universities cannot afford to ignore the fact that students form a significant part of the population of university communities. For this reason, it serves institutions well to engage students because virtually in emergency and crisis readiness. Besides, students play an important role during emergencies; without their collaboration in information dissemination, compliance with warnings, or evacuations, response and recovery from emergencies and crisis will be in jeopardy. It thus appears that social media adoption by college administrators as a matter of necessity and expediency, not so much as a matter of choice as in the case of the students they supervise.

In spite of the heralded importance of social media in college readiness, a multivariate analysis of variance (MANOVA) study found that warning messages sent through short message text messages are perceived to be more serious than warning messages that come through social media (Sheldon, 2018). This is also true of warning messages about natural disasters. This

contrarian perspective is welcome insight which helps authorities to pause and consider other strategies for engaging students and staff across generations.

Communicating Across Generations

Colleges and universities generally tend to have a younger population who consume media and content differently from the older generations of adults who serve as faculty and administrators of support at colleges and universities (Yang & Huesmann, 2013). Besides generational differences, the authors argued that there are also parental influences on media consumption. Furthermore, demographically, male and female students perceive risk differently, and use social media differently in differently alerting their fellow students. Generally, findings reveal that women are more incline to take emergency alerts much more seriously than men do. Moreover, women are also said to be more engage in secondary crisis communication, such sharing the message with others, whereas males or men tend to share emergency alerts primarily to reassure others. This means that women inform others so that they too may protect themselves. (Sheldon & Antony, 2018, p. 167)

In a fragmented media landscape, individuals seek information through many different networks and sources. This poses a challenge to college authorities who seek to keep students, faculty, and staff informed on campuses whereby there are multiple generations with different media tastes and choices (Westlund & Ghersetti, 2015). This challenge is, however, not unique to school and college administrators. Marketers alike face these challenges like the leaders of institutions of higher learning. Wrestling with the problem of communicating across generations who consume media differently is an ongoing challenge. According to the Generational Cohort Theory, individuals who experience similar defining social, political, economic, historical and cultural events during their coming of age between 17- 23, tend to value their shared-

consciousness and generational memory (Chaney, Touzani, & Slimane, 2017). Based on this theory, it is apparent that most students in postsecondary institutions come of age during their college years. As a result, their coming of age is very different from that of their faculty and administrators. Therefore, experientially speaking, they have shared experiences, schema, or *weltanschauung* that are different from those in faculty and administration and staff positions who manage their academic and residential life during their college years. This poses a problem that could result in a disconnect in the way ideas are shared, or a mismatch of defining cultural references either for building of rapport or for the purpose of communicating important safety and security messages on campus.

This issue is further exasperated as the leaders of today's colleges are predominantly baby boomers and GenXers, while the students are predominantly Generation Z (i.e., born after 2001) or perhaps Gen Y (i.e., Millennials) in graduate school. Baby boomers are said to prefer face-to-face communication, whereas the Generation Y prefers digital interactive technologies (Venter, 2017). Though the study is silent on Gen Z, it is likely that Gen Z are ideologically closer to Gen Y. Researchers such as Venter (2017) pose a question that is relevant to campus crisis readiness: *How can the generational communication gap between the Baby Boomers generation and Generation Y be closed in order to allow them to have meaningful interpersonal communication?* It is also worth exploring how the gap can be closed between Baby Boomers and the Gen Z who have been shaped by very different generational experiences. Their worldviews could not be more different knowing that Boomers were born after the World War II while Gen Z were born after the September 11th disaster.

Thus, school administrators need to focus on ways to reduce the communication gap between the baby boomers and Millennials or Gen Y. Obviously, there is a bigger gap between

Baby Boomers and Generation Z who were born in a time of economic prosperity. Administrators need to focus on generational differences in the way school and college authorities engage, communicate, and persuade Generation Z on issues relating to emergency and crisis readiness, response, and recovery such as gun violence, cyber bullying, virtual gaming and other forms of cybercrimes that may affect students.

College Leadership in Community Colleges

Research from the academic world shows that the leaders of many tertiary institutions talk about insufficient technology and their inadequate readiness using technology in non-traditional emergencies (Thelen & Robinson, 2019). One way to examine how universities and colleges are leveraging existing technologies in communicating with their internal publics or audiences (i.e., students, support staff, administration staff, faculty) is by exploring what community college leaders are doing via social media. Some preliminary communication studies of educational leaders at the helm of institutions has indicated that administrators have struggled with the balancing their institutional responsibilities and their personal beliefs as leaders of an academic institution (Moore, 2018).

Whereas Thelen and Robinson (2019) have advocated for messages that combine rational and emotional appeals, Moore (2018) has argued that leaders set aside time to reflect on their leadership identity. Beyond messaging issues and challenges, monitoring of the social media has also emerged as one area of common areas of agreement amongst researchers. Monitoring ensures the leaders know what the publics or audience are saying or reacting to the messages that have been put out. Given the fact that there are hundreds of social media tools and applications, none of the studies have identified a definitive list of social media sites to be monitored. Facebook or Twitter have become preeminent in many studies and situations. Both have also

become the virtual platform for frequent interactions and exchanges amongst observers seeking to form an opinion about issues happening around college campuses (Thelen & Robinson, 2019).

Community college presidents, like their counterparts in other institutions of higher learning, face a very dynamic sphere of influence. Some studies have attributed their decision-making with respect to crisis, to underlying mental maps that guide them, ongoing situation cognition and the constant learning and adjustment of leadership framework (Eddy, 2005). In light of their willingness to learn and adjust their schema, it is thus hopeful that college and university presidents are more predisposed of the knowledge and the know-how to change their core schema or worldviews as they wrestle with the increasing tide of disruptive social media on crisis readiness, response, and recovery. Therefore, like their peers in the private sector (e.g., presidents and chief executive officers of corporations), community college presidents face a similar or larger challenge in dealing with social media by engaging with offline and online communities, influencers, advocates; while at the same time responding quickly in a manner that is congruent with social media platforms and their users' expectations in an era of User Generated Content (UGC; Canhoto et al., 2015).

Communicating in Natural Disasters and Pandemics

During natural emergencies and disasters, schools and colleges are as vulnerable as most organizations, if not more vulnerable because they have a huge concentration of young and sometimes dependent students. A study of 15 adolescent youths found that there are behavioral changes, feelings of isolation, social withdrawal, increased arguments with family and friends, and avoidance of relationships in relation to hurricanes (Mearidy-Bell, 2013). Certainly, all-natural disasters are not born the same, nor do they have the same impact on students and communities. During the H1N1 influenza pandemic, college students predominantly sought

information online (Koskan, Foster, Karlis, Rose, & Tanner, 2012). The team also found that in order for an institution to effectively communicate emergency preparedness information to their students, institutions of higher learning used both interpersonal communication tools and mediated communication from trusted sources. In the course of communicating with students, Koskan et al. (2012) argued for the need to help students to understand the health-related risk of the emergency and basic steps to avoid the disease.

In 2009, a survey of 429 students at Cornell University during the H1N1 pandemic found that positive emotions were more frequently expressed than negative emotions during the pandemic. The study also found that emotions were significant mediators between crisis responsibility and relational trust with respect to those seeking information from the institution (Kim & Niederdeppe, 2013). Similar to other studies in crisis management, the study affirmed the importance of trust in the relationship between a beneficiary (students) and authorities (principals) because authorities are perceived as community leaders (Fletcher & Nicholas, 2016). Another study in Canada found that during an epidemic, the orientation of an institution should shift from external relations to internal communication because effective communication influences staff behavior in a crisis. Strong internal communication also reduces confusion internally. Furthermore, coordinated responses during a pandemic like the SARS epidemic that hit Sunnybrook Health Sciences Center, Canada's largest teaching and research hospitals also strengthened internal cohesion (Duhamel, 2009). When strong internal communication is combined with staff feedback, and constant broadcast of critical information to motivate staff, it strengthened staff commitment and sense of contribution and overall success. It is not clear if these findings from teaching hospital within an institution of higher learning are transferrable to

regular institution of higher learning. For that reason, no further extrapolation of this topic was done.

Precrisis Student Engagement

The internal organization of every institution of higher learning is different, however one thing remains useful and timeless—student engagement is of essence in emergency and crisis readiness. In some institutions, student engagement is often the primary responsibility of the student affairs departments. One of the channels that student affairs professionals use to reach students these days, is via Facebook. Through this medium, they share professional development, learning resources, and dissemination of advice dialogue, events, stories, and humorous snippets (Eaton, Pasquini, Ahlquist, & Gismondi, 2020). Beyond the element of narratives, this helps students to see a bigger picture. Lorenzini (2013) has also argued that student learning regarding contemporary topics and issues is enhanced when civic engagement is part of initiatives that help them have a larger context of issues. This ensures that students integrate global knowledge with concepts of citizenship, thereby helping "students build bridges between knowledge and action," (Lorenzini, 2013, p. 418). Such an approach has greater potency in times of global pandemics, or incidents that stretch local boundaries of cities, counties or countries.

Gaps in Higher Education Readiness

Higher education is not spared from the hazards and challenges of pre-incident stakeholder engagement that come with issues such as government policies, internal standard operating procedures, federal, state, county and city regulations, rules of engagement and more. By way of an example, findings from a study of 130 structured interviews with random victims of recent disasters suggest that many Federal Emergency Management (FEMA) policies were unclear to users (Cherry & Cherrys, 1997). In other cases, they policies were poorly explained or

too rigid, and required a high level of middle-class financial skills to comply with eligibility requirements. Such bottlenecks have resulted in significant challenges for families from previous disasters (Cherry & Cherrys, 1997). Hopefully, the issue of clarity in policies does not extend to institutions of higher learning who use FEMA guidelines in preparing for natural, man-made and technological disasters, whose mandates also cover institutions of higher learning across the U.S.

On a positive note, students and staff have reported significant improvement in their perceptions of emergency readiness following the training exercises (Schildkraut & Nickerson, 2020). The positive perceptions notwithstanding, a debate on effectiveness and efficiency of drills is far from settled. According to Jonson, Moon, and Hendry (2020), there are two paradigms inform responses to active shooting situations. One paradigm, a traditional lockdown approach permits individuals to find a place to take cover in a classroom and lock the door. The other multi-option paradigm encourages individuals to evacuate a risky area, create barricades, as well as actively resist the gunman, as last resort. While a majority of schools conduct active shooter drills, typically using a traditional lockdown approach, little is known about their effectiveness.

With simulation approach, the authors of this study found that drills were shorter and had fewer people getting shot. In another study from New York, authors found that drills do improve students awareness, though at the end of drills, students did not necessarily report feeling safe at school or in all parts of the building (Schildkraut, Nickerson, & Ristoff, 2020).

At any given time, an institution cannot exist without its students, staff, and faculty. It is just the way that institutions of higher learning function. Unlike individuals, institutions do not think or react like individuals; they are often managed by leaders. Without adequate commitment from the highest-ranking officials at institutions of higher learning, their respective institutions

ability to prepared, response and recovery operations are doubtful (Barnowski, 2017). With such influences, leadership becomes a decisive factor in the emergency readiness, or avoidance in the case where the leaders suffers from oversight. With or without effective leadership, readiness becomes center-stage or compromised. In other words, effective leadership can make a or break readiness, response and recovery. Dysfunctional leadership on the other hand may result in chaos, loss of lives and greater destruction of property.

Review of Methodological Issues

The studies that have been cited in this paper reflect the emerging body of research in the area school crisis preparedness. There is a growing interest in this area of research amongst graduate students, faculty and research institutions. A methodological analysis of the studies used in this paper, has revealed that there have been a greater number of qualitative studies. This, however, does not imply there has been a paucity of quantitative studies because the gap between both methods, is not significantly broader.

Some of the qualitative method studies cited so far in this paper include (Dahl, 2010; Eddy, 2005; Egnoto et al., 2016; Preston et al., 2015; Thelen & Robinson, 2019; Thompson et al., 2017; Vaughn & Turner, 2016; Wai-Yin Lo, 2004). On the other hand, the researchers who used quantitative methodology in their papers are (Etikan, Musa, & Alkassim, 2016; Jeffres et al., 2013; Sheldon, 2018; Sheldon & Antony, 2018; Westlund & Ghersetti, 2015; Wetterneck et al., 2004; Yang & Huesmann, 2013). There were no mixed method studies that met the criteria of selection for this study. It is also worth noting that a handful of researchers such as (Ando, Cousins, & Young, 2014; Katsiyannis et al., 2018; Muschert, 2007) conducted expansive literature reviews that traced the origin and evolution of emergency and crisis readiness in schools and colleges.

Conceptually, case study research is considered suitable in studies that seek to have an in-depth understanding of a real-world phenomenon in a natural setting. As such, case study design methodology lends itself the use of different tools and sources of data collection, analysis and interpretation. Based on purpose of this research, case study research design is ideal because it enables the researcher to have a deeper and broader understanding of the issue of crisis readiness. When such an understanding is based on the perspectives of those who are knowledgeable and possess a sound appreciation of the issues at stake, it helps a researcher to generate good findings.

Synthesis of Research Findings

In the interest of summation, emergency and crisis readiness in the area of education is a relatively new undertaking. The growth and evolution of this readiness is far from maturity. In other words, most institutions are still in the process of finding a suitable roadmap for mitigating, responding and communicating effectively during a school crisis (Heverin & Zach, 2012). With respect to natural disasters, educational institutions have had more experience in navigating, and communicating before, during and after an emergency or crisis. With respect to man-made emergencies and crises such as mass shootings, most educational institutions have come to discover that they need a different approach to communication (Topadzhikyan, 2013). This literature review has also revealed that educational institutions are investing more and more into infrastructural readiness; sometimes, without underpinning impact and vulnerability analysis. Admittedly, administrators are basing their crisis readiness decisions and investments on their personal experiences, prevailing mental maps and leadership thinking (Eddy, 2005).

With respect to information flow between educational authorities and stakeholders, it appears that greater trust is often invested mainstream media. Unfortunately, this has sometimes

undermined the growing influence of social media on students and how such media can be harnessed to strengthen cohesion with internal stakeholders (Duhamel, 2009). Therefore, much remains to be resolved in the area of internal and external communication, and institutional norms with respect to learning and sharing lessons from past incidents (Crepeau-Hobson et al., 2012).

Critique of Previous Research

By and large, emergency and crisis communication research has fallen short of identifying alternative solutions. Much of the research has focused on critical analyses at the expense of shedding light on ideas, concepts and best practices that educational authorities can embrace in dealing with real issues such as drills, shelter in place, physical health, mental health, and student emotional issues (Schildkraut et al., 2020).

Another shortcoming is that, the literature has predominantly been US-centric. Unfortunately, not much has been published in the area of lessons from foreign or local best practices from institutions that have invested more in constant learning and adjustment of leadership models (Eddy, 2005). Such overarching dearth of research has potentially contributed to a shallow reservoir of ideas from which practitioners can draw from in the process of preparing, responding and recovering from emergencies and crises. It therefore no wonder that a good number of institutions continue to struggle with the issue ineffective flow of information during the response and recovery phases of emergency management (Dillon, 2016).

Summary

This literature review has revealed that school crisis readiness is in a state of flux. Given that communication is an inherent component of emergency and crisis readiness, it is no exception. Based on the issues analyzed above, there are number of emerging themes. The

themes revolve around issues of leadership, information sharing and stakeholder engagement. In the face of crisis, educational leaders have been observed to be dysfunctional in the way they prepare and manage readiness communication. Information flow, particularly during the response phase, has often been distorted; while stakeholder engagement has often been haphazard. Based on these themes, there is a good case for a thorough qualitative study that examines the role of communication in the aftermath of a major crisis. Such a study will illuminate lessons that have been learned by other institutions. What lessons can be learned from those who have face a crisis before? This question provided a foundation for this study.

Chapter 3 focuses on epistemological, ontological aspects of this study. It also sheds light on the methodological issues that guided the implementation of a study in generating deep and rich information about communication, leadership, stakeholder engagement and crisis readiness. Above all chapter 3 also looked at the boundaries of the study with respect to time and space. In a nutshell, the chapter attempted to provide answers to questions relating to how data were collected from the field.

Chapter 3: Methodology

The purpose of this case study is to gather rich data to understand the role of communication in crisis preparedness within a single campus of an institution of higher learning in the Northeast region of the United States. This is based on an issue that is changing the way educational institutions deliver their service. School shootings have been on the rise and their burden has been increasing across the U.S. (Abrams, 2016). In the past decade, school shootings have risen sharply from 6.4 to 16.4 annually over a 10-year period (Thompson et al., 2017). Unlike other types of incidents, shootings create mass fear because they invoke a deep human response (Muschert, 2007). Research has revealed that ineffective communication is a precursor to ineffective crisis response (Dillon, 2016). Therefore, effective communication is required for leaders must build trust with stakeholders. Trust enhances the cultivation of social capital (i.e., trusting relationships), which is an ingredient that some researchers have argued is missing in school crisis readiness (Daniels et al., 2007).

For an institution of learning to be crisis-prepared, and for it to respond and recover effectively from a crisis, such an institution must possess the political, social and communication capitals (Stofferahn, 2012). These "capitals" enhance the strengthening of trust, an important element of response and recovery. Social capital therefore promotes the nurturing of bonding and bridging capitals that foster relationships of trust for community to respond and recover from a crisis. In other words, this chapter presents a methodology that aligns with literature review and conceptual framework. It is worth noting that a case study is a systematic process or form of inquiry that is defined by a bounded system; they are often based on an entity or entities that have clearly defined spatial boundaries, borders, walls such as in schools or prisons or as they are experienced or conceptualized in everyday life (Mills, Durepos, & Wiebe, 2010).

Purpose of the Study

The purpose of this case study is to examine the role of communication in crisis-readiness so as to better understand how leaders facilitate the process of adaptation in preparing for a crisis, especially in the aftermath of a major campus crisis incident. According to the NFPA 1600, the national standard on disaster/emergency management and business continuity, crisis communication refers to activities aimed at disseminating information to internal and external audiences, preventing, planning, responding, and recovering from an emergency (National Fire Protection Association, 2013). A case study method lends itself to a deeper understanding of this topic because a college campus is a multilayered environment with many systems and subsystems. The CCF was used to evaluate the role of communication through the lens of interpretation and implementation of campus activities by leaders at the institution under study (Egnoto et al., 2016; Stofferahn, 2012). Epistemologically, a case study is rooted in non-positivism; therefore, it offers the advantage of providing in-depth description of a situation. In essence, "post positivism assumes an intersubjective world where reality is a social construction and the aim of research is to uncover the meaning of this reality as understood by an individual or a group," (Mills et al., 2010, p. 3). Case studies go a little further in the sense that they can take a reader vicariously to places where most would not have an opportunity to go and secondly case studies can also add depth and dimension to the theoretical understanding of issues (Donmoyer, 2009).

Case study methodology also offers tools for the study of complex phenomena. In *Case Study Theory*, Hammersley, Gomm, and Foster (2009) argued that the essence of case study by citing lies in its ability to proffer analytical and not empirical evidence or generalization. He further argued that a good case study seeks to present logical meaning, not statistical

interpretations. Case study research is an increasingly popular approach among qualitative researchers (Hyett, Kenny, & Dickson-Swift, 2014).The qualitative paradigm assumes that reality or knowledge is socially constructed, and it is, in some ways, what the participants perceive it to be.

Research Questions and Subquestions

The broad questions in this case study deal with precrisis communication, leadership, and trust-building within an institution of higher learning with respect to the way leaders prepare for a crisis in the aftermath of a major crisis.

RQ. What is the role of communication in crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?

SQ₁. How does leadership influence crisis-readiness and response on the campus of an institution of higher learning in the aftermath of a major crisis?

SQ₂. How does information sharing impact crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?

Research Design

Qualitative case study research method offers a researcher the tools to understand complex real-world phenomena within a natural setting (Baxter & Jack, 2010). Such phenomena could be social processes involving groups in which people have individual thoughts, values, expectations, opinions, and behaviors (Swanborn, 2010). Another unique aspect that made the case study method the best fit for this project is that case studies are suitable when a researcher intends to focus on answering the question *how* or *why* questions (Baxter & Jack, 2010).

Philosophically, a case study falls within the realms of constructivist paradigm (Yin, 2003). Constructivism is built on the premise that meaning is socially constructed based on

individual participant stories that describe reality (Baxter & Jack, 2010). The type of questions under investigation are of real-life nature, and these fall under the category of descriptive case study (Yin, 2003). This research also has elements of holistic case study with embedded units because data came from individuals within a group either from a survey or analysis of records (Yin, 2017).

The site for this inquiry was a college campus within an institution of higher learning which experienced a major crisis, and which is located within the Northeast Region of the United States. A unique feature of case study is to identify how the case is bound, and Yin (2017) suggested three ways to bind a case: by time and place, by time and activity, and by definition and context. Mills et al. (2010) argued that the very essence of a case study implies the possibility of demarcating, hence drawing boundaries around the specific case to be studied. This study was primarily based on Yin's recommendation of time and place where the event occurred. Mills et al.'s (2010) idea of spatial and temporal bounding, also highlighted the understanding and recording the antecedents of the event through the use of archival documentary evidence. In the same light, evidence indicating changes after the event in their communication, policies, and procedures lent insight into the phenomena.

Research Population, Sampling Method and Related Procedures

Research population. The participants in this study were employees of "Thriving University," the pseudonym of the institution under study. The participants are either assigned or designated employees who serve an emergency mitigation, prevention, planning, response, or recovery role on a campus. The preferred sample was employees who serve in the disaster planning and public safety department. Participants for the study held a variety of duties including security, emergency planning, safety marshal, corporate emergency response team

CERT, or computer emergency response team. In summary, participants were a part of the emergency team.

Sampling method. This study adopted purposive sampling; that is, a deliberate sampling method based on characteristics of the population because this sample is capable of revealing insights that are similar to other cases (Yin, 2017). There are several debates concerning the correct sample size for such a qualitative study. Some scholars argued that the concept of saturation is the most important factor to think about when considering sample size decisions in qualitative research (Mason, 2010). *Saturation* is defined by many as the point at which the data collection process no longer offers any new or relevant data, otherwise known as *theoretical saturation*. Guest, Bunce, and Johnson (2006) argued that many articles recommended that purposive sample sizes be determined by this milestone (Saunders et al., 2018).

There is no consensus in qualitative research regarding the exact number of participants for case study and the recommendations vary from five to 50 participants (Dworkin, 2012). In a review of Yin's Case Study Research, Aberdeen (2013) elaborated that determining a particular number of participants is irrelevant. Contrary to Yin's (2017) position, another study found that saturation occurred within the first 12 interviews, although basic elements for metathemes were present as early as six interviews in some cases (Guest et al., 2006).

In a qualitative study, unlike in quantitative studies, individuals, objects, events, or settings are purposively selected according to relevant predetermined criteria. Other researchers have also advocated for *thematic saturation* (Ando et al., 2014). They do so on the grounds that thematic saturation is the point at which no new information, insights, or issues are generated. *Saturation* refers to an aspect of data collection that has to do with the thoroughness of data

collection with respect to completeness of the process (Mills et al., 2010). Mills et al. (2010) argued further that theoretical saturation is a judgment of the adequacy about the empirical materials and subsequent analysis of the study. It is worth pointing out that the debate on saturation based on the most accurate sample size is far from settled.

To ensure that this enquiry gained a deeper and broader understanding of all the issues involved, this project adopted what is known as maximum variation sampling (MVS) in order to examine many subjects from different angles, thereby achieving a greater appreciation of the issues at stake (Etikan et al. , 2016). This type of sampling contains cases that are purposely as different from each other as possible.

Instrumentation

Interviews, questionnaire and archival documents, observations, interviews, audio-visuals, documents, and reports are all valid sources (Yin, 2017). Three methods of data collection used in this study were interviews, archival documents, and questionnaires. A hallmark of case study research is the use of many different sources of data collection (Baxter & Jack, 2010).

Interviews. Interviews were conducted face-to-face with the participants, and were unstructured with open-ended questions (Creswell, 2014). This case study, semistructured face-to-face interviews provided a rich understanding of how people construct meaning (Creswell, 2014). Individual interviews focused on generating rich data on the various activities and responsibilities with respect to crisis readiness. Each interview lasted between 45 and 90 minutes. This is the reasonable amount of time because 30 minutes could cause participants to feel rushed. Above all, the in-person interview provides a sense of naturalness to both the

interviewer and the interviewee with respect to place and time, this "naturalness" that does not

exist in telephone or the virtual interviews (Agar et al., 2003).

The main research question is:

RQ. What is the role of communication in crisis-readiness within a campus of an

institution of higher learning in the aftermath of a major crisis? (see supplementary questions in

Appendix B).

Given that the interview questions were semistructured, it allowed for a deeper and richer

freedom of discussion between the researcher and the participants. Not only did it create a

comfortable atmosphere, it also made for an insightful exploration of issues. In this light, the

interview questions were designed to explore and investigate the issues at a deeper level.

Questionnaire piloting. About three weeks before the first interview was conducted, a

pilot study was conducted with the questionnaire for 6 people. The term *pilot study* was used to

denote a feasibility study. It was also used test out the wording, the order of questions and the

range of potential answers (Lewis-Beck, Bryman, & Futing Liao, 2004). The pilot study was also

used to pretest a particular research instrument. More or less, it was a dry run or a run-through

exercise for the investigator to preview the study in an abbreviated form, so as to make and make

adjustments based upon the outcome. The pilot study also afforded the researcher the opportunity

to test the quality of an interview protocol and for identifying potential researcher biases.

Secondary data sources. Collected objects can produce a variety of verbal, numerical,

graphical, or pictorial data (Yin, 2017). In the context of this study, the focus was on items such

as emergency management policies, planning and response procedures, emails, brochures,

videos, and journals. Some were provided by the institution, while others were acquired from the

public domain.

Qualitative documents. Such documents were public documents such as newspapers, minutes of meetings, official reports, and private documents (Creswell, 2014). By definition, this list also included other documents such as campus publications, student newspapers, samples of emergency operations plan. Whatever the institution could not provide was acquired independently.

Data Collection

In qualitative research, data were collected primarily in the form of spoken or written words language rather than in the form of numbers. In order to make this process smooth and professional, this study proceeded methodically as follows:

1. A Concordia University–Portland, Institutional Review Board (IRB) and site authorization provided legitimacy and access to the institution of learning.

2. The researcher worked with the Assistant Vice President of Emergency Management to obtain access permits, recruitment of research participants, and scheduling of interviews.

3. Collection of documents(s) granting access and site familiarization

4. Distributed questionnaire: Develop the questionnaire on Qualtrics and distribution to participants.

5. Transcription of data followed by member checking of the transcripts.

Data collection took place on site at the campus of the institution of higher learning. The site and participants were selected purposely (Creswell, 2014). Furthermore, Creswell (2014) outlined that four elements are worth highlighting: site, actors, events, and the evolving nature of events. The actors or participants were staff members within the public safety department or staff

with a role or function that pertained to life safety or property protection on campus. Interviews were planned for uninterrupted days at the research site and located in a designated room.

The researcher used two audio recorders to capture audio files of interviews. The audio files were transcribed manually in combination with online transcription systems. After transcription, files were securely stored on four separate systems: iCloud, Google Docs, Dropbox, and a USB device. Each of these systems is independently owned and operated; they are also different security and protective systems. This quadruple storage ensured that at any given time there was a backup that was independent of the other in the unlikely event of breakdown.

Authorization. A few institutions of higher learning expressed a willingness to participate in this study when the researcher was exploring the feasibility of conducting research at various potential research sites. The researcher used the following inclusionary and exclusionary factors in the selection of participants.

Table 1

Inclusionary and Exclusionary Criteria

Inclusionary Criteria	Exclusionary Criteria
Hold emergency planning function	Minor or less than 17
Member of fire team	No role emergency or crisis role
Safety and security team	Visitor on campus
Building emergency coordinator	Supplier or vendor
Hold secondary assignment in crisis team	Colleague of appointee
Crisis team appointee	Mandated or forced to be team

As a descriptive case study, the goal was to interview, observe, and collect documents primarily on site by interacting with the participants. This study began with an introductory meeting introducing the researcher, the purpose of the study, and the role of research participants. This laid out the details of participant involvement and their potential contribution to the findings. The researcher also highlighted the process, timeline and participants' rights and responsibilities and consent as indicated in IRB guidelines. At all times, the researcher was mindful of the fact of role of a researcher is a guest in private spaces of the participants, hence there was an utmost commitment to ethical conduct.

Confidentiality. Pseudonyms were used in the study to ensure confidentially of all participants. When the researcher reviewed the data, none of the personal data had names or other identifying information. Data were coded so that only the principal researcher was able to link a participant to his or her pseudonym. This way, personally identifiable information was not stored with the data. No participant was identified in any publication or report. Personal information was kept confidential at all times, and all study documents will be destroyed 3 years after the conclusion of this study (IRB consent requirements).

Identification of Attributes

Schools need to adopt advanced planning and information sharing activities to strengthen a culture of trust (Topadzhikyan, 2013). Unfortunately, there is poor communication in all phases of emergency readiness in schools; besides, ineffective communication is the precursor to ineffective response (Dillon, 2016). For the purpose of this study, elements of crisis communication such as messaging, notifications, alerts, medium, feedback, transmission, encoding, and decoding were studied. Effective communication happens when there is effective leadership. Leadership plays an important role in the success or failure of an institution of

learning and safety. The role and significance of leadership is even bigger and has implications on students, the community, and beyond. "Leadership is of paramount importance to the success of schools and affects all stakeholders, but most especially students. The role of leadership is to make schools safe and effective ecosystems for learning commensurate with regulatory requirements and community expectations" (Frey, 2018, p. 2). In the case of emergencies, schools are not good at debriefing because debriefs are challenging (Crepeau-Hobson et al., 2012). As a result of this, vital information is sometimes not communicated to parents; therefore, schools lose credibility. As it turns out, the conceptual framework, wwork, links social capital (i.e., trust) with successful crisis response (Crepeau-Hobson et al., 2012).

These citations highlighted the interconnectedness between communication and leadership along the lines of the following attributes such as planning, information dissemination, information management, public relations, social media, public engagement, and crisis training. The following attributes have been identified in the current research question: communication, leadership, roles, crisis, incident, crisis, readiness, trust, social capital, planning, information, and stakeholders. Appendix C defines each of these attributes.

Data Analysis Procedures

Qualitative studies tend to gather different types of data such as interviews and documents, rather than relying on a single data source (Hatch, 2002; Yin, 2017). Prior to analysis, data were initially prepared for analysis by transcription of audio-recorded interviews and deidentification of personally identifying information within the transcripts in order to reduce interpretive bias. More importantly, after analysis, the research returned to propositions because this practices to a focused analysis when there is a temptation to analyze data that is outside of the research questions. To facilitate the processing of voluminous data collected,

ATLAS Ti was used to organize and analyze the data. The researcher began by reading the data aloud a few times, then began coding methodically.

Themes that cut across all these data sources were established based on the primary and secondary data, member checking, and triangulation of data sources. Further, the researcher also used pattern matching, linking data with propositions, explanations, logic models, and cross-case synthesis (Yin, 2017). Another way that was useful in concluding the case was to make use of storytelling in which researcher gave a chronological report or by addressing propositions identified prior to the study (Baxter & Jack, 2010).

Limitations and Delimitations of Research Design

Case studies are not generalizable; however, the results may be transferable in the sense that they allow users to see the world through the eyes and ears of the researcher. It therefore can be developed and applied in other circumstances provided there is due consideration to the context. Some limitations of this study included that the sample size depended upon the size of the department and the number of people who enrolled in the study. Care was taken to ensure participants understand the significance of their contribution. Other strategies were determined in consultation if the first attempt to recruit failed.

The second limitation of this study was potential researcher bias. This researcher is an educator with an emergency management background; therefore, it was possible that the researcher harbored some sympathies for the views of other participants. Very often, the case study method has been faulted for its lack of representativeness and what some have referred to as a lack of rigor in the collection, construction, and analysis of measurable values. This is potentially due to a lack of rigor linked to the problem of researcher bias and subjectivity. The past experiences of the researcher shaped the interpretation of the data (Creswell & Poth, 2018).

The researcher reduced researcher bias by revisiting the propositions identified in literature review in order to reduce bias in interpretation. The researcher further reduced bias by using a code auditor (i.e, triangulation). The researcher implemented a strong audit trail and kept a journal both for the purpose of reflection and for reflexivity. Reflexivity is an iterative process in which a researcher reflects on the basis for their claims to know the social world through an understanding of the relations between the content of knowledge, the context in which it is produced and the consequences that arise from its practice (May & Perry, 2017). In this inquiry, the researcher established a routine of daily 30-minute self-reflection and reflexivity times to identify ways in which the researcher's professional, social background, assumptions, positioning, and behavior impacted the research inquiry. Reflexivity is different from reflection in that reflection is one-sided.

Validation: Credibility, Dependability, and Trustworthiness

Validation refers to the trustworthiness in the findings that come from a study. A number of factors are important in bolstering the validity of a research project. These factors include written propositions, appropriate case study design for the research question, purposeful sampling, systematic data collection, effective data analysis, and more. It is worth highlighting that validity, credibility, dependability, and trustworthiness are not one single event. These are all part of the process that strengthens reliability and validity (Rose & Johnson, 2020).

Unlike other methods of research, case study design principles lend themselves to including different types of data and strategies in data collection process to enhance data credibility or truth value. In this light, a case study researcher can use a variety of tools and methods such as interviews, observation, mining data from documents, and other interactive data collection approaches (Merriam, 1998). In addition to this, during the course of data collection,

the researcher integrated an element of member-checking (Krefting, 1991). This enhanced the validity of the transcripts of the data collected. In addition to this, the researcher held a healthy sense of skepticism so as to identify discrepancies in the process of collecting the data. All responses were carefully interpreted on coded themes, propositions, and attributes that align to the research in the literature review and the conceptual framework. Besides thematic and attribute verification, researcher also sought rival or contradictory explanations throughout the research to strengthen the validity of claims and perspectives (Patton, 2002).

Credibility. Internal validity established the credibility of research results with respect to whether they correctly reflected the study and if the results are supported by the data collected. Strategies to increase credibility within this case study included data triangulation (i.e., examination of experiences) and member-checking in face-to-face or in private environments based on peer-reviewed literature (Creswell, 2014). There is a consensus that qualitative researchers, just as quantitative researchers have a duty to demonstrate that their studies are credible (Creswell & Miller, 2000). This can be enhanced through heterogeneous sampling, which involves selecting candidates across a broad spectrum relating to the topic of study.

Dependability. Dependability involved the researcher establishing (a) descriptive reports of the experiences of participants as they relate to crisis readiness; (b) triangulation of data from the interviews, member checking interviews, and questionnaires; and (c) reflective interpretation of the overall findings. Dependability was enhanced by triangulation, which is a process that aims at increasing the credibility and validity of the results. (Cohen, Manion, & Morrison, 2007) defined triangulation as an effort to map out, or explain more fully, the richness and complexity of human behavior by studying it from more than one standpoint.

Furthermore, researcher use expert triangulation for the conduct of interviews for collection and examination of data that is dependable.

Table 2

Research Questions and Related Instrumentation and Validity

Questions	Instrumentation	Validity
RQ What is the role of communication in crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?	Design of questionnaire and interviews, transcribe, code, analysis and interpretation.	Data sources, method sources, method triangulation, reflexivity.
RQ1 How does leadership influence crisis readiness and response on the campus of an institution of higher learning in the aftermath of a major crisis?	Design of questionnaires, delivery, transcription, analysis, and interpretation.	Data sources, member checking, method triangulation
RQ2 How does information sharing impact crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?	Design of questionnaire and interviews, transcribe, code, analysis and interpretation	Data triangulation, data triangulation, method triangulation, and reflexivity

Expected Findings

The findings for this study were predicted to support the conceptual framework, the CCF, and the propositions generated from the literature review. On one hand, the conceptual postulates that communities that are rich in social capital do a better job of preparing and responding to emergencies and crisis. On the other hand, the propositions pinpointed some specific touchstones and areas of concern. This case study generated data that supported the current body of evidence, which connects communication between stakeholders with social cohesion and social capital as an important ingredient in crisis preparedness and response. Both online and offline, effective communication increases social capital and this benefits stakeholders during the aftermath of a crisis (Procopio & Procopio, 2007).

Theoretical Propositions (TP)

This study is based on a broad premise or proposition that communication play a role campus crisis readiness in the aftermath of a major incident. Furthermore, the researcher presumes that every institution pursues a different path to keeping their students, staff and faculty safe in face of unprecedented gun violence in schools and colleges across U.S. Kopp et al. (2011) noted that school shootings, unlike natural or technological disasters, do not often present clear signals. This notwithstanding, attacks are often predominantly woven in colloquial evidence and organizational folklore even before an incident happens. Based on direct interviewing emergency management staff and those with emergency responsibilities, this study sought to understand the perception of crisis-readiness at Thriving University. Therefore, their perceptions, experiences, observations, and contribution to crisis readiness form a strong springboard for our understanding of how Thriving University is going about the business of readiness.

This study was based on a few theoretical propositions identified from literature review. A proposition is general declarative statement that something is or not the case. These propositions have guided the design of the sub questions used in the interview protocol. The research findings of this study either confirmed the theoretical propositions or contradicted the theoretical propositions to create a new epistemological understanding of crisis readiness within the institution under investigation. The following describe the specific theoretical propositions that guide this study.

Proposition 1: Effective communication can make or break an institution's crisis readiness. Poor communication was an entrenched issue, so much so that it took authorities over two hours after the incident before sending out a mass alert to notify students of a shooting

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(Dillon, 2016). Communication has been found to promote performance because it directs analysis and guided performance in terms of mental and specific causes (Ellis et al., 2006). Though mainstream media has enjoyed greater credibility, social media has been growing in significance and has found better and faster ways of getting information out during a crisis (Egnoto et al., 2016).

Proposition 2: Focusing events have the potential to be a wakeup call for leadership of institutions. According to Dahl (2010), events sometimes serve as a focus in government policy making because they remind decision-makers to be more receptive to intelligence and intelligence collection. The establishment of trusting relationships between school personnel and all students is essential in successfully resolving school hostage and barricade events (Daniels et al., 2007). In some cases, effective response and lasting recovery was compromised by lack of inclusion and inconsistencies in mandates on how schools deal with active shooter incidents (Monzingo, 2017).

Proposition 3: Information-sharing strengthens community capital. Topadzhikyan (2013) pointed out that schools need to make strides in crisis prevention by adopting advance planning and continuous information sharing with stakeholders. Himes-Cornell et al. (2018) argued that that a community's ability to cope with a disaster depends on its endowment of social and economic resources, collectively known as "community capital. Similarly, Jeffres et al. (2013) advocated that greater public engagement yields communication capital. In this case, communication refers to symbolic activities that impact civic engagement, including all forms of communication that facilitate social problem solving with a community. The establishment of trusting relationships between school personnel and all students is essential in successfully resolving school hostage and barricade events (Daniels et al., 2007).

Proposition 4: Debriefs, after-action reviews and feedback loop are essential in learning and readiness. With respect to communicating corrective action, so far, it is not clear how much corrective action is based on sound communication (Dillon, 2016). Lessons are not sufficiently utilized to prevent future incidents. Modzeleski and Randazzo (2018) also argued that it is possible to prevent school shootings by looking at a person's behavior and/or communications. In over half of the incidents they studied, there was a prior threat of some kind of indication in a journal entry to classmates somewhere (Fritzon & Brun, 2005).

Proposition 5: There are multiple layers of institutional learning in the aftermath of a crisis. Lessons are not sufficiently utilized to prevent future incidents. Modzeleski and Randazzo (2018) also argued that it is possible to prevent school shootings by looking at a person's behavior and/or communications. Preston et al. (2015) argued that there are two main types of community learning that occur after disaster. Small-loop learning results in incremental, adaptive or experimental changes, whereas large-loop results in a paradigm shift. Overall, there are three types of community learning in a disaster: navigation, organization, or reframing. Deverell (2009) argued that learning from crisis happens in a series of crisis-induced lesson-drawing process. The learning process is either based on single- or double-loop learning. In citing Argyris and Schön, Deverell indicated that single-loop learning is achieved when organizational members detect and correct flaws in the organization and its procedures without inquiring into basic organizational premises and norms. On the other hand, there is also double-loop learning that takes the form of restructuring of organization's norms, strategies, and assumptions. Crepeau-Hobson et al. (2012) argued that evaluations or debriefings are probably the most challenging aspect of the crisis response process in school crises. To limit the issues of

organizational forgetting and double-loop learning, Collinson, Cook, and Conley (2006) advocated for error detection.

Proposition 6: Emergency planning and plan updating are essential to crisis readiness. Dillon (2016) observed that Virginia Tech's emergency plan needed updating and maintenance. Dillon, citing Giblin et al. (2008), pointed out that 70% of plans surveyed required significant upgrades. Individually and collectively, the propositions informed the design of interview protocol strengthened the process of triangulation in data analysis.

Ethical Issues in the Study

Conflict of interest assessment. This researcher ensured that conflicts, if any, were acknowledged and addressed appropriately. Permission was obtained from university authorities during the entire process of the research project. Participants completed informed consent documentation and were made aware of their rights in writing.

Confidentiality of the research data and findings was maintained through the use of pseudonyms for each participant in this study. The data was stored both electronically on the researcher's laptop and via hardcopies that were kept in the researcher's personal bookshelf. When the research was completed and finalized, the data used will be kept securely until after 3 years per IRB guidelines. The summary of findings will be shared, and the researcher has sought to reduce deductive disclosure risks and maintain the confidentiality and privacy of participants and de-identification of the research site.

Researcher's position. This researcher aimed at maintaining an objective perspective as much as possible. The researcher anticipated that the process would be a learning opportunity for the participants involved as well as the researcher. Furthermore, the researcher believed the study would contribute to the field of educational leadership and college crisis readiness. it was the

researcher's hope that this study gives a unique insight into the role of communication in the making of safe schools and communities, especially in the area of school shootings.

Summary

Chapter 3 described the non-positivistic philosophy and the constructivist theories that undergird the methodology and methods used in the design of this qualitative case study. It also provided details regarding the process to be used to inform the main research question of *What is the role of communication in crisis-readiness within a campus of an institution in the aftermath of a major crisis of higher education that has experienced a major crisis?* The participants, setting, and data generated helped to better understand what happens at one campus within the institution. Also, the chapter presented the processes used in the analysis of the data, validation, limitations, findings, and ethical considerations. This chapter is the foundation for the research protocol in this study and outlined a rigorous commitment to purpose, structure, process, and details critical to the successful completion of the research project.

Chapter 4: Data Analysis and Results

In 2018, there were a record 94 gun violence incidents in schools across the United States (Davis, 2018). As the spate of gun violence in schools took its toll, over 4.1 million children participated in school lockdowns (Schlanger, 2018). In the face of the precipitous rise in gun violence, school and college authorities have embraced a variety of activities and approaches to prepare or prevent gun violence. Many schools and colleges have gone as far as staging active shooter drills and school lockdowns involving staff and students. Some of the activities have yielded unintended and undesirable socio-emotional consequences on students. In some cases, teachers and students were left bruised, bleeding or frightened after a drill in which a teacher was shot with plastic pellets (Schlanger, 2018). Such unintended consequences have prompted the need for school psychologists to be involved in the planning of active shooter drills in schools (Erbacher & Poland, 2019). Based on the literature review, different schools, colleges, and institutions of higher learning approach emergency and crisis readiness in very different ways.

This single-case study sought to understand the role that communication plays in campus crisis preparedness within a campus in an institution of higher learning that has previously experienced a major crisis. Arguably, administrators at institutions which have experienced a major incident will have learned some lessons or made some changes that shed light on the process of crisis readiness. The researcher interviewed the staff of an institution about their perceptions of crisis readiness practices, communication activities, and leadership influences. This study used three methods of data collection: one-on-one interviews, an anonymous online questionnaire, and document analysis to understand staff perceptions of crisis readiness at the institution in this study.

Thriving University is a pseudonym of the institution under study and is located within the Northeast region of the United States. What makes this institution unique is that it has experienced major incidents resulting in loss of human lives within a decade. Beyond the crisis incident, the institution has won a special accolade in higher education emergency and crisis readiness presented by an independent nonprofit organization with rigorous national standards for emergency planning. The assessment was based on exacting national standards in areas such as hazard identification, risk assessment and impact analysis, emergency program management, hazard mitigation, operational planning procedures, incident management, incident communication and warning, management of emergency resources, training and exercises, and post-incident recovery. Since the founding of the independent assessor organization in the 1990s until present only a few scores of organizations have earned accreditation so far.

Pilot Study

Prior to going to the field for data collection, a pilot study was conducted with six participants who either currently work or have worked in higher education. A pilot study is a trial run or pretest of the instruments and researcher interviewing skills of a particular research project to have a better practical feel of an instrument or procedure (Lewis-Beck et al., 2004). Participants were chosen carefully to mirror the participants in the real study. Conceptually and practically, the goal of the pilot study was to test the data collection instruments, particularly the online questionnaire and semistructured interview questions in order to troubleshoot unforeseen issues with the flow of the questions, to refine the wording of the questions, and to gauge the duration of both the online questionnaire and the in-person interview. The pilot study lasted for 30 days and was conducted virtually.

Pilot findings. The outcome of the study was threefold: (a) participants largely reaffirmed most of the methodology design, (b) offered some suggestions, and (c) confirmed the duration of taking the online questionnaire. With respect to the integrity of the design, the participants agreed that the design was well-thought-through. Regarding suggestions for improvement, Participant 2 suggested that Question 8, regarding the arming of educators, be moved to the very last question in the interview to avoid it from triggering any negative emotions. In his opinion, the question could take an emotional toll that disrupts the interview, particularly for any participants who worked at another IHE at the time of the last major incident; as such, the researcher moved this question to the very end of the interview. Participant 5 made some semantic adjustments and suggestions in the questions of the questionnaire. On their part, Participants 3 and 5 agreed that instruments of data collection were ready to proceed. With respect to the duration of the study, all the participants reported that the time spent on taking the questionnaire was less than four minutes.

Besides the pilot study and prior to starting the data collection, the researcher also revisited the literature to identify important core themes, issues, and, above all, to generate *a priori* codes from the literature to guide the next phase of the study. A code book of *a priori* codes were generated as reflected in Figure 2; a word cloud illustration of the codes generated from literature review.

Figure 2. Word cloud of *a priori* codes.

Description of the Sample

Eight participants participated in the in-person interviews which were conducted at various locations on-site at the university. Twenty-one participants completed the preceding online questionnaire. All of the participants are current employees of the institution and are employed in different department. All of the participants have a role to play in emergency readiness. Some have responsibilities that are directly related to emergency mitigation, planning, response, or recovery. In terms of physical location, they work in different areas and have different supervisors and directors.

The Director of the Emergency Management emailed the online questionnaire link to participants with an introduction of the purpose of the study. Over 60% of the interviewees work in the public safety department and approximately 40% from other associated departments. The original plan was to interview 12 participants; however, only eight people signed up for the study within the allotted study window. Of the eight interviewed, there were four men and four

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women. The participants or respondents in the interview segment came from four different departments. Respondents' ages ranged from 25 to 70. Of that number, there was one participant between the ages of 25 to 35, one participant between the ages of 35 to 45, five participants between the ages of 45 to 55, and one participant over the age of 65. In line with Concordia University–Portland's guidelines for research, the researcher obtained permission from the IRB. The IRB further designated requirements on the conduct of the research on salient issues such as purpose of study, scope of study, potential subjects, collection and preservation of data from the field, the duration of the study, and the protection of the identities of the interviewees. Table 3 is an overview of participants who participated in the study.

Table 3

Participant Demographics

Pseudonym	Years in Readiness	Role in Crisis Readiness
Participant 1	2	Emergency coordination
Participant 2	2	Emergency coordination
Participant 3	> 10	Emergency support
Participant 4	> 7	Director
Participant 5	> 25	Administrative support
Participant 6	> 4	Director
Participant 7	> 5	Planner
Participant 8	> 10	First responder

Data Collection

In the process of data collection, two primary data collection instruments were used to generate deep, rich content and one secondary data instrument was used to complement and

validate the other two sources. An online questionnaire (see Appendix C), consisting of 20

questions was administered through the Office of the Director of Emergency Management. The

office of the director emailed the questionnaire to the participants with an overview. The main

data collection instrument was a semistructured interview (see Appendix B) consisting of 18

questions. Participants who took the online questionnaire were given an opportunity to opt-into

the interview. An average interview lasted approximately one hour. In addition to the

questionnaire and the interviews, the researcher conducted a document analysis based on existing

emergency management documents, publications, and regional newspaper reports relating to the

institution and its crisis preparedness activities. The research question and subquestions below

guided the process of data collection with respect to the scope, depth, and breadth of study:

RQ. What is the role of communication in crisis-readiness within a campus of an

institution of higher learning in the aftermath of a major crisis?

SQ₁. How does leadership influence crisis-readiness and response on the campus of an

institution of higher learning in the aftermath of a major crisis?

SQ₂. How does information sharing impact crisis-readiness within a campus of an

institution of higher learning in the aftermath of a major crisis?

Research Methodology and Analysis

The purpose of a case study is to investigate contemporary phenomenon in depth and

within its real-world context (Yin, 2017). In this study, the goal was to generate rich data based

on perceptions of crisis readiness within a campus, so as to understand the role of

communication in crisis preparedness. The institution in this study, Thriving University

(pseudonym) is located within a single campus of an institution of higher learning in the

Northeast Region of United States. This study's research questions served as the filter through which all the data were collected from the field.

After months of correspondence with authorities at the institution, the researcher scheduled interviews with participants who gave consent subject to Concordia University–Portland's IRB guidelines. The Office of the Director of Emergency Management forwarded a virtual questionnaire link to participants who were directly or indirectly connected to emergency readiness at the institution. The questionnaire was designed in Qualtrics and was comprised of 20 questions. Participants in the interview were predominantly those who had taken the anonymous online questionnaire. Most of the interviewees had functional or secondary roles relating to emergency management. About half of the interviewees were from the public safety department, while others came from other research or auxiliary departments. All interviews were recorded using two digital audio recorders and later transcribed from audio to text. After transcriptions, the researcher deleted the audio files from the computer. The transcripts of the interviews were sent to the interviewees for verification of their accuracy. Post-verification transcripts were stored on password-protected computer only accessible to the researcher.

Interview questions were designed to glean participant perceptions on crisis readiness with a spotlight on the role of communication in crisis readiness, leadership influence and how information sharing impacts crisis readiness on a campus where a major incident occurred previously. In addition to the interview and online questionnaire, a document analysis was also used in generating data from multiple secondary sources such as the university's website, national and regional newspapers, posters, and other published documents from the institution such as emergency and communication plans. These documents covered subjects such as how to

deal with fires, floods, lightning, tornadoes, medical emergencies, shelter in place, or secure in place.

Raw data emerging from the interviews were transcribed and consolidated into a Microsoft Word document. After editing the document for grammar, it was imported into ATLAS.ti, a computer program for qualitative data analysis; it is useful in coding process (Saldaña, 2015). The document was comprised of eight categories representing each interview participants' responses to 18 semistructured questions. Based on a line-by-line open coding within ATLAST.ti, the researcher generated 224 codes from the interviews. After the generation of codes, the researcher exported the codes for a manual analysis based on color-coded index cards. Codes relating to communication were labeled blue, codes relating to leadership were labeled red, while codes relating to information-sharing were labeled yellow. Individually and collectively, the color coding enhanced the visual process of analyzing by sorting, identifying, combining, comparing, contrasting, and integrating of various components of the codes. Color codes enhanced the researcher's visual and conceptual analysis. Based on these analyses and permutations, a total of eight categories were derived from the 224 codes.

With respect to the data from online questionnaire on Qualtrics, an online system that enables a researcher to gather, analyze, and present visual data. In the online questionnaire, 20 five-point Likert scale questions were generated based on concepts and issues identified in the literature review. There were 21 respondents who participated in the questionnaire. Unlike in the case of the interview data, there were no manual analyses of the data in the online questionnaire. With the use of queries, Qualtrics collated the data and presented the findings via pie charts, bar charts, frequency charts, tables, matrices, and more.

Regarding the document analysis segment of data collection, the researcher collected, reviewed, and analyzed mainly secondary data about the institution from a variety of sources including the following documents: the Clery Act, Emergency Operations Plan, Comprehensive Emergency Plan, a journal on traumatology, Semantic Scholar, regional newspapers, an education weekly paper, the school website, online posters on securing in place, lightning, medical emergency, tornado, flood, and the institution's crisis communication plan. The data derived from a review and analysis of the documents was used validating claims expressed in the interviews, far-flung ideas from the online questionnaire, or other isolated details worth substantiating or validating.

Data collected from the interviews formed the backbone of the study; however, that was not enough to meet data validity requirement set forth in the research methodology. For that reason, the researcher triangulated findings generated from the in-person interviews with the findings generated from the online questionnaire and analysis of documents which spanned a period of over a decade. The data were compared, juxtaposed, contrasted, differentiated, and analyzed to identify similarities in events, activities, consequences of intermittent decisions, consequences, patterns, and trends. Triangulation with more than one approach to investigation enhanced confidence in the findings (Lewis-Beck et al., 2004). In this light, the themes from the interviews were compared to the findings from the online questionnaire and the document analysis to identify common threads of intersection or isolation.

Summary of the Findings

The answers captured from the interviews were the perceptions of respondents. After analyzing the 224 codes for patterns and interconnections (see Table 4), eight categories emerged which were further narrowed to four themes. The eight categories emerged from the 224 codes

through a multiple round of analyzing a well as interpreting various connections and interconnections. Here are the eight categories that emerged from the process:

- communication is a key component of information credibility,

- communication enhances crisis readiness buy-in and implementation,

- supportive leadership in crisis readiness,

- leadership effectiveness spans a 180-degree view,

- high efforts towards community partnerships,

- real-time monitoring and use of social media in outreach,

- iterative incident debriefs to improve training and preparedness, and

- entrenched adoption of new technologies to support crisis readiness

A closer analysis and examination of the interrelationships, interconnections, and permutations of the eight categories yielded the following four themes that herald and anchored this study based the evidence gathered from in-person interviews, the online questionnaire, and document review and analysis.

- Communication influences credibility and trustworthiness.

- Supportive leadership facilitates partnerships.

- Culture of engagement and monitoring.

- Technology adoption.

Although these themes are related to the research questions, the questions did not determine the themes.

Thus, as highlighted above, the interviews established a foundation upon which the categories were scaffolded into themes. Given the fact that each method of inquiry was independent of the other, triangulating the data from multiple sources enabled the researcher to

validate the claims. All the participants answered the 18 research questions that guided the study. Based on the questions, the codes in the word cloud were generated (see Figure 3). Upon further analysis, the four themes below (i.e., communication influences credibility and trustworthiness, leadership facilitates partnerships, culture of engagement and monitoring and technology adoption culture) were established by combining several sources of data or perspectives from different participants; this process strengthens validity of a study (Creswell, 2014). This is further examined in the following segments.

Figure 3. Word cloud of research findings.

Summary of Theme 1: Communication influences credibility and trustworthiness. This first theme sheds light on the intersection between communication, credibility and trustworthiness with respect to the role of communication in the mitigation, preparedness, response, and recovery phases of emergency and crisis readiness.

The researcher noted that communication influences credibility and trustworthiness based on responses from five interview participants. Participant 4 said that the emergency management department works with a communication student intern who helps the department to fine-tune messages that are sent to students to ensure that the messages are "more aligned with students." The perceptions of this participant and four other participants are corroborated by the findings from the anonymous online questionnaire, in which 15 out of 21 respondents had confidence in the way the institution's leaders communicated with stakeholders. A further breakdown showed that eight of the respondents agreed strongly with the statement and seven somewhat agreed that they had confidence in their leadership's ability to communicate with stakeholders.

The emergence of this theme was important in answering the main research question: *What is the role of communication in crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?*

Summary of Theme 2: Supportive leadership facilitates partnerships. This theme relates to the various roles that leaders play in the process of planning, mitigating, and implementing crisis readiness programs on campus. It also provides insights into how leaders connect internal and external stakeholders in the process of generating collaboration and participation in crisis readiness and beyond.

"The leadership here is very supportive. They're supportive of the mission. The mission of emergency management after the attack is threefold. Individual preparedness, departmental readiness and university resiliency," said Participant 2. He further added that the emergency management team works like a close-knit family. Overall, he acknowledged that beyond the institution's leadership, the leadership of entire community has been very supportive of the

public safety department which comprises of the police department and the emergency management department.

On her part, Participant 6 said, "We're lucky to have such a culture in campus that is so supportive to cross-departmental work. I'm in a lot of collaboration." As a result of the collaborations in drills, exercises, and initiatives, new ties and connections are forged. Participant 4 alluded to the fact that Thriving University is located within one of the best "town-gown" communities within the United States. According to Participant 4, a *town-gown* community lends itself to stronger social ties that serve as a healthy foundation that facilitates community engagement, and institutional and organizational partnerships.

The emergence of this theme "Supportive leadership facilitates partnership" relates to subquestion (SQ$_1$) of *How does leadership influence crisis-readiness and response on the campus of an institution of higher learning in the aftermath of a major crisis?* Conceptually, this theme addresses the issue of leadership within the context of community. In this light, the anonymous online questionnaire also validated SQ$_1$ in the sense that 14 respondents of 21 strongly agreed that past crisis experiences motivated the institution to be crisis ready. On the contrary, only two out of 21 strongly disagreed with this statement. Therefore, evidence from the interviews and online questionnaire leans positively in support of leadership's ability to be supportive of crisis readiness.

Based on a document review and analysis of the institution's Emergency Operations Plan (EOP), a document which delineates how an organization, institution, or facility responds to an emergency with respect to roles, responsibilities and resources, it was revealed that the roles and duties of the senior leadership that corroborated what Participant 4 and Participant 7 alluded to. Another piece from a higher education publication that demonstrated evidence of effective

leadership indicated that the president of the institution has delegated to the senior police officer on duty, the authority to send out a text message in the event of a threat to the campus. In essence, the three sources cross-validated the emergence of this theme.

Summary of Theme 3: Culture of engagement and monitoring. This theme relates to the way of life of the institution and how the institution goes about thinking, engaging with individuals and groups in the process of informing, influencing, and observing what goes on around the institution. Participant 4 asserted that during new student orientation, the emergency management department gets between 30 minutes to 1 hour to "explain about public safety on campus." In the weeks and months after the orientation, the department scheduled multiple events to further engage and interact with students about campus safety. Participant 2 indicated that every year he engaged with students through events such as homecoming, health fares, sport events, class presentations, and many other special events that he referred to as "tabling-events." Through such events, the emergency management department distributed flyers, mementos, handout giveaways, as well as promoted LiveSafe application, a mobile application that enables students, staff, and faculty to connect with police when in need of help, get emergency information at any time, seek help in finding buildings on campus or sharing their geographic location with friends and family for safety reasons, as well as other crisis-readiness activities.

In addition to ongoing stakeholder engagement, University Relations, the public relations arm of the university, uses dedicated staff of six to monitor social media via Twitter, Facebook, and Instagram. Participant 2 said, "We're monitoring social media. There's somebody tracking it." This ensures that authorities are able to have an early handle on issues before they grow out of control. Further evidence from the online questionnaire suggests that 71.43% of respondents agreed that stakeholders such as students are engaged yearly in crisis-readiness activities.

These findings provided evidence in support of research subquestion (SQ$_2$) that focuses on how information sharing impacts crisis-readiness within a campus. Based on the above findings on student, staff, faculty and outreach efforts, the question of engagement is addressed to a large extent.

Summary of Theme 4: Technology adoption culture. Theme 4 relates to the institution's affinity for technology in the area of crisis readiness. The use of technology runs deep, from daily use of social media to mobile applications to tech tools for preparing and responding virtually to a crisis command room if need be. It demonstrates a culture of extensive technology adoption and usage.

Participant 3 asserted that the University used a mobile application called "TU Alerts" to notify students, staff, and faculty about important updates. She cautioned that though it is very useful, the institution does not "bombard them with minor alerts." It is worth noting that the "TU" in TU Alerts is a pseudonym to protect the identity of the institution in the study. The alerts are an important element of their culture of keeping everyone informed and alerts reach students, staff, faculty, and perhaps some parents. Participant 7 added, "TU alerts have done a pretty good job. I know sometimes it feels like we get a lot of them, but I think it's great to know you're still letting us know what's happening." The institution's pioneering role in developing and implementing a comprehensive proprietary alert system has been copied by other institutions of higher learning.

Besides TU Alerts, Participant 1 alluded to a virtual system known as VEOCI, a virtual emergency operations center that enables authorized users to contribute remotely to an ongoing emergency or crisis. The system is designed to also capture critical 911 emergency calls, thereby keeping all decision makers abreast of a situation. On a daily basis, the system is also used for

managing on-campus events like—football games, signing in and out special emergency

resources such as portable radio sets. Participant 4 said having school authorities use this system

frequently, it becomes familiar before an emergency or crisis occurs. Such familiarity enhances

their ability to use it during a crisis.

These findings further validate research SQ$_2$ on how information sharing impacts

readiness. Based on these findings, crisis readiness systems such as VT Alerts, VEOCI, and Live

Safe App along with a host of others, authorities have succeeded in embedding crisis readiness

activities into everyday technology use, thereby increasing familiarity of their existence and

potential use during an emergency.

Presentation of Data and Results

Theme 1: Communication influences credibility and trustworthiness. Findings from

both the interviews and the anonymous online questionnaire administered prior to the interview

corroborated this theme. The questionnaire was based on a 5-point Likert scale, a scale that

measures attitude, opinion, or perception based on unidimensional variables or constructs

(Maeda, 2015). The answers ranged from strongly agree, somewhat agree, neither agree nor

disagree, and somewhat disagree to strongly disagree. Given the fact that respondents were not

required to provide personal identifiers, the researcher hoped to generate unblemished findings.

With respect to the online questionnaire, Question 16 of the questionnaire asked

respondents a question relating to the frequency of information sharing on emergency and crisis

readiness (see Figure 4). Of the 21 respondents that answered the question, 17 strongly agreed

that frequent information sharing strengthened emergency and crisis readiness. Another three

somewhat agreed with the assertion, while one respondent somewhat disagreed, and nobody

strongly disagreed. There was equally nobody that neither disagreed nor agreed. Table 4 sheds light on the participants' perception of frequent information sharing on stakeholders.

Further evidence from the online questionnaire demonstrated that the institution's authorities do a good job at communicating directly with stakeholders to inform, educate and influence. This evidence comes from question 19 in the online questionnaire, in which 17 respondents out of 21 strongly agreed that "The institution has adopted a customized messaging approach in communicating with stakeholders." The in-person interviews validated this finding. The institution uses a tool known as TU Alerts (pseudonym) in outreach.

Table 4

Perception on Frequent Information Sharing With Stakeholders

#	Answer	%	Count
8	Strongly agree	80.95	17
9	Somewhat agree	14.29	3
10	Neither agree nor disagree	0.00	0
11	Somewhat disagree	4.76	1
12	Strongly disagree	0	0
	Total	100	21

In a similar question regarding the way the institution shares information, 40.9% strongly agreed and 45.45% somewhat agreed that the institution shares emergency and crisis readiness information with staff, students, faculty, and parents. As in the previous question, no respondents disagreed with the contrary assertion.

Undoubtedly, Question 1 of the online questionnaire also sheds light on the theme of communication, credibility, and trustworthiness. Participants were asked to agree or disagree

with the assertion that the institution shares emergency and crisis readiness information with students, staff, and parents. As illustrated in Figure 4, an overwhelming percentage of respondents strongly agreed or somewhat agreed with the statement. This underscores the importance of communication as an indispensable element of building credibility and trustworthiness.
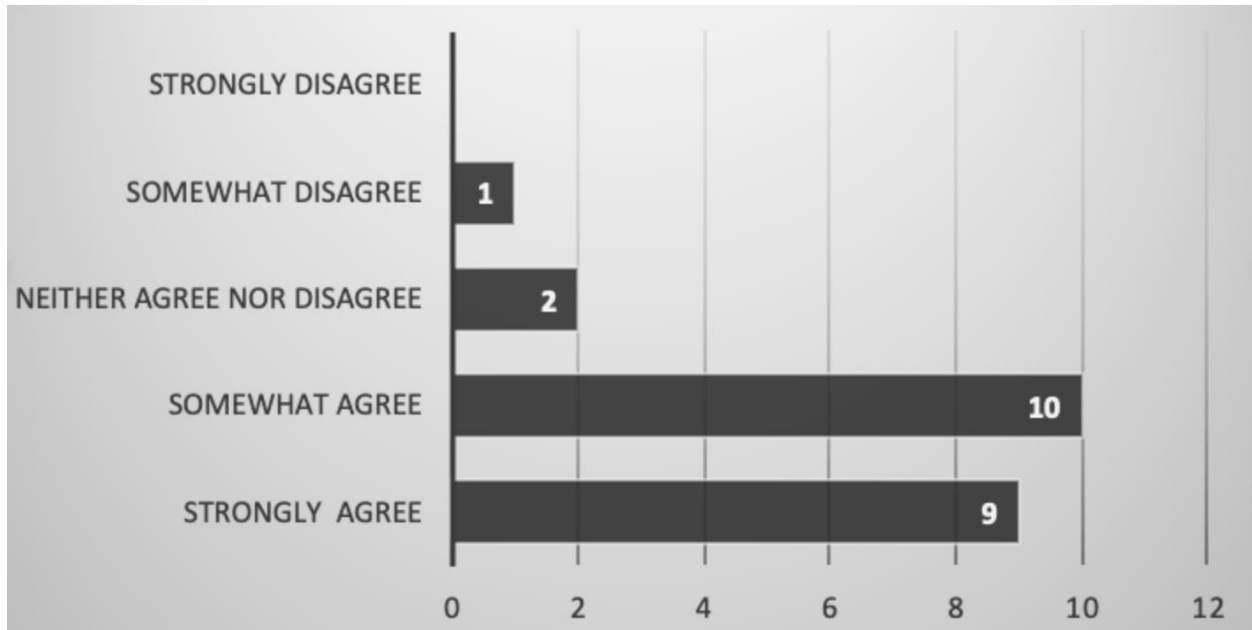
Figure 4. Perception of the importance of communication in crisis readiness.

Further evidence from the interviews corroborates the foregoing theme. For instance, Participant 3 talked about the fact that personal relationships with people is "a big part of communication and keeping and that builds trust." She added that this is important because the more information is disseminated, the better the relationship. Participant 1 concurred with Participant 3. He said communication at its barest minimum is not about "hardware systems." This includes in-person meetings, on-site meetings between various authorities from facilities, emergency management, police department, and university relations.

On the other hand, Participant 6 argued that communication must be deliberate and intentional because intentional communication identifies the key stakeholders. In her opinion, when the message is designed with the stakeholder in mind then the message is in alignment, thereby increasing credibility. In essence, both the respondents in the questionnaire and the interview agreed that communication is a significant element of building credibility between the institution's authorities and students, staff, faculty and parents.

The above theme can be further corroborated by a source generated from the document analysis. A regional newspaper (name withheld to avoid deductive disclosure) reported about a high-tech alert system that is capable of warning students and faculty members at Thriving University. In a similar report, an educational journal reported in 2017 that the institution has made progress with notification systems; it is a far cry from what it was during the major incident (reference withheld to prevent disclosure). It alluded to the fact that its website "features campus safety section linked directly from the homepage, complete with a letter from the president." The institution has also implemented email, Twitter, tornado sirens, electronic signs that hang in classrooms, desktop alerts, and alerts on their homepages.

Theme 2: Supportive leadership facilitates partnerships. Question 2 of the questionnaire shed light on the way staff perceive their leadership's ability to facilitate readiness partnerships. This question was aimed at testing respondents' confidence in the way leaders communicated with stakeholders. Of the 21 respondents, 38.1% strongly agreed and 33.33% agreed that they had confidence in the leadership of the institution in the way they communicated with stakeholders.

Evidence from the institution's Emergency Operations Plan (EOP) revealed that Thriving University's EOP, an official document that outlines or provides guidelines on how a facility will

respond and manage to an emergency or crisis effectively and efficiently. The EOP stated unambiguously, "The Safety and Security Policy Committee (SSPC) provides direction in making strategic policy decisions for any incident that impacts the university's ability to perform its mission essential functions and primary business functions, chaired by the President." The SSPC is the highest crisis management organization in the university.

In the interviews segment, Participant 4 alluded to the important mandate of SSPC and the role of the EOP during the interview. In 2017, an educational periodical (name withheld), reported that the president of the University has delegated the role of emergency alerting to the "senior police officer on duty," thereby giving them the "authority to send out a text message if there is a threat to the campus." Therefore, this theme has effectively been validated by all three sources of data collection.

Question 10 of the online questionnaire also demonstrated that there is high stakeholder trust in this current crisis leadership team. It was found that seven of 21 strongly agreed that they had confidence in the current crisis team, while 10 participants somewhat agreed with the statement of confidence in the leadership. There were four participants who were undecided, that is, they neither agreed nor disagreed with the statement. No participant somewhat disagreed or strongly disagreed with the assertion. It is arguable that trust runs deep at Thriving University. Question 18 on microblogging by staff and students during crisis response and recovery has demonstrated that over 15 of respondents are neither for, nor against. There were two in support of this activity. Although this is very low support, it speaks volumes in that it did not get overwhelming rejection, because microblogging is often held is utmost contempt at most institutions.

Furthermore, participant 4 alluded to the fact that Thriving University is found within what he called a "Town Gown Relationship." He added that the relationship between the University leadership and the city has always been "very good as measured against other town-gown relationships with other universities across the country. We have consistently had a pretty good relationship." The finding validates Theme 2 on leadership and is also in line with the underpinning of the conceptual framework.

Table 5

Perception of Leadership in Crisis Readiness

#	Answer	%	Count
1	Strongly agree	38.10	8
2	Somewhat agree	33.33	7
3	Neither agree nor disagree	14.29	4
4	Somewhat disagree	0.00	2
6	Strongly disagree	0.00	0
	Total	100	21

Further evidence of corroboration for this theme can be drawn from Question 3 on the questionnaire. The question sought to understand the respondents' perceptions of how institutional leaders engaged with local businesses, political, and financial leaders. Of the 20 respondents in this question, six of 20 strongly agreed and 9 of 20 somewhat agreed with the assertion, while five respondents neither agreed nor disagreed. Apart from the findings from Question 2 and 3 above, Question 13 shed light on the issue of social ties and community connections as elements of emergency and crisis response and recovery. In this light, a greater of respondents agreed with the question with almost no exception.
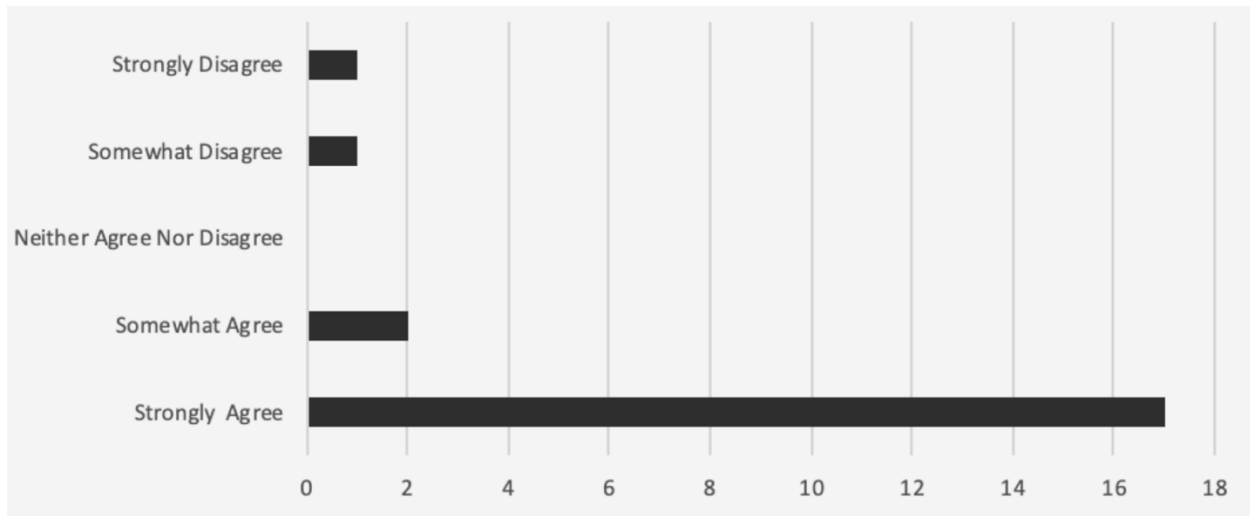
Figure 5. Perception of social, political and community ties.

Theme 3: Culture of engagement and monitoring. Online Question 8 explored the respondents' perceptions of social media use in response and monitoring. Of the 21 respondents who answered the question, 10 respondents strongly agreed, while six respondents somewhat agreed that social media is an effective communication tool during an emergency. On the contrary, two participants somewhat disagreed with that perception. Therefore, not a single participant disagreed with the importance of the role of social media in response and monitoring of an emergency or a crisis on campus.

Table 6

Perception of Role of Social Media in Engagement and Monitoring

#	Answer	%	Count
1	Strongly agree	47.62	10
2	Somewhat agree	28.57	6
3	Neither agree nor disagree	14.29	3
4	Somewhat disagree	9.52	2
5	Strongly disagree	0.00	0
	Total	100	21

Similarly, Question 11 queried participant perception about the institution's scheduling of crisis readiness activities throughout the year. Like with social media engagement, a significant 15 respondents that the institution schedules crisis readiness activities. A breakdown of the 15 shows that 10 respondents strongly agreed and four somewhat agreed, while two respondents neither agreed nor disagreed. Furthermore, three respondents somewhat disagreed and 4.7% strongly disagreed. Overall, this trend and pattern is similar for six questions relating to the dissemination of after-action reviews or debrief, lessons learned from previous emergencies and crises, and the engagement of mutual aid partners.

The interviews also shed light on the issue of stakeholder engagement. With respect to student engagement, Participant 7 said engagement "builds trust with students." She added that ideally, engagement should be based on transparency and centered on helping students not just when they are on campus, but well beyond campus. In her area relating to veterinary medicine, she made an effort to offer training or direct students to find training programs from websites such as FEMA. Participant 6 fosters student engagement differently. Unlike other respondents,

she gets students, and faculty to complete a "safety assessment." For a vast majority of student travelers, she said, "I'm engaging with them in a smaller group dynamic, through some one of those educational programs, or briefs."

In most of the questions, the respondents were decidedly for or against an issue, however when it came to support for microblogging, they were neither for, nor against. Question 18 asked respondents whether microblogging by staff and students was supported during emergency response and recovery. The response was decisively different from all other responses in this category in the sense that most respondents neither agreed nor disagreed. A total of 21 respondents completed the question. Of that number, 4.76% strongly agreed and 4.76% somewhat agreed, while a significant 71.43% neither agreed nor disagreed and 19.05% strongly disagreed.
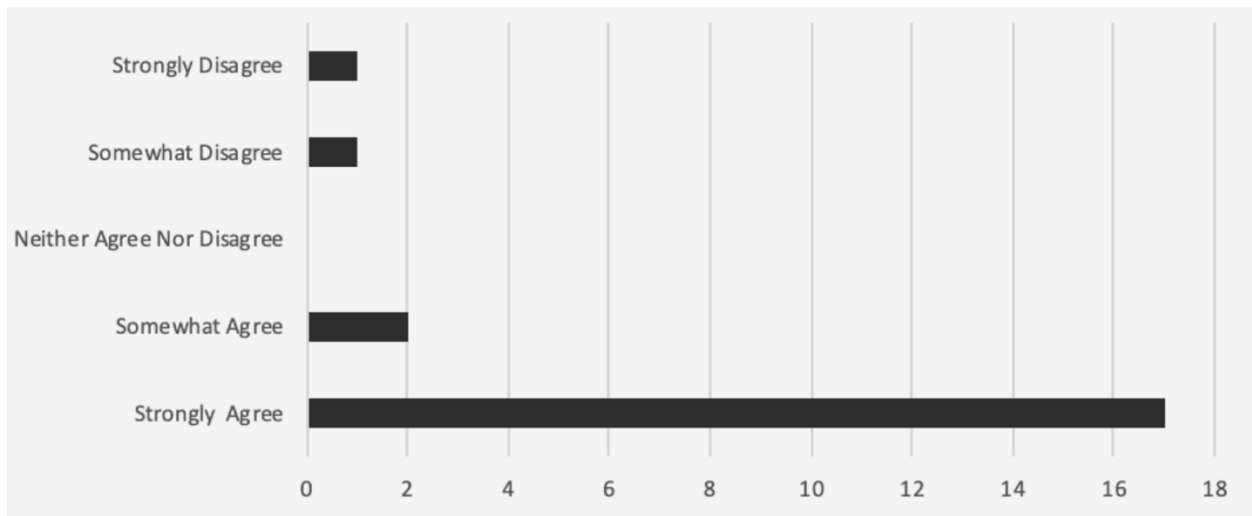
Figure 6. Perception of microblogging by staff and students.

Engagement is, however, not limited to the virtual environment. In this light, Question 6 explored if the leadership keeps stakeholders informed on crisis plan updates; the crisis plan being an indispensable tool of crisis response and recovery. Of the 20 respondents who answered

this question, seven respondents strongly agreed, and 10 respondents somewhat agreed that the leadership keeps stakeholders informed of changes in the crisis plan.

Besides the findings from the above online questionnaire, the document study also uncovered some evidence that corroborated and validated the theme with respect to the various technologies that the institution is using to reach students, faculty, staff, and parents. Thriving University's Crisis Communication plan spells out that students, faculty, staff, other external must be notified during an emergency. It further states that TU Alerts, the TU status page, the TU Blog, and social media must be dedicated to notifying and inform different audiences with different messages. The notification must include undergraduates, graduates, professional school students, staff, faculty, alumni, visitors, news media, international, state and federal officials, and the general public. The emergency notification system, TU Alerts, and the TU status page must also continue to blog and use social media to reach special need audiences. It also spells out that information disseminated to the public must be accurate and orderly. Furthermore, the document also specifies that official channels be used to reach the community, news media, Board of Visitors, and public officials.

The University's primary authority for reaching internal and external audiences, families, alumni, and friends of University is the University Relations department. In times of crisis, it works with the Crisis Communication Team and the Joint Information Center (JIC). It is also in charge of social, web, email, coordinating the gathering and dissemination, posting and publishing of content via mainstream channels and through social channels such as Snapchat, Facebook, Instagram, Twitter and more. It is worth noting that the University Relations operates 24/7 and it is staffed with specialists in areas such as media relations and community outreach, new media, and more.

As result of the degree of engagement between the institution and their internal and external stakeholders, the respondents have a greater degree of trust on the institution. Specifically, Question 10 asked participants to agree or disagree with this statement-stakeholders trust the readiness of the current crisis team to respond effectively during a crisis. Of the 21 participants who answered Question 7 strongly agreed with the assertion, 10 somewhat agreed, and 4 neither agreed nor disagreed. No one disagreed with the statement.

Theme 4: Technology adoption culture. Question 7 in the online questionnaire highlights management's inclination towards greater use and adoption of technology in emergency and crisis readiness. Of the 21 respondents that answered this question, 3 respondents strongly agreed, and five somewhat agreed with the assertion that the institution invests more on infrastructure than on staff and students. In isolation, this evidence is not strong enough; however, when this is juxtaposed and validated with findings from the interviews, a clearer picture emerges. There is abundant evidence from the interviews indicating that leaders adopt several technologies to stay abreast of issues (i.e., monitor, inform and alert, warn). The institution even goes as far as developing proprietary integrated notification systems that do not exist anywhere in the market just so they can to deepen stakeholder engagement. Participant 4 alluded to the fact that the University adopts a progressive mindset in technology adoption because, as he put it, "Our main demographic, the students, the 75% or more people that are our population are constantly changing, so they are most up to date with everything." For this reason, he went on to add, "We have to be progressive because our main demographic, the students, the 75% or more of people that are our population are constantly changing, so they're the most up to date with everything." Participant 3 said that Thriving University uses "Technology that gets information out to faculty staff, students." Another participant who spoke elaborately about

technology adoption culture at Thriving University was Participant 1. Participant 1 spoke of

Thriving University technology adoption culture in glowing terms.

> I think our use of technology continues to expand. For example, when I came into this
> position, the office had just been using that VEOCI system for maybe a year prior, maybe
> two years prior at the most. When I think about a year. And we have started using that for
> more and more things. So, we have a radio alum program. We use it for checking
> equipment in and out now. So, we have a radio alum program. We have radios here that
> student groups when they have an event on campus, they can check those out and use
> them during the event for safety. So, they can use them for their organizers to run the
> event. So, we check those in and out through the VEOCI system. So, the VEOCI system,
> it can be used in emergencies. We can use it for administrative stuff like that. So, we've
> been using it for that.

Table 7

Perception of Technology on Crisis Readiness

#	Answer	%	Count
1	Strongly agree	14.29	3
2	Somewhat agree	23.81	5
3	Neither agree nor disagree	33.33	7
4	Somewhat disagree	19.05	4
5	Strongly disagree	9.52	2
	Total	100	21

Another area of pervasive technology adoption is social media. Evidence of significant

social media adoption comes from both the online questionnaire and the interviews. With respect

to the questionnaire, Question 19 asked the respondents to agree or disagree with a statement that the institution uses a customized messaging app to reach out to stakeholders. The results overwhelmingly supported the fact that the institution uses customized messages to reach them. Of the total of 21 respondents, 17 agreed strongly that the institution does this, and 4 respondents somewhat agreed. Participant 3 confirmed that University Relations uses the following tools in stakeholder engagement: Facebook (mainly for parents), Twitter, and Instagram.

These add to other existing tools like VEOCI (a virtual emergency management system for planning and response), LiveSafe (a mobile application that connects students, staff, and faculty to emergency help when in need), TU Alerts (an emergency notification system to reach students, staff and faculty), and Class LED alerts (lights that display emergency notices during and emergency).

The evidence also suggests that a culture of crisis readiness is taking root through extensive use of technology, social media usage and monitoring. Overall, the researcher found very strong evidence from the three sources of inquiry that indicate numerous activities are underway to strengthen and deepen crisis readiness.
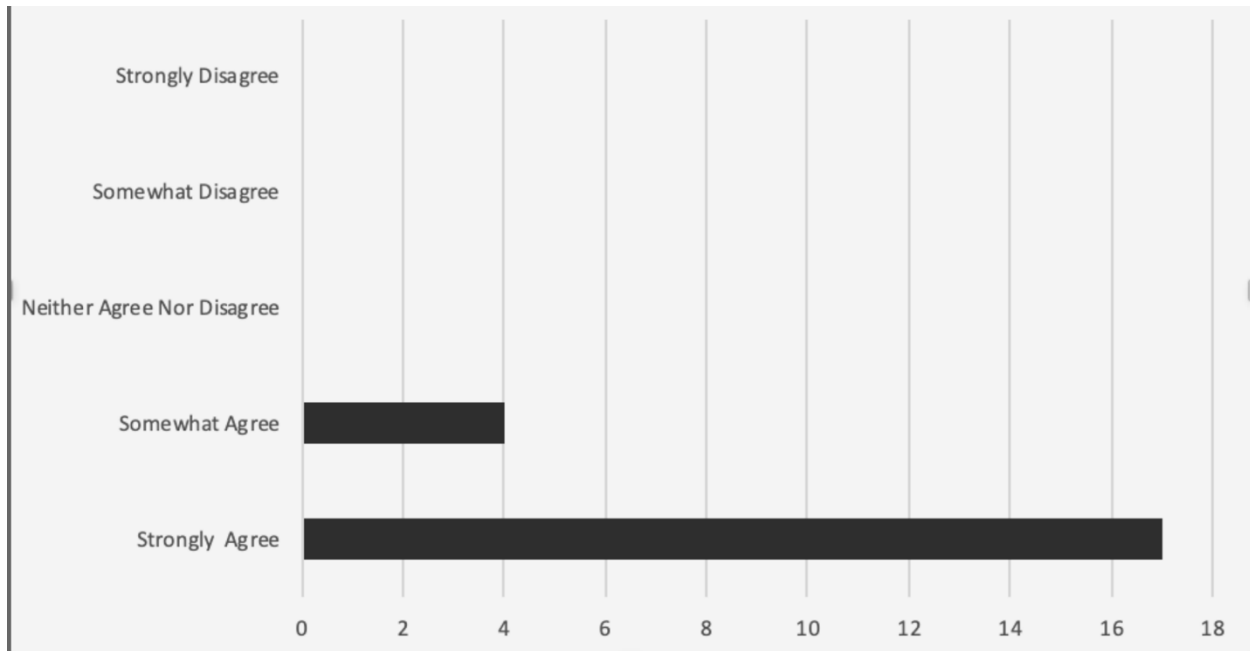
Figure 7. Perception on delivery of customized messages.

It is worth noting some ancillary findings that did not fall neatly into the frame of the above themes. These findings that the institution's authorities are taking steps to support activities that support crisis readiness. This was evident from the interviews, the online questionnaire, and the document analysis. Ancillary issues such as arming of educators with guns to deter gun violence offenders, and the inclusion of mental health counsellors in crisis planning did not take appear to directly link to the themes above. Those issues, nonetheless, are important elements of campus crisis readiness worth mentioning. For this reason, they are not discussed extensively above; however, they will be addressed in the next chapter.

Summary

In conclusion, there is ample evidence to suggest that the institution is significantly engaged with internal stakeholders in the process of crisis readiness. Evidence collected does not shed enough light on the extent to which the institution is engaged with external audiences. There is, however, abundant evidence from both the online questionnaire, the interviews, and

document analysis that support the theme relating to communication, leadership, and technology adoption in crisis readiness. Another angle from which to conclude is through the lens of codes is the foundational raw materials of study analysis.

Based on a juxtaposition of the *a priori* codes developed based on literature review prior to the field study and the 224 codes generated from the field study, it was found that communication is also at the center of the institution's emergency and crisis readiness efforts as it was also central to the literature review. Besides communication, the other subthemes such as engagement, community, media, planning and leadership roles emerged imminently from the cloud. Figure 8 shows a juxtaposition of a priori codes and codes generated from the study. Therefore, the figure demonstrates that the core themes, issues and concepts from the literature review were reflected in the study. It further validates the findings and conclusions of this study.

Figure 8. Juxtaposition of *a priori* codes and study codes.

Therefore, it can be concluded that thanks in part to a past focusing event, Thriving University has been engaged in many activities to raise its level of campus crisis readiness. In

this process, the institution has earned the confidence of its internal and external stakeholders. The evidence also suggests that a culture of crisis readiness is taking root through extensive use of technology, social media usage, and monitoring. Overall, the researcher found strong evidence from the three sources of inquiry that indicate numerous activities are underway to strengthen and deepen crisis readiness. The institution's leaders deserve credit; however, credit is also due to leaders of the local cities and municipalities and the population because the study reflected the fact that the institution enjoys a fruitful relationship of town-gown community, one in which there is social capital and strengthens the bonds of collaboration and cooperation in the event of a crisis. Based on comments from the participants, there is room for growth with respect to generation, deliberation, and implementation of debriefs or After-Action Reviews. In this area, there is a concern that senior leadership is slowly losing sight of the rear-view mirror which connects the institution to the past focusing event because the event has drifted farther back, resulting in a slow decrease (i.e., oversight) in attention and prioritization of readiness at the institution in recent years.

Chapter 5: Discussion and Conclusion

Without safety and security, schools and colleges cannot carry out their mandate of educating pupils and students. Therefore, safety is not just a matter of necessity; it is an existential requirement for the delivery of educational services. In an era of increasing gun violence across the United States, educational institutions are wrestling with this issue of restoring greater levels of safety and, above all, confidence to warry parents and students. School and college authorities are taking a variety of steps to prevent and mitigate potential incidents that could undermine the discharge of academic functions (Eklund, Meyer, & Bosworth, 2018; Gordon, 2015). Different institutions approach this issue very differently.

This study was designed to learn about crisis readiness at one institution of higher learning which has previously experienced a major crisis. The focus of this study was on the role of communication in crisis readiness. Communication permeates every aspect of crisis preparedness: leadership, stakeholder engagement, information sharing, vulnerability analysis, threat mitigation, preparedness, response, and recovery phases of emergency and post incident adjustments. In a college environment, communication before, during, and after a crisis comes with psychological, emotional, and behavioral implications that are unique to educational institutions (Thelen & Robinson, 2019).

Summarily, this study sought to explore the role of communication in crisis readiness at an institution of higher learning in the aftermath of a major crisis. In the aftermath of a previous crisis, Thriving University's (pseudonym) leadership implemented a Comprehensive Emergency Management Program (CEMP); that is, a strategic blueprint that identified and planned for emergencies based on realistic hazards. Over the course of three months, the researcher reviewed documents pertaining to the institution's emergency operations plan, the institution's website,

virtual posters, newspaper reports, and other assorted documents that deal with the issue of communication and crisis readiness on campus. The researcher also used in-person interviews and online questionnaires to uncover the perceptions of participants regarding the various, activities, and initiatives for emergencies and crisis readiness. Collectively, these three instruments of data collection unveiled in-depth knowledge of some unique emergency and crisis management practices and initiatives at the institution. The online questionnaire was distributed through the office of the director of emergency management to individuals such as facility or building emergency coordinators who had an understanding of issues regarding emergency readiness.

The researcher interviewed eight participants on four days in the months of January and February 2020. It is worth noting that prior to the start of the field data collection, the researcher conducted a pilot study with six participants who work or have worked in higher educations at an institution similar to the one under study. The pilot was a trial run or pretest on the practical aspects of the instruments and procedure (Lewis-Beck et al., 2004). Participants were chosen carefully to mirror the participants in the real study. The goal of the pilot study was also to test the ease of access and the duration of taking the online questionnaire. The pilot study lasted one month and was conducted virtually.

The outcome of the pilot study was helpful in that the participants offered suggestions for minor improvements. More importantly, they confirmed the online questionnaire participation duration. Based on the feedback from the six participants, some questions were slightly restructured while others were reordered sequentially to enhance the flow of the interview. Participants confirmed that the length of the online questionnaire took four to five minutes, inclusive of introductory IRB segment. The sections below examined the following issues

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relevant to this study: (a) summary of results, (b) discussion of the results, (c) discussion of the results in to the literature, (d) limitations, (e) implications of the results for practice, policy and theory, (f) recommendations for further research, and (g) conclusion.

Summary of Results

This study was designed and conducted as a case study because case study methodology is more suitable for the study of real-world phenomena in a natural setting. A case study also lends itself to the generation of deep, rich, and descriptive data that informs a broad understanding of social reality interpreted through the minds of those who possess the awareness and knowledge of the situation (Hammersley et al., 2009; Yin, 2017). The case study method of research is rooted in non-positivism, because knowledge is personally experienced rather than imposed from outside (Ryan, 2015) . It goes without saying that this approach presents the possibility of suggesting a theoretical relevance that advances new concepts (Mills et al., 2010). Moreover, a case study also offers tools for the study of complex phenomena. Therefore, the case study approach facilitated the process of analysis, reflection, and interpretation of essential themes that emerged from this study.

The researcher derived the findings in this section from three sources of evidence collection: anonymous online questionnaire, in-person interviews; and document reviews and analysis. The interviews were based on 18 semistructured questions that served as the primary vessel of transmission and interpretation this study (see Appendix B). Given the fact that the interviews were semistructured, this allowed the researcher to ask to follow-up questions that sought further clarification of any ambiguity issues. The online questionnaire helped to validate some claims that emerged from interviews as well as generate quantifiable data based on a five-

point Likert scale. The online questionnaire questions were designed on Qualtrics, a web-based survey tool ideal for data collection, analysis, and presentation.

Participants answered 20 Likert-scale questions about crisis preparedness at their institution. In addition to the interviews and online questionnaire, the researcher also used document reviews to corroborate data generated from the interviews. Out of that process and subsequent analysis, four themes emerged. These themes are communication influences credibility and trustworthiness, supportive leadership facilitates partnerships, culture of engagement and monitoring, and technology adoption culture. Analysis was based on a process called *content analysis*; that is, a systematic, objective analysis of message characteristics by either human or computer-aided text analysis (Neuendorf, 2017).

At the start of the study, the researcher approached the institution under study to express interest and the purpose of the study. When the institution expressed interest, the researcher approached obtained Concordia University Institutional Review Board permission. Following the approval of the study, the researcher began a document analysis of items such as newspaper reports, published emergency preparedness documents like emergency operations plans, public notices, virtual and non-virtual posters, the emergency operations plan, and the communication plan. In addition to document analysis, the researcher also used an anonymous online questionnaire to gain an unfiltered understanding of participants' perceptions of crisis leadership, communication and stakeholder engagement, and the information sharing of all activities relating to emergency and crisis readiness. A total of 21 staff of the emergency management department participated in the study. Other participants were from the police department, the school of veterinary medicine, and the global emergency planning department.

The online questionnaire segment was designed on Qualtrics, an online survey tool used in building, distributing, and analyzing survey responses from one convenient online location. Individuals who completed the questionnaire could opt for the in-person interviews at locations of the interviewee's choice. The eight participants were interviewed on four separate days in the months of January and February 2020 on the campus of Thriving University. During the first series of interviews, four interviewees were interviewed on two separate days. During the subsequent second series, four interviews were also conducted on two days on campus in the month of February. Each of these interviews were based on participant interest in line with Concordia University's IRB guidelines.

The researcher interviewed participants who held the following positions: emergency management coordinator, emergency management logistics specialist, emergency administrative assistant, emergency planner, emergency director, assistant emergency director, building emergency coordinator, and emergency first responder. Interview questions were designed to obtain their perspectives on communication, crisis leadership, and crisis readiness with respect to emergency planning, response, and recovery in the context of a campus emergency.
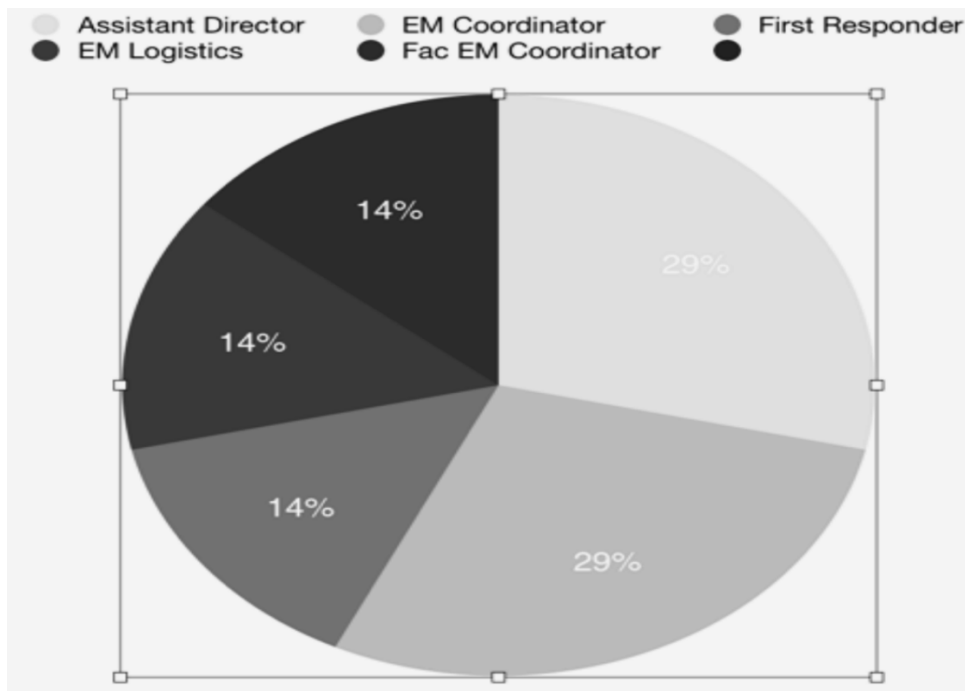
Figure 9. Pie chart showing functional roles of participants.

Each interview was recorded with a digital audio-recorder and later transferred onto a

password-protected laptop accessible only by the researcher. After a word-by-word transcription,

the researcher deleted the audio files from the computer and sent the transcript of each interview

to the interviewee for verification of their accuracy within a period of a week. After reviewing all

of the documents and completing the manual transcription of all the interviews, the researcher

analyzed the data for codes (labels attached to phrases or lines of text under analysis) that denote

important issues that emerged from the data collected. A total of 224 codes were generated from

all of the interviews. Next, the researcher categorized the codes; this revealed a total of eight

categories. A further interpretation, permutation, and interrelation of the categories revealed four

themes or topics that highlighted the focal priorities of a study (Vaughn & Turner, 2016). The

themes that emanated from the analysis were communication influences credibility and

trustworthiness, supportive leadership facilitates partnerships, culture of engagement and

monitoring, and technology adoption culture. The research questions below, guided the process of the data collection in this case study.

      RQ. What is the role of communication in crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?

      SQ$_1$. How does leadership influence crisis-readiness and response on the campus of an institution of higher learning in the aftermath of a major crisis?

      SQ$_2$. How does information sharing impact crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis?

      The sample size in the online questionnaire was 21 respondents, while in the in-person interview it was eight professionals with ages ranging from 30 to 70. Of the eight, 50% were men and 50% women. All the participants work at Thriving University, a land grant research institution of higher learning within the Northeast region of the United States. Duration of employment at the university ranged from 2 years to 25 years.

Discussion of Results

      The answers captured from the interviews were the perceptions of respondents. After analyzing the eight recorded interviews, there were 224 codes from a line-by-line content analysis. After a further analysis and interpretation of interconnections, eight categories emerged: communication is key component of information credibility, communication enhances crisis readiness buy-in and implementation, supportive leadership in crisis readiness, leadership effectiveness spans 180-degree view, high efforts towards community partnerships, real-time monitoring and use of social media in outreach, iterative incident debriefs to improve training and preparedness, and entrenched adoption of new technologies to support crisis readiness. A

closer examination of the interrelationships, interconnections, and permutations of the eight

categories yielded four themes:

- Communication influences credibility and trustworthiness.

- Supportive leadership facilitates partnerships.

- Culture of engagement and monitoring.

- Technology adoption.

Therefore, the interviews established a foundation upon which the codes were derived

and subsequently the categories and themes; all of this preceded the process of corroborating the

evidence from the interviews with the evidence from the online questionnaire and the document

analysis. Although these themes are related to the research questions, the questions did not

determine the themes, they emerged from a reflective and rigorous process of content analysis

that started with the line by line coding (Neuendorf, 2017; Woo & Heo, 2013). Given the fact

that each method of data collection was different and independent of the other, this enabled the

researcher to validate the themes that emerged from interviews. Figure 10 is an overview of the

themes established by combining different perspectives from participants; this process

strengthens validity of the study (Creswell, 2014).

Figure 10. Overview of four study themes.

Communication Influences Credibility and Trustworthiness

This theme was of focal importance in answering the main research question, which is: What is the role of communication in crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis? Findings from participant interviews provided insight and evidence that supports this theme. A number of participants alluded to the existential importance of communication in the process of informing, influencing, and persuading internal and external stakeholders to embrace the message of emergency and crisis readiness. The emergency management department revealed that it works with a communication intern who is a student on staff. The role of the student is to help the department to better target messages that go out to the students. This ensures that the messages are fine-tuned to the kinds of slangs and jargon that are student friendly. The goal of employing the students is to have a greater degree of message-alignment with students who are predominantly younger than the adults working in the emergency management office.

Besides the in-person interviews, the online questionnaires also revealed important findings relating to the role of communication in reaching different stakeholders. A decent 15 of

21 respondents had confidence in the way the institution's leaders communicated with stakeholders. Of that high score, over 8 of them agreed strongly that institutional leaders are communicating effectively with stakeholders via multiple channels.

Supportive Leadership Facilitates Partnerships

The second research question sought to understand the role of leaders in emergency and crisis readiness. Evidence from the in-person interviews and online questionnaire revealed that the leadership at Thriving University is very supportive of the mission of emergency and crisis readiness, especially in light of the previous major disaster that the institution faced. After the major incident the mission of emergency management has been threefold: individual preparedness, departmental readiness, and university resiliency. Overall, the participants acknowledged that the institution's leadership and the leaders of the neighboring cities and county have been very supportive of the activities of public safety department and its constituent departments, that is the police department and the emergency management department.

The harmonious relationships between the university authorities and the leaders of the local community have spun various types of collaborations and mutual aid partnerships relating to sharing or exchange of emergency resources like police, fire, and so on. An unexpected finding was the fact that Thriving University is located within what is known as a "town-gown" community. One of the participants pointed out the fact that town-gown communities tend to have stronger social ties that serve as a healthy foundation for collaborative partnerships and insulation from devastating crisis setbacks.

The emergence of the theme supportive leadership facilitates partnership enabled us to answer Subquestion 1 (SQ$_1$): How does leadership influence crisis-readiness and response on the campus of an institution of higher learning in the aftermath of a major crisis? Conceptually, this

theme addressed the issue of leadership within the context of college campus community. Based on evidence from the anonymous online questionnaire, over 14 respondents strongly agreed that past crisis experiences motivated the institution's leaders to be more crisis aware and crisis ready. One respondent disagreed with the statement, the evidence is overwhelming majority of respondents believe that current leadership is supportive of the mission and vision of crisis readiness at the individual, departmental, and university levels.

Culture of Engagement and Monitoring

Throughout the interviews, student engagement was a recurring theme. Research Question 3 investigated how authorities reached out to internal and external stakeholders. It was revealed that authorities engaged with students starting at the new student orientation sessions. In the subsequent months after orientation, the emergency management department schedules different types of student activities throughout the year either directly or in collaboration with partners such as the police department, halls of residence, and more. With respect to initial new student orientation, the emergency management department receives between 30 minutes to one hour to talk about public safety on campus.

Some of the activities that authorities have used to engage and educate students regarding emergency readiness are homecoming, health fares, sport events, class presentations, and many other special events. One of the participants referred collectively to these events as "tabling-events" because at such events, they set up a table outside and engage directly with the students. Besides interacting with students and sharing information, they also hand out events, emergency management mementos, giveaways, flyers, and handouts that promote individual and collective on campus crisis-readiness activities.

In addition to ongoing stakeholder engagement by the emergency management department, University Relations, the public relations arm of the university also engages with students extensively through social media team both to disseminate information, interact and monitor social media via student platforms such as Twitter, Facebook, and Instagram. They tend to use Facebook to engage with parents because students have generally boycotted Facebook. More importantly the study found that the institution monitored social media 24/7. This was to ensure that authorities are able to have an early handle on any breaking news issues or incidents that could have a devastating impact on campus safety and security.

Besides the interviews, further evidence from the online questionnaire indicated that 15 respondents of 21 agreed that stakeholders such as students are engaged yearly in crisis readiness activities. These findings further validated research Subquestion 2 (SQ$_2$), which focused on how information sharing impacted crisis-readiness and response on the a campus an institution of higher learning in the aftermath of a major crisis. Based on the above findings, it can therefore be deduced that the outreach efforts shed light on the issues of information sharing and stakeholder engagement.

Technology Adoption Culture

Technology adoption emerged as a theme based on the depth and breadth of technology usage in crisis readiness. Most of the participants talked about many different tools and applications that support effective crisis readiness. Fundamentally, the institution uses technology as a tool or a means to an end, and not an end in itself. In other words, the institution has adopted the use several technologies to convey and deliver crisis readiness messages in a shape of form that is not alien to the students. Their portfolio of emergency technology products includes notification applications, incident management or virtual collaboration platforms that

ease the capturing and sharing of emergency information in real time. In order to deepen the

usage and familiarity of these applications, some of the applications are used during emergency

exercises, managing on campus events such as football games, homecoming, and in delivering

important news. During emergencies, the applications and platforms are increased to deliver

critical information about safety and security on campus. For instance, the institution uses TU

Alerts to deliver to regularly keeping students, staff, and faculty informed on some important

information. This ensures that during an emergency student, staff, faculty are familiar and

comfortable with the source of the message. This enhances familiarity, credibility, and, of

course, usability. In the year following a major emergency, the institution has taken a pioneering

role in developing and implementing a comprehensive proprietary alert system has been copied

by other institutions of higher learning.

Besides technologies for alerting students, staff, and faculty inside and outside the

classrooms during an emergency, the institution has also invested a virtual emergency operations

management system such as VEOCI which helps with collaboration, continuity, response, and

recovery. Besides using it for emergency exercises, authorities have also used it in some daily

collaborative activities to boost its adoption and entrenchment. During times of no emergency,

the system has been used in critical resource allocation and management as well as event

management. During an emergency, its use is expanded to include many aspects of emergency

management such as remote collaboration, intelligence gathering through the use of 911

emergency calls, and many more functions. Essentially, the evolving use of technology is aimed

at keeping decision makers abreast of an unfolding emergency without compromising their

willingness to share resources and intelligence. It has been used to manage on-campus events

such as football games with over 65,000 people in attendance. Such familiarity ensures that during an emergency, users are comfortable using the system without any downtime.

These findings validated research Subquestion 2 (SQ$_2$), how does information sharing impact crisis-readiness within a campus of an institution of higher learning in the aftermath of a major crisis. Based on these findings, crisis readiness systems such as TU Alerts, VEOCI, Live Safe App, and others have proven that a new culture of leveraging technology is taking root at Thriving University. By using these tools and systems extensively, authorities have succeeded in embedding technology in crisis every readiness scenarios, authorities have succeeded to some extent in using otherwise strange technologies in facilitating, negotiating and mediating a way of life for students, staff, and faculty members with emergency management roles and responsibilities.

Discussion of the Results in Relation to the Literature

This section examines and discusses the study's findings relation to the theoretical propositions that served as attributes of guidepost in the design of study, data collection and data analysis. The theoretical propositions below originate from the literature review. Here are the theoretical propositions discussed in relation to the themes of this study:

- Effective communication can make or break an institution's crisis readiness.

- Focusing events have the potential to be wakeup calls for leadership of institutions.

- Information-sharing strengthens community capital.

- Debriefs and after-action reviews are essential in learning and readiness.

- There are multiple layers of institutional learning in the aftermath of a crisis.

- Emergency planning and plan updating are essential to crisis readiness.

Furthermore, this section will also identify areas where findings concur or contradict with the theoretical propositions outlined above, based on the literature review in Chapter 2. It also discusses similarities, differences between the findings on one hand and the literature on the other.

Conceptually, the purpose of this case study was to examine the role of communication in crisis-readiness within a campus in the aftermath of a major crisis. Therefore, the unwritten subtext of the study was to better understand how leaders facilitate the process of adaptation especially in the aftermath of a major campus crisis incident that has served a focusing incident. A proposition is similar to a statement that is similar to a hypothesis. The purpose of a proposition overall and as in this project is to suggest the existence of link between concepts, however the link is not necessarily verifiable. Propositions are not fabricated; they come from prior literature and are used to make reasonable assumptions or informed guesses about the outcome of a research question or study (Mills et al., 2010) Once the research findings are uncovered, they are compared with the propositions to see or test if the informed guesses are true or false. It is worth noting that not all propositions and themes concur, as shown in Figure 11, an overview proposition and theme intersections, there are instances of contradiction or inaccurate permutation.

Theme	Proposition	Intersection	Disconnection
Communication Influences Credibility and Trustworthiness	Communication Can make or Break	Virtual connections Tabling Events Drills & Exercises	Disengaged Students Disengaged Faculty Part-Time Faculty
Supportive Leadership Facilitates Partnerships	Focusing Events are Wakeup Calls for Leaders	Single & Double Loop Learning Town-gown Community	Rear View Mirror Effect as Focusing Event Disappears
Culture of Engagement & Monitoring	Information Sharing is Bedrock of Community Capital	24/7 Monitoring by University Relations on Social Media	Unaffiliated, Socially Adrift and Socially Distant Stakeholders
Technology Adoption Culture	Debriefs Are Essential to Institutional Learning and Readiness	Extensive Use of Mobile Applications, Social Media and Several E-Tools	Exclusive and Inconclusive Debriefs and AARs

Figure 11. Proposition interconnections with findings.

Theoretical Proposition 1: Effective communication can make or break in crisis response. Theoretical proposition that states "effective communication can make break in a crisis response" appears to be validated smoothly with the first theme of this study, "communication influences credibility and trustworthiness." This is a fitting concurrence of both the proposition and the finding in the sense that contextually but agree on the prime position of communication in readiness and response. Communication, the literature revealed, has been found to promote better performance (Ellis et al., 2006; Moore, 2018). Furthermore, both the findings and propositions also agree that mainstream media has enjoyed greater credibility; however, social media has grown in significance and has better and faster ways of disseminating information during a crisis (Egnoto et al., 2016). Moreover, greater public engagement yields communication capital, that is, *the* symbolic activities that impact civic engagement, including all forms of communication that facilitate social problem-solving with a community (Jeffres et al., 2013). Based on the findings from Thriving University, there is enough evidence to support both the first theme and theoretical proposition one.

The first finding revealed that communication facilitates credibility and trustworthiness. Based on the perceptions of the interviewees, online questionnaire respondents, and the document analysis, it came to light that the emergency management department as well as University Relations take an active role in communicating with students, staff, and faculty frequently through in-person and virtual meetings. In order to better manage the quality of messages sent out to students who are much younger than all emergency management department, the department regularly works with a student, a communication major student who helps the department in shaping and fine-tuning messages that go out to students. This demonstrates that the authorities know the power of communication and do not wish to undertake this arbitrarily, but rather have some insight from someone who is from the target audience so as to improve messages are alignment. The anonymous online questionnaire further supported proposition and theme; it revealed that 15 of 21 respondents had confidence in the way the institution's leaders communicated with stakeholders. The establishment of trusting relationships between emergency authorities and all students has proven essential in successfully resolving school hostage and barricade events (Daniels et al., 2007).

To some extent, this revelation vindicated the institution of some of the bad press on poor communication that the institution's authorities received in in the immediate aftermath of the major disaster. For instance, one researcher referred to the institution in the time prior to the major incident as having entrenched poor communication (Dillon, 2016). It can therefore be argued that the institution's leaders have made a 180-degree turn to leverage the power of communication in campus crisis readiness based on the evidence from the online questionnaire, the in-person interviews and the document reviews.

In summary, when there is effective communication, there is greater trust that ensues from a common understanding between the parties in a discourse or dialectical situation. By the same token, Jeffres et al. (2013) advocated that greater public engagement yields communication capital, that is symbolic activities that impact civic engagement, including all forms of communication that facilitate social problem solving with a community.

Theoretical Proposition 2: Focusing events serve as wakeup calls for leaders. There are two areas in which second proposition states, "Focusing events serve as wakeup calls for leaders" and second theme is "Supportive leadership facilitates partnerships," are in congruence or intersection and there is one way in which there is a disconnect. With respect to intersection Thriving University's leadership have taken the metaphorical wakeup call alluded in the literature review as a focusing event and there is also evidence of having learned some lessons, that ties in well with literature and the second proposition. On the contrary, there is also evidence that over time, there might be organizational forgetting.

Based on the literature review, Dahl (2010) argued that events sometimes serve as a focus because they remind decision-makers to be more receptive to intelligence and intelligence collection. Yet, there is another way in which the findings agree with the proposition; both agree that schools need to make strides in crisis prevention by adopting continuous planning and information sharing with stakeholders (Topadzhikyan, 2013). It can therefore be argued that the essence of leadership taking the wakeup call is to move toward the establishment of trusting relationships between school authorities and students, as recommended by Daniels et al. (2007), in a bid to building bridges of understanding a collaboration in areas such as crisis readiness and beyond.

With respect to the findings from the interviews, Participant 2 pointed out that the mission of emergency management department was revised and simplified after the major crisis to be individual preparedness, departmental readiness and university resiliency. Another participant, Participant 7 alluded to the fact that the institution enjoys a supportive to work environment with cross-departmental collaborations that are supported by leadership. In essence, the institution's leadership and the entire community has been very supportive of the public safety department which comprises the police department and the emergency management department. This finding is supported by literature review.

There is further evidence of congruence of Proposition 2 and Theme 2 as indicated in the figure above. In other words, has the leadership taken the wakeup call or not? Here, evidence from Participant 6 pointed to the implementation of electronic classroom emergency notification LED lights after the major disaster. These LED lights were not there prior to the major event; this is evidence of a single-loop lesson solution. Though not as important as double-loop learning, single-loop learning is just as important in correcting past mistakes and errors (Deverell, 2009). Beyond single-loop lessons from the major incident that served as a wake-up call, there was also evidence of double-loop learning at organizational learning. This was evident from interview with Participants 1 and 4. Both talked about the use of VEOCI system, an online incident management system in daily activities. Participant 4 in particular indicated that by having staff and students use the system frequently, it is not alien for them to use during a disaster because then there is enough of familiarity and trust. This element of embedding activities into daily norms and practices at a deeper level is an aspect of double-loop learning.

It would be unfair to only give entire credit only to the institution's leaders without acknowledging the constructive and collaborative contributions of the leaders of the local

communities that surround the institution; that is, the city and county leaders. The study reflected how the institution benefits from its location in a hospitable town-gown community with friendly and supportive local leadership and population. Even though the community enjoys a healthy town-gown relationship, internally the institution has room to improve in the area inclusivity in the running of debriefs and after-action reviews. Two participants perceived that their input is neither sought, nor recognized in this area where they have an on-the-ground mastery of issues. This approach is not in accord with the literature review, which advocates for effective after-action reviews (AAR) that focus on both failure and successes (Ellis & Davidi, 2005; Lawler & Sillitoe, 2013). Therefore, if this process is not inclusive of level staff, how would effective learning and reflection occur to inform future planning and response at all levels? In a similar situation, other participants also observed that the further behind the focusing event dwindles from senior leadership's rearview mirror, the less attention they extend to crisis management. In other words, the farther away from the crisis, the more crisis readiness diminishes from their focal agenda, which relates to what organizational forgetting in literature review (Broekema et al., 2017).

Thus in summary, Theoretical Proposition 2 intersects with Theme 2 in the area of leadership taking the wakeup call from a focusing event and implementing a Comprehensive Emergency Management Programs (CEMP) based on the all-hazards approach. These changes spurred and bolstered a new era of positive recognition both from the staff interviewed and from beyond. There is also evidence that the leaders have gone one step further in embracing single-loop lessons from the past major crisis. Where they have distinguished their institution from many is in the area of embracing double-learning that embraces that questions underlying assumptions, organizational norms, beliefs, processes and ways of life (culture) in areas of

student engagement and persistent use of technology. These accomplishments notwithstanding, the two participants pointed to one grey area of oversight: organizational forgetting, whereby the leaders are slowly forgetting about the wakeup call or the focusing event that served as a springboard to greater readiness as the issue becomes distant in the rearview mirror of leadership.

Theoretical Proposition 3: Information-sharing strengthens community capital.

Theoretical Proposition 3 tallies well with Theme 3 on culture of engagement and monitoring. This finding matches with expected findings as captured in Proposition 3. Based on insight from a number of participants, Thriving University regularly reaches out to students, staff, and faculty through a variety of online and offline activities. This process often starts with student orientation but continues throughout the year to explain the importance of public safety on campus. The institution engages with students via events such as homecoming, health fairs, sport events, and class presentations. Through such events, the emergency department interacts with students, distributes informational flyers, hands out giveaways, and promotes what Participant 3 referred to the use of LiveSafe (i.e., a mobile application that staff and student can use to get help from police if they are in danger or need directions to some location or building on campus). Information sharing might be seen as trivial, but strengthens the bonds of trust, and trust is an important ingredient of social capital (Andrews & Wankhade, 2015; Broekema et al., 2017; Procopio & Procopio, 2007; Rivera & Nickels, 2014).

Furthermore, the University Relations department, the public relations arm of the university, uses a staff of six to manage and monitor social media via Twitter, Facebook, and Instagram around the clock, both for engagement and for monitoring the cyberspace in case of any incidents involving students. The monitoring of social media ensures that authorities are able

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to pick up early signals of distressing issues and handle them before they grow out of control. Monitoring of the social atmosphere is one area of congruence between the literature review and the findings. Without monitoring, incipient incidents can be undetected. With monitoring and engagement, the reverse is true. In over half of the incidents studied there was a prior threat of some kind, or a journal entry to classmates or peers (Fritzon & Brun, 2005).

Another area where evidence from the findings illustrates that the institution engages extensively with students, staff, and faculty via tools such as emergency alerts, virtual incident management systems such as VEOCI and Live Safe App, as well as a host of others. Both also acknowledge the growing role of social media in crisis readiness. Whether it is online of offline engagement, both yield similar rewards. Ormond et al. (2018) argued that that a community's ability to cope with a disaster depends on its endowment of social and economic resources, collectively known as *community capital*.

Literature review provided a wealth of information on the power of social capital, an invaluable asset in emergency and crisis readiness and response. This was grounded in the fact that institutions that frequently engage with students, staff, and faculty are able to pick up early signals of distress. Modzeleski and Randazzo (2018) argued that it is possible to prevent school shootings by looking at a person's behavior and/or communications. In a sense, frequent engagement lends itself to greater opportunity to listen and observe hints of dangerous, violent behavior.

In as much as there has been congruence, there is also a significant area of disconnect with respect to the proposition and the findings. Though the institution has made progress in outreach, there remains a portion of students, faculty who are socially adrift, socially distant, and unreachable via technology. Though the registration for some of the mobile apps is high, they

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have not reached full subscriptions. Therefore, there is more work to be done because there are students, staff, or faculty who are still unreachable and could be in harm's way during an emergency.

In summary, Proposition 3 and Theme 3 have both congruence in the area of stakeholder engagement as well as information sharing online and offline, and yet there is still a disconnect in that they are unreachable, socially detached, and part of a distant cluster. This is may well be their Achilles heel.

Theoretical Proposition 4: Debriefs are essential to institutional learning and readiness. The fourth theoretical proposition does not quite tally with the fourth theme. On one hand, the literature heralds debriefs as important to organizational learning (Broekema et al., 2017; Nickerson & Brock, 2011). On the other hand, the findings do not affirm the effectiveness of debriefs and after-action reviews, whereas theoretical propositions are clear on the role of debriefs, some participants felt that debriefs are not inclusive. Besides, the lessons are sometimes compartmentalized and not shared as openly as possible.

The fourth finding revealed that Thriving University has a robust technology adoption culture that is geared at boosting crisis readiness. The institution uses a wide variety of technology tools, social media, and various other e-tools which promote safety and security on campus.

One area of intersection between the proposition and the finding is the area of learning. As highlighted above in Proposition 2, the leadership and the institution have been committed to learning and growing. There is aforementioned evidence that speaks to the following issues: the conception and implementation of an all-hazard Comprehensive Emergency Management Program, the collaboration with a communication major student intern who helps department in

framing messages, the extensive use of social media and mobile applications and virtual incident management systems such as VEOCI, and more. Some of these lessons above are single-loop lessons while others are double-loop-based lessons. As such, Thriving University has invested significantly in building proprietary incident notification systems that are building new norms, practices that undergird emergency, and crisis readiness.

Unanticipated Findings: Limitations, Challenges, and Evaluation

This section addresses elements of findings that were not covered by the theoretical propositions. The theoretical proposition that does not quite align with findings is the issue of debriefs and after-action reviews which have been discussed above in multiple segments. There is evidence that debriefs do happen; however, there they are inclusive, and the lessons learned well communicated. Debriefings are probably the most challenging aspect of the crisis response process in school crises (Crepeau-Hobson et al., 2012). In this light, the literature concurs the real-world difficulty of having effective debriefs.

The literature indicated that in over half of the incidents they studied, there was a prior threat of some kind, or a journal entry to classmates or peers (Fritzon & Brun, 2005). This underwrites the importance of effective debrief. Therefore, if debriefs are haphazard, vital telltale signs and intelligence may get lost. Another area where the evidence is not conclusive is the area of emergency plan updating. Dillon (2016) also observed that 70% of plans surveyed required significant upgrades.

Limitations of Study

The researcher chose this topic of study because of a past professional affiliation and interest in the area of public safety and security. Therefore, without doubt, the researcher inherently brought in some bias into the subject. To offset the limitation of researcher bias, the

researcher used two methods outlined in the study methodology. First, the researcher used member checking by allowing the interviewees to read through the line-by-line transcriptions of the interviews to ensure that the information was captured accurately. Secondly, the researcher also used triangulation by validating the claims from more than one source of inquiry.

Secondly, the sample size of eight in the interviews and 21 in the online questionnaire is limited. A larger sample would have been better; however, this was beyond the reach of the researcher who had to work through a generous proxy. To delimit this limitation, the research reached saturation in the data collection. Saturation was reached in three areas: leadership facilitates partnerships, culture of engagement and monitoring, and technology adoption culture.

Summary of Findings

The findings from this case study, based on the four themes generated from data analysis, are significantly in congruence with the theoretical propositions (i.e., expected findings based on literature review). Above all, the findings also shed light on the main research question and the subquestions. To a large extent, the themes sufficiently answered the research questions. Similarly, the findings also helped the researcher to discover through the perspectives of the participants and respondents the budding culture of campus crisis resilience that exists at Thriving University. This was determined through four of the six theoretical propositions outlined above being in congruence, and two of the six propositions being in contradiction or not having sufficient intersection. Overall, there were far more areas of interconnections between the theoretical propositions and findings than there were disconnections, hence the raison d'etre of this conclusion. The areas with strong interconnections were communication, leadership, and stakeholder engagement. One area without strong interconnections was the use of effective debriefs and after-action reviews.

Implications of the Results for Practice, Policy, and Theory

Given the evolving nature of violence in schools and colleges and the fact that institutions of learning have to beef up their crisis readiness practices, institutions have an obligation to balance readiness with prudence. As identified in the previous chapter, some school drills and lockdowns have been overused. In this process, these drills and lockdowns have yielded unintended and undesirable social and emotional consequences on the students. In some cases, teachers and students were left bruised, bleeding, or frightened after active shooter drills involving teachers. Such unintended consequences have prompted the need for school psychologists to be involved in the planning and implementation of active shooter drills in schools (Erbacher & Poland, 2019). It also means that emergency management authorities are responsible to their students to plan realistic exercises that do not leave them too emotionally traumatized to effectively engage with their studies.

Therefore, there is a renewed need for the inclusion of school or college psychologists and other stakeholders in the planning and execution of preparedness programs so as to manage the undesirable fall outs of exercises and drills (Erbacher & Poland, 2019; Schlanger, 2018). Alternatively, emergency management professionals who plan and implement readiness programs have a duty to pay greater attention to issues relating to the psychological and emotional wellbeing of the students, parents, staff, and faculty. In other words, authorities cannot afford to overlook psychological preparedness as it is part of the whole person concept that embodies psychological, emotional, social, spiritual, and physical oneness.

Based on interviews, it appears that practitioners tend to put the cart before the horse. In an attempt to persuade new and younger students, it appears authorities may be using dated persuasion techniques and strategies to engage and persuade students today. In some ways, this is

not working because, information consumption and persuasion are more collaborative, participative, and less directive. Along this line of thought, a new body of research from neuroscience and neuroeconomics indicates that trust and empathy are at the center of persuasion (Zak, 2011). It would appear the persistent and ubiquitous use of PowerPoint presentations in student orientations and several other forms of directive communication do not sufficiently engage some Generation Z who are currently in the school system. The Generation Z are considered socially conscious, tech-savvy, and enjoy change. They also cherish being connected via smartphones, internet, tablets; and tend to be averse to violence and adult content (Chaney et al., 2017). Unfortunately, in today's schools and colleges, there is information overload. There are also uncountable distractions that compound the problem of reaching as many students as possible with the message of crisis readiness. In order to engage and gain buy-in from some of those unreachable individuals, authorities must find using alternative subterranean tools and techniques that ignite student interest such as the use of gamification or the use of dramatic narratives from other students who have survived previous crises to captivate highly distracted younger students. The process of learning from a crisis comes with stories, emotions, and symbols that play a key role helping people make sense of the world (Broekema et al., 2017).

Implications for Crisis Leaders

The findings from this study highlighted the importance of developing town-gown relationships within school or college community (Filinson & Raimondo, 2019; Mosier, 2015). The beauty of such a community is that it insulates the institution from the severe storms of destruction that come with emergency or crisis. Besides insulation, they also help with a quicker and stronger response and recovery effort, thanks to the abundance of social, political, and economic capital (Ormond et al., 2018; Procopio & Procopio, 2007). Some institutions are more

fortunate than others by virtue of their geographic location and the prevailing geopolitics of place. Beyond that, luck and fortune can only go so far. Much depends on the crisis leadership. The greater part of success will not depend on luck, but on careful nurturing of social and political capital (Broekema et al., 2017). This requires leadership to take a proactive approach to strategic issues facing the community. In other words, building town-gown relationships that foster growth and collaboration because these invisible assets are not guaranteed. They must be harnessed and sustained. When nurtured, the relationships have the potential to unlock political, economic, social, and spiritual assets in the community. Therefore, in the event of a crisis, the leaders are able to leverage the hidden benefits of the bridging social capital to respond and recover stronger. A community's ability to cope with a disaster depends on its endowment of social and economic resources, collectively known as community capital (Ormond et al., 2018).

The final idea for crisis leaders is to make use of black-box thinking, a mindset for getting to the bottom of an issue to identify the root causes so that the issue can be resolved just like in the aviation industry (Syed, 2018). Black-box thinking is a form of thought leadership that seeks to identify failure and near misses so as to analyze and find areas of improvement without laying blame. It also means establishing a deliberate culture of double-loop learning in the area of emergency and crisis management. Institution leaders owe it to the success of their institutions to learn from industries that have embraced black box thinking and the growth mindset in learning from past mistakes. With this approach, they can leverage the power of black-box introspection in conducting 360 degree debriefs and after-action reviews that encourage open, reflective, and blame-free reviews after near-miss incidents. When this type of introspection is done at all levels, it ensures that the lessons learned are not only captured but shared with

everyone to ensure that individuals at all levels get to learn from the mistakes of others in a bias-free environment.

Overall, there are two main types of community learning that occur after disaster. Small-loop learning results in incremental, adaptive or experimental changes, whereas large-loop learning communities embrace results that have paradigm shifts (Preston et al., 2015). Similarly, there are three types of community learning in a disaster: navigation, organization, or reframing.

Recommendations for Future Research

One area where the findings of this study can help of educational institution policy makers is provide guidelines on how to develop and sustain town-gown relationships that provide a greater level of sociopolitical capital insulation from sudden emergencies and crisis. Thriving University's success in this area provides an inspiring anecdotal tale for other institutions on how to engage and build social and political capital.

Further research is needed in the area of persuasion to gain better understand how to engage and communicate with stakeholder support for emergency and crisis readiness. This will potentially help institutions of higher learning to do a better job of engaging their disengaged and distracted young adults who seldom embrace preparedness programs. Institutions of higher learning have to speak their language of the natives to be able to evangelize to them. What strategies, tools, and processes are suitable in getting buy-in from a reluctant and lukewarm student who would rather play an engaging virtual game rather than sit and learn about shelter-in-place audience?

Another topic of significant importance that is worth researching is the dynamics of town-gown relationships in emergency and crisis readiness. How can institutions of higher learning cultivate and sustain stronger relationships, particularly in cities with multiple

institutions or cities with historically rocky relationships between the institution and local political, economic, and social community? What does it take to escape the trap of the past?

Another gray area that emerged from this study that is worth investigating is the *rearview mirror effect;* that is, the slow disappearance of the impact of a focusing event on the priority agenda and on the mind of a leader with the passage of time, resulting in less urgency in prioritizing emergency and crisis readiness. The absence of a recent emergency or crisis has a deceptive and blinding effect on a leader's mind. Therefore, what can be done to mitigate the rearview mirror effect and to spur continuous post crisis readiness and adaptation?

Conclusion

Beyond the scourge of a major crisis in the past, Thriving University has embraced crisis-readiness and resilience by adopting single-loop and double-loop solutions or lessons emanating from the previous focusing event that served as a wakeup call. Instead of implementing just quick-fix and single-loop solutions, the institution has gone a step further by embracing several double-loop solutions that are changing the institution's norms, beliefs, practices, strategies, and assumptions about campus safety and security.

Based on the insight gleaned from the propositions from the literature and the findings embodied in the four themes above, the extensive adoption of new virtual technologies for crisis readiness, the willingness of leadership to support and facilitate readiness partnerships, and the deepening of a culture of engagement and monitoring have put Thriving University in a more robust state of crisis readiness and resilience than before the focusing event.

In this light, Thriving University is continuing to adapt, innovate and re-invent in areas such as emergency and crisis notification, stakeholder and monitoring and decisive leadership that actively promotes the agenda of crisis readiness. Besides these internal factors, the

institution also enjoys a degree of external insulation, thanks to a number of geopolitical factors (i.e., social, economic, political capital) resulting from its location within a town-gown community. Therefore, internal and external factors collectively give the institution an advantage in the area of campus crisis readiness, a far cry from where it was besieged during the previous devastating event.

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Appendix A: Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practitioners, who seek to transform society by pursuing ethically-informed, rigorously- researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. This policy states the following:

Statement of academic integrity.

As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

Explanations:

What does "fraudulent" mean?

"Fraudulent" work is any material submitted for evaluation that is falsely or improperly presented as one's own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate's final work without full and complete documentation.

What is "unauthorized" assistance?

"Unauthorized assistance" refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as inappropriate. This can include, but is not limited to:

- Use of unauthorized notes or another's work during an online test
- Use of unauthorized notes or personal assistance in an online exam setting
- Inappropriate collaboration in preparation and/or completion of a project
- Unauthorized solicitation of professional resources for the completion of the work.

Statement of Original Work

I attest that:

1.   I have read, understood, and complied with all aspects of the Concordia University–Portland Academic Integrity Policy during the development and writing of this dissertation.

2.   Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association.*

Gideon F. For-mukwai

Digital Signature

Gideon For-mukwai For-mukwai

Name (Typed)

May 20, 2020

Date

Appendix B: Interview Script

Greetings,

My name is Gideon F. For-mukwai and I am a student researcher working with Dr. Anne Grey at Concordia University. I am conducting a research study about the role of communication in campus crisis readiness.

Thank you for your time,

Gideon F. For-mukwai
Principal Investigator
Concordia University–Portland

Questions

1. I wonder; how did you get started in the field of higher education?

2. Permit me to get some other demographic information:
   Age:
   > 25–35
   > 35–45
   > 45–55
   > 55–65
   > 65+

   Years working at your institution:
   Years working on the emergency or crisis team:
3. So far, what is your biggest ah-hah moment in emergency and crisis readiness at your institution?
4. Please explain your role at your institution and your role in the crisis team?

Contextual Background
5. How can you describe leadership efforts in emergency and crisis readiness at your institution?
6. Please, describe one unusual crisis-readiness exercise this year?
7. How does your institution use debrief(s) and after-action reviews (lessons learned) in crisis readiness?
8. The issue of arming educators with guns to prevent gun violence in schools and colleges has been, controversial, polarizing and there many views out there. What is your perspective on this?

Leadership Effectiveness
1. What type of pre-emergency and crisis readiness training activities have you been part of?
2. In what ways has emergency and crisis-readiness changed at your institution in the last decade?
3. What do you think is the role of communication in emergency and crisis readiness at your institution?

Stakeholder Engagement
1. Can you give some examples of how your crisis teams build trust with students about campus crisis-readiness?
2. How does your crisis team develop a common understanding with groups about campus crisis readiness?
3. Give some examples of how leadership at your institution develops mutual aid partnerships in the community as a way to strengthen emergency response and recovery?

Information-Sharing
1. What kind of technological advancements has your institution adopted to improve communication with students, parents and staff during a crisis?
   a. How are technological advancements changing the work of the crisis team?
   b. How is social media impacting your work during or after an emergency?
   c. What are some of the areas where communication can further improve your crisis-readiness?

Appendix C: Online Questionnaire Questions

Directions: The following questionnaire has 20 questions based on emergency and crisis readiness at your Institution of Higher Learning (IHE). Please, choose the most suitable answer based on your understanding.

Q1. Our institution shares emergency and crisis-readiness information with staff, students and parents.
- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree

Q2. I have confidence in the way our institution communicates with stakeholders.
- Strongly agree
- Agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q3. Our institution's leaders engage with local community businesses, political and financial leaders.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q4. Lessons-learned from previous emergencies and crises are communicated to stakeholders.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q5. Our institution's leadership is decisive and adaptable in a crisis.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q6. Emergency operations plan updates are communicated to all stakeholders.
- Strongly agree

- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q7. Our institution invests more on infrastructure readiness than it does on staff and student readiness.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q8. Our leaders perceive social media as an effective communication tool during an emergency.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q9. Past emergency and crisis experiences have motivated the institution to be crisis-ready.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q10. Stakeholders trust the readiness of the current crisis team to respond effectively.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q11. Emergency and crisis-readiness activities are conducted yearly with various stakeholders.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q12. After previous crises experiences, our institution has embraced new norms, procedures and best practices.
- Strongly agree

- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q13. Social ties and community connections are useful in emergency and crisis response and recovery.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q14. Debriefs such as After Action Reviews (AAR) are part of our emergency and crisis readiness activities.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q15. Our institution schedules yearly drills and emergency activities for all campuses.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q16. Frequent information sharing strengthens emergency and crisis-readiness.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q17. Mental health emergency response is part of our institution's emergency readiness plan.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q18. Microblogging by staff and students is supported during emergency and crisis response and recovery.
- Strongly agree
- Somewhat agree

- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q19. The institution has adopted a customized messaging alert approach in communicating with stakeholders.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Q20. The institution's emergency plan includes Mutual Aid Agreements (MAA) with local community partners and organizations.
- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

Research Study Title: Post-Crisis Adaptation: Exploring the Role of Communication in Campus Crisis Readiness in the Aftermath of a Crisis

Principal Investigator: Gideon F. For-mukwai
Research Institution: Concordia University–Portland
Faculty Advisor: Dr. Anne Grey

Purpose and what you will be doing:
The purpose of this survey is to study the role of communication in campus crisis readiness. We expect approximately 12–15 volunteers. No one will be paid to be in the study. We will begin enrollment in December 2019 and end our interactions with participants on February 2020.

To be in the study, you will answer questions in a survey, participate in an in-person interview or virtual interview via zoom.

Doing these things should take less than 1 hour of your time.

Risks:
The only risk we anticipate for participants is that we will collect information that needs to be safeguarded. I, Gideon For-mukwai, principal investigator will take precautions to protect your information. I will substitute your name and any other personal information with a code (a pseudonym) that only I will know. Then, when I or anyone else look at the data, none of the data will have your name or identifying information. We will not identify you in any publication or report. Your information will be kept private at all times. Your name and/or any other personal identifying information will be kept in my secure (locked) files.

Interview sessions will be audio or video recorded. Recordings will be deleted immediately following transcription and member-checking.

Study-related materials will be kept securely for 3 years from the close of the study and will then be destroyed.

Benefits:
Information you provide will help us have a better understanding of how crisis readiness can be improved. Our findings will help educators make better decisions about safeguarding lives and protecting property during an emergency or crisis. This will potentially make your institution and other institutions safer. You could benefit from this study by having a deeper sense of personal and professional accomplishment in helping to improve the way things are done.

Confidentiality:
This information will not be distributed to any other agency and will be kept private and confidential. The only exception to this is if you tell us abuse or neglect that makes us seriously concerned for your immediate health and safety.

Right to Withdraw:
Your participation is greatly appreciated, but we acknowledge that the questions we are asking are personal in nature. You are free at any point to choose not to engage with or stop the study. You may skip any questions you do not wish to answer. This study is not required and there is no penalty for not participating. If at any time you experience a negative emotion from answering the questions, we will stop asking you questions.

Contact Information:
You will receive a copy of this consent form. If you have questions you can talk to or write the principal investigator, Gideon F. For-mukwai at email [redacted]. If you want to talk with a participant advocate other than the investigator, you can write or call the director of our institutional review board, Dr. OraLee Branch [redacted].

Your Statement of Consent:
I have read the above information. I asked questions if I had them, and my questions were answered. I volunteer my consent for this study.

_____   _____
Participant Name   Date

_____   _____
Participant Signature   Date

_____   _____
Investigator Name   Date

_____   _____
Investigator Signature   Date

Investigator: Gideon F. For-mukwai; email: [redacted]
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