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Crisis Leadership and Management of Superintendents During the 2017-18 California Wildfires

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Crisis Leadership and Management of School Superintendents During the 2017-2018

California Wildfires

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These are the people who understand me and know that as a public school

educator for 35 years, my career isn't ending, it is just beginning . . . as Dr. Kitamura.

DEDICATION

This dissertation is dedicated to my brother David who completed his journey at the age of 51 in 2004 and is now home. In his final days, he shared many thoughts and feelings with me, but the one that will stay with me forever is his thought when something doesn't go right in the organization. He said, "Don't blame the people, examine the process."

ABSTRACT

Crisis Leadership and Management of School Superintendents

During the 2017-2018 California Wildfires

by Dianna W. Kitamura

Purpose: The purpose of this mixed methods heuristic research study was to discover how school superintendents described their crisis leadership and management experiences during the 2017-2018 wildfires in California through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework of sense making, meaning making, decision-making and coordination, learning, accounting (Boin, 't Hart, Stern, & Sundelius, 2017). Additionally, this study determined the extent to which school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework.

Methodology: This explanatory, sequential mixed methods heuristic research study investigated a quantitative survey and qualitative interviews to address the research questions as they pertain to the Five Critical Tasks of Strategic Crisis Leadership framework (CTSCL).

Findings: The major findings of this study were superintendents must incorporate the CTSCL into their traditional crisis preparedness plan and include a social-political network to effectively lead their district during a crisis. Training is inadequate for a superintendent's preparation for a crisis; and social justice, equity, and gender equality issues also manifest during a crisis.

Conclusion: Making meaning of a crisis was the critical task that was the most significant for superintendents as they make sense of the crisis and make decisions about

the safety and well-being of students and staff. The decision-making and coordination

task was also significant due to an emphasis on the connection with other public officials

being an essential component of leading a district during a crisis. Finally, preparation for

a crisis is crucial with operations and logistics during a crisis and also the socio-political

aspect of collaborating with mutual aid networks and local, state, and federal leaders to

ensure the response, recovery, and rebuilding of the school district and community.

Recommendations: This study was conducted through the lens of school

superintendents. It is recommended that this same study is conducted for city managers,

county administrators, local and state office of emergency services, fire chiefs, or police

chiefs. An additional recommendation is for the development of professional

development for leaders on the socio-political practices and policies that should be

developed alongside the logistical plan for crisis preparedness.

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CHAPTER I: INTRODUCTION

Leadership was tested to its limit when the Deepwater Horizon oil rig exploded killing eleven crew members and injuring 17 on April 20, 2010. The explosion created the most massive marine oil spill in history and the most significant environmental disaster in U.S. history (Adams, 2015). Deepwater Horizon was owned by British Petroleum (BP), and the CEO, Tony Hayward, garnered much attention for his leadership during the explosion and subsequent oil spill. The attention Hayward received was based on the numerous gaffes he made as the Deepwater Horizon crisis unfolded. Hayward's leadership was captured by many media outlets in print and video and showcased his misguided decisions, inadequate communication, and inability to create an understanding of the disaster as well as the aftermath (BBC News, 2010; Walsh, 2010).

Hayward's mistakes in decision-making and communication as a leader exemplify why leadership is essential during a crisis. His inability to respond to questions to build sense making and meaning of the disaster, his unwillingness to acknowledge the seriousness of the explosion and oil spill, and his communication and coordination about the actions BP would employ did little to build a sense of security or accountability with employees or the public. Stating he just wanted his life back, Hayward was also filmed by a news crew as he toured the damaged shoreline caused by the oil (Walsh, 2010). A leader during a crisis must think, respond, and deliver in an environment rife with pressure, stress, internal and external expectations, and risk (Boin, 't Hart, Stern, & Sundelius, 2017; Flin, 1996). Hayward was unable to lead BP through the Deepwater Horizon crisis because he was unable to think, respond, and act

accordingly. BP, the employees, and the public lost confidence in his leadership, and he was dismissed as the CEO.

Like the Deepwater Horizon explosion, numerous other disasters and crises have created a long-lasting mark in the hearts and minds of the public. Some of the most memorable ones are the Oklahoma City bombing in 1985, the Columbine High School Shooting in 1999, the World Trade Center disaster on September 11, 2001, Hurricane Katrina in 2005, the Fukushima Nuclear disaster in 2011, and the most recent shooting at Parklane High School in Florida. Each of these disasters has a sadly unique set of circumstances beginning with the disaster itself, followed by the leadership dynamics and structure of the organization, the social, economic and political environment, and the expectation of a leader when a crisis occurs.

Seminal authors characterize crisis management under these unique circumstances as a set of interrelated and extraordinary governance challenges. These include early detection of a crisis, an understanding of the situation by the responders, and decisions that are made to ensure efforts by responders are coordinated, collaborative, and accurately communicated (Boin et al., 2017; Crowe, 2013). Another critical component of crisis management is a willingness to collectively learn from the crisis as well as take accountability in the aftermath.

After a disaster, the resulting crisis impacts all aspects of the community. Consistent with other organizations, school districts have experienced substantial crisis situations as well. During the past year, multiple schools across the United States have been impacted by many disasters. These crises have demonstrated the need for strategic school district leadership, which is a relatively unexplored area in crisis management and

a gap in the research (Crowe, 2013; McCarty, 2012; McEntire, Fuller, Johnston, & Weber, 2002; Skavdahl, 2010). Given the number of school crises (fire, flood, hurricanes, earthquakes, shootings), it is important and necessary to provide deeper insight into the school superintendent leadership practices during crisis management regarding how they make decisions in general and how they coordinate, learn, and make meaning for the school community.

Background

Since the 9/11 attack, public expectations of leadership have increased and as a result, influence how crisis management is viewed and implemented today. Most of the heightened expectations of leaders during a crisis center on communication and coordination rather than the traditional military-like and hierarchical emergency management model of preparedness and response (Boin et al., 2017; Crowe, 2013). Past disasters and crises have encouraged a present-day environment where communities are more fearful and less tolerant of significant threats to safety, health, and prosperity. A review of the literature substantiates this claim by providing examples of crisis leadership and management expectations of the public (Boin et al., 2017; Colvin, 2002; Crowe, 2013; Dunbar, 2013; Murawski, 2011). During a crisis, every aspect of the leader and his or her actions is scrutinized through social media along with the interactions between leaders as they responded to the disaster. The public can make more sense of the crisis when leaders create a climate for understanding the crisis through a clear definition of the situation and a narrative that inspires trust in the leader to manage the crisis effectively (Boin et al., 2017).

After reviewing the literature, the researcher discerned a crisis leadership and management framework emerged to strategically manage the social and political environment of our 21st-century media driven and distrusting environment. It was determined that previous crisis management models consisted of operational and tactical responses (Boin et al., 2017; Crandall, Parnell, & Spillan, 2013; Dunbar, 2013; McEntire et al., 2002; U.S. Department of Homeland Security, 2008, 2017; U.S. Department of Education, Office of Safe and Drug-Free Schools, 2007). Traditional operations and tactical response structures include the Federal Emergency Management Agency (FEMA), National Response Framework, and the National Incident Management System (NIMS) originating from the U.S. Department of Homeland Security. An additional framework was also developed by the U.S. Department of Education and the California Office of Emergency Services (OES), an Emergency Plan entitled the Phases for Crisis Management.

The literature describes the evolution of crisis management from the traditional structures of operations and tactical to one that takes into consideration the demands and expectations of the public, the speed at which social media can tell a story, and the recognition of the vulnerabilities that exist in an organization during a crisis (Boin et al., 2017; Colvin, 2002; Crandall et al., 2013; Crowe, 2013; McEntire et al., 2002; Mileti & Gailus, 2005). The evolved crisis management model appears in a framework that Boin et al. (2017) developed entitled the Five Critical Tasks of Strategic Crisis Leadership (CTSCL) framework, which advocates that crisis leadership is complex and infused with divergent expectations from every sector of the community and pressures the leader's decisions and actions.

Five Critical Tasks of Strategic Crisis Leadership (CTSCL)

The CTSCL framework was developed to help manage competing interests and expectations from the public as well as address an organization's internal and external vulnerabilities and claims to be paramount to the success of crisis management. Boin et al. (2017) defined strategic crisis leadership through the five areas of the CTSCL framework. These five critical tasks areas are sense making, decision-making and coordinating, meaning making, accounting, and learning (Boin et al., 2017). These five critical tasks constitute a framework for leaders to manage crisis as effectively as possible when a disaster occurs in their organization.

Sense making is the collecting and processing of information that will help crisis leaders to detect an emerging crisis and understand the significance of what is going during a crisis (Boin et al., 2017). The leader will be bombarded with varying types of information from multiple sources. How leaders make sense of this information and the situation is critical to the strategic picture they will form and the subsequent assessments and then decisions that will ensue.

Decision-making and coordinating are making critical calls on strategic dilemmas and orchestrating a coherent response to those implemented decisions (Boin et al., 2017). Leaders make difficult decisions during a crisis because the magnitude of factors must be considered. Risks and opportunities are at the core of these decisions with policies, politics, and ethical and personal ramifications to be considered when decisions are made and implemented (White, Harvey, & Fox, 2007). When implementing decisions during a crisis, a leader must also consider the mutual aid network needed to carry out the decision, and the way leaders communicate and foster interagency collaboration is

essential to the strategic process (U.S. Department of Homeland Security, 2008, 2017; U.S. Department of Education, Office of Safe and Drug-Free Schools, 2007).

Meaning making is offering a situational definition and narrative that is convincing, helpful, and inspiring to citizens and responders (Boin et al., 2017). Creating the story of the situation rather than having it created for the organization and leader is critical for making meaning and instilling trust in the leader's decisions and management of the crisis. How leaders mitigate contrary decisions and actions based on politics and competing interest determines the degree of meaning making created to support crisis leadership and management efforts (Boin et al., 2017; Crowe, 2013).

Accounting is explaining in a public forum what was done to prevent and manage the crisis and why (Boin et al., 2017). Most organizations cannot stave off crisis indefinitely. Returning to a sense of normalcy requires leaders to account for decisions and actions during and after the crisis. This task will help bring closure to the crisis if conducted democratically, without blame, and keeping in mind the psychological and emotional state of the community or organization (Boin et al., 2017; McEntire et al., 2002).

Learning is determining the causes of the crisis, assessing the strengths and weaknesses of the responses to it, and undertaking remedial actions based on this understanding (Boin et al., 2017). A crisis may present an opportunity to change policies, systems, or practices that were found to be inadequate during the crisis. How leaders seize this opportunity to work together with the public to update, replace, or innovate systems or policies in an organization is vital for the strategic crisis leadership and management process (Boin et al., 2017; Crandall et al., 2013; Crowe, 2013).

Each task of the CTSCL is discreet but interdependent, and exploring how a superintendent's experience during a crisis aligns and is similarly discreet and interdependent also fills a gap in the research. The CTSCL also allow consideration and emphasis on the crisis outcome rather than the person related and the charismatic aspect of leadership. What crises do to established political and organizational orders and how crisis leadership contributes to defending, destroying, or renovating these orders is the aim of the CTSCL. Boin et al. (2017) sought out the distinctive contribution to highlight the political dimensions of crisis leadership—issues of conflict, power, and legitimacy—in their research.

In conjunction with other supporting research, the CTSCL framework was presented as it pertained to large-scale crises created by the 9/11 World Trade Center attack, Hurricane Katrina, the Deep Horizon explosion, and the Fukushima Nuclear disaster. Research applying the CTSCL framework to school district crisis leadership and management during a disaster and crisis was not found and warrants additional research given the number of school districts that have been impacted by violence, emergencies, and natural disasters in recent years (Brickman, Jones, & Groom, 2004; Colvin, 2002; McEntire et al., 2002; Porter, 2010; U.S. Department of Education, Office of Safe and Drug-Free Schools, 2007).

Strategic Crisis Leadership in Schools and Community

During a Natural Disaster

Most recently, school districts and their leaders in Houston, Puerto Rico, and California have experienced natural disasters that were unexpected and produced devastation beyond the ability of any preparedness plan and checklist to manage (Boin et

al., 2017; Boisrand, 2017; Crowe, 2013; Prichard, 2017; Ujifusa, 2017; Vara-Orta &
Superville, 2017). The leadership in each of these locales was tested throughout the crisis
and exploring how their crisis leadership during the floods, hurricanes, and wildfires
aligns with the CTSCL framework may support the claim that effective crisis
management occurs when using the framework.

The Houston Independent School District (HISD) is the largest school district in
Texas and the seventh largest in the nation, and Hurricane Harvey wreaked havoc on the
245 schools and 215,000 students in the district. In Puerto Rico, electricity in most
schools remains off, and it is estimated that 27,000 of the 350,000 students who attended
school in Puerto Rico have fled to other states and countries (Boisrand, 2017; Villamizar,
2018; Vara-Orta & Superville, 2017). The magnitude of the 2017-2018 wildfires in
California is less when compared to the devastation in Houston and Puerto Rico.
However, schools were closed for as long as 3 weeks in some burned areas; schools were
destroyed, homes were lost, and suddenly students, school teachers, and support staff
became homeless (Boisrand, 2017; Prichard, 2017). In each of these school
communities, strategic crisis leadership took place as the school superintendents made
sense of the crisis to make decisions and then implement those decisions in coordination
with other leaders in the community. As these tasks were taking place, school
superintendents ensured they were communicating through various media, including
social media, an account of what was happening, why it was happening, and what to
expect concerning the schools, staff, students, and their families (Boin et al., 2017;
Crowe, 2013). Superintendents were also making decisions and then coordinating the

implementation with mutual aid networks, local, state, and national agencies with little information about the cause of the crisis and the long-term effect.

A challenge for each of these school communities was the inability to control the aftermath of a natural disaster. When the weather cooperated, flood waters receded, wildfires were controlled, and the Federal Emergency Management Agency (FEMA) responded were factors of the complex context school leaders navigated. Added to this complexity is a void in training that would prepare school leaders to mitigate facility loss assessment and insurance adjusters, debris removal, sanitation, and rebuilding after a natural disaster as well as the technical expertise to determine the air, soil, and water quality safety for school-age children and staff (Ingenito, 2005; McEntire et al., 2002; Porter, 2010).

Another challenge for school districts in a crisis is being caught between numerous governances and political systems (Boin et al., 2017; Crowe, 2013). Jurisdictions and boundaries are somewhat blurred when the natural disaster crosses local, county, state, and national lines. Social media in Houston, Puerto Rico and California exhibited this situation when Twitter and Facebook posts of leaders made accusations about slow responses for help, and two leaders were disputing each other about whether to evacuate or not (Wang, Wootson, & O'Keefe, 2017).

Leaders must understand social media as a form of communication, a natural connection between people that is timely, effective, and efficient (Crowe, 2013; Skavdahl, 2010). The conversations that occur through social media affect how governance and politics can be influenced or portrayed, which in turn affects how leadership during a crisis can be impacted. Information to the community, parents, and

students regarding school closings, for example, was messaged through social media along with other forms of communication, but with no electricity in many areas, the only way the school community was receiving information was through social media (J. B. Houston et al., 2015; Kelly, 2014; Willon, Megerian, St. John, & Lin, 2017). To enhance governance and political relationships, the school leaders used social media as a way to make meaning for the school community, which in turn supported the work of other community leaders and their messaging.

School District and Community Leader Politics

Numerous governance agencies play a role when a natural disaster strikes a community and its schools. The city or local governance and the county governance are the political systems that interact most with school district governances. These three organizations each have a board made up of directors, trustees, supervisors, or councilmembers with a set of policies and bylaws that governs each of them. During a disaster, these three governances worked collaboratively through the crisis; this was necessary for the management of the crisis and aftermath to be effective and successful (Boin et al., 2017; Crandall et al., 2013; McEntire et al., 2002; Murawski, 2011). Political intelligence is an ever-present factor when working collaboratively with other governances. White et al. (2007) defined a politically intelligent leader as one who uses intentional and unintentional actions to lead people to his or her point of view. The city, county, and school governances each have politically intelligent leaders who have their point of view about jurisdictions, resources, decisions, and political power. Exploring how each of these governances and their superintendent, city manager, and county administrator remained focused on crisis management for the entire community and the

alignment of decisions and actions to the CTSCL framework is an area of research that has not been examined extensively (Boin et al., 2017; Crandall et al., 2013).

The literature revealed little study of interagency collaboration that included the school districts in the decision-making for the overall community. Exploring the experiences of superintendents and their governances and political systems with other agencies in this study adds to the body of research for future development of crisis management in school districts (Boin et al., 2017; Crandall et al., 2013; Crowe, 2013). Developing pragmatic practices that demonstrate the CTSCL framework as a viable foundation for crisis management was also explored through the analysis of superintendents' experiences.

Crisis Management and Superintendent Leadership

During the 2017-2018 Wildfires

The 2017-2018 California wildfires began October 8th in Napa, Sonoma, and Mendocino Counties and because of high winds spread quickly. The Atlas fire began near Berryessa and rapidly destroyed 54,382 acres and 1,355 structures. The Tubbs fire was ignited near Calistoga and burned 36,807 acres and destroyed 5,636 structures. The Redwood Valley fired started 2 hours after the Tubbs and Atlas fires and sustained a loss of 36,523 acres and 546 structures. On December 4th, as Napa, Sonoma, and Mendocino County schools were just beginning to get back to "normal," the Thomas fire erupted in Ventura and Santa Barbara County and caused a loss of 1,063 structures and 281,893 acres. On November 8, 2018, the Camp fire began at 6:30 a.m. almost destroying the entire town of Paradise and its schools. Paradise Unified School District lost all but one elementary school, and students were displaced in borrowed and makeshift classrooms all

over Butte County. The Camp fire burned 153,336 acres and destroyed 18,804 structures.

Superintendent Leadership

Today's superintendent must be a visionary leader with intuitive and far-reaching communication skills that guide a school district toward achieving shared goals in a culture where beliefs, assumptions, and expectations are diverse and divergent (ERCA Group, 2016). Superintendents balance the interests of many different stakeholders and at the same time implement the goals of the school board while ensuring student learning and effective teaching are at the forefront of every decision and action (ERCA Group, 2016). In California, the influx of state reforms in funding and academic standards has created additional demands on superintendents already dealing with a complex environment and tremendous internal and external pressures (Dunbar, 2013). The 2017 wildfires wreaked havoc on several school districts in California, and the superintendents, along with these regular responsibilities, were faced with unfathomable challenges for which no administrator certification or credentialing program could prepare them.

The superintendents' experiences, as well as other school leaders who have experienced wildfires in their school district, provide insight regarding crisis leadership practices that took place during these natural disasters. Illuminating these crisis leadership practices and how they relate to the CTSCL provide school superintendents the framework for strategy, decision-making, and action when a disaster strikes. Limited research has been conducted specifically with superintendents and their leadership during a crisis caused by wildfires. Therefore, the gap to be addressed in the research is the

practical application of the CTSCL to a cadre of school district superintendents'

experiences during a natural disaster such as the 2017 wildfires in California.

Statement of the Research Problem

Since the 9/11 attack, the expectations of leaders during a crisis have increased

and require more from crisis management than just facilitating an effective response

(Boin et al., 2017). Boin et al. (2017) stated that crisis leadership requires urgent

decisions when the causes and consequences of a crisis are unavailable; they require

effective communications to stakeholders with varying needs, views, and frames of

reference and also requires leaders to explain vulnerabilities in the organization's

structures, values, and routines. School districts, like other organizations, experience

disasters and must, therefore, consider these increased expectations of school

superintendents as they lead their districts through a crisis (Colvin, 2002; McCarty, 2012;

McEntire et al., 2002; Murawski, 2011; Porter, 2010; U.S. Department of Education,

Office of Safe and Drug-Free Schools, 2007).

Although crisis leadership and management study and literature have increased as

a result of the 9/11 attack, little of it addresses the role of the school superintendent

during a disaster and crisis (Dunbar, 2013; Ingenito, 2005; Murawski, 2011; Porter, 2010;

U.S. Department of Education, Office of Safe and Drug-Free Schools, 2007). In the

limited amount of research regarding school superintendents and crisis management, the

focus is on the traditional frameworks of crisis leadership that are more hierarchical with

tactical and operational responses rather than strategic tasks for crisis management (Boin

et al., 2017; Crandall et al., 2013; Crowe, 2013).

Ample research that predominantly studied personal characteristics such as intelligence, charisma, and perseverance has been conducted on leadership and the traits of a leader, but a gap exists in the research about strategic crisis leadership and specific tasks that can impact the outcome of a crisis (Boin et al., 2017; Crandall et al., 2013). A more significant gap in the literature exists when the crisis leader is a school superintendent. Boin et al. (2017) created a crisis leadership framework that may address the need for these specific and strategic tasks.

Boin et al. (2017) developed this crisis leadership framework that is titled the CTSCL and consists of sense making, decision-making and coordination, meaning making, accounting, and learning. The CTSCL was developed to manage competing interests and expectations from the public as well as address an organization's internal and external vulnerabilities and claims to be paramount to the success of crisis management (Boin et al., 2017). Using the CTSCL in a crisis management situation was not found and again points to a gap in the literature about these emergent concepts regarding crisis management in general and specifically, school superintendents employing the CTSCL framework. This gap indicates the need for research of school superintendents and their crisis management experiences as well as the practices and policy decisions they employed during a disaster crisis.

Purpose Statement

The purpose of this mixed methods heuristic research study was to discover how school superintendents described their crisis leadership and management experiences during the 2017-2018 wildfires in California through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework of sense making, meaning making, decision-

making and coordination, learning, accounting (Boin, 't Hart, Stern, & Sundelius, 2017). Additionally, this study determined the extent to which school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework.

Research Questions

1. To what extent did school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting) during the 2017-2018 California wildfires?

2. How do school superintendents describe their crisis leadership and management experiences during the 2017-2018 California wildfires through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting)?

Significance of the Problem

This study contributes to the limited and insufficient body of literature regarding school superintendents and their crisis management experiences, practices, and policy decisions during a natural disaster. Most importantly, this study serves to connect the emergent concepts of crisis management with traditional strategies by researching the application of the CTSCL framework to the school superintendent and his or her crisis leadership. Thus far, the research has yet to yield how school superintendents manage public expectations, decision-making, and communication during a crisis and the strategic tasks employed to successfully navigate a school district through the crisis (Ingenito, 2005; Murawski, 2011; Porter, 2010).

School superintendents, as well as other leaders, will benefit from this research because disasters will continue to happen, and crisis leadership will continue to be needed. The lag in the research exists because each disaster and community is unique, and leaders piece together multiple frameworks and strategies that best suit their crisis leadership needs, and this has caused rifts in disaster preparedness seminal authors because no single theory or framework can be identified as the core concept on which crisis management is based (Covington & Simpson, 2006). This study explored the CSTCL framework as the more holistic approach to crisis leadership that brings together varying models, frameworks, and theories regarding crisis leadership and management for school superintendents (Boin et al., 2017; Covington & Simpson, 2006).

The 2017-2018 California wildfires rapidly swept through Butte, Sonoma, Napa, Mendocino, Ventura, and Santa Barbara counties burning 614,565 acres, destroying 28,187 structures, and killing 131 people (CAL FIRE, 2018). Each acre burned, each house destroyed, and each person who perished are connected in some way to a student who attends a school in one of these affected counties. School leaders are entrusted to provide safe schools along with a quality education program. In Northern California alone, classes were canceled for 260,000 students in 600 schools (Boisrand, 2017). The Camp fire in Butte County displaced most of the students attending Paradise Unified School District with only the one elementary school able to reopen once the fires were contained. The Tubbs fire in Sonoma County saw 6,000 homes and five schools burn; this placed the school districts in a situation where schools were available for students to attend but many students did not have a place to live (CAL FIRE, 2018).

School superintendents face challenges with their everyday responsibilities, and adding the challenges a crisis brings along with the recovery efforts required after the crisis subsides creates a vacuum in professional learning about holistic crisis leadership for school superintendents. It is critical that superintendents are trained in a crisis leadership framework and are prepared for them before the next disaster. A part of this preparation is the professional development of middle level and school site management in a strategic crisis framework. Thus, this study will be invaluable to school superintendents and other leaders as a holistic approach to crisis management, leadership, and training that can be incorporated into the decisions, practices, and policies when the next disaster strikes.

Definitions

Accounting. As used in this study, accounting is defined as the explanation in a public forum about what was done to prevent and manage the crisis and why. Most organizations cannot stave off crisis indefinitely, and returning to a sense of normalcy requires leaders to account for decisions and actions during and after the crisis. Accounting brings closure to the crisis, if conducted democratically, without blame, and keeping in mind the psychological and emotional state of the community or organization (Boin et al., 2017).

Crisis. Crisis is defined in numerous ways; however, in this study it is defined as an urgent threat to the preexisting structures or values with many unknowns that requires a wide-ranging response to a serious threat to the basic structures or the fundamental values and norms of a social system, which under time pressure and highly uncertain

circumstances necessitates making critical decisions (Boin & McConnell, 2007; Boin et al., 2017; Flin, 1996; Rosenthal, Charles, & 't Hart 1989; Selznick, 1957).

Crisis leadership and management. For the purpose of this study, crisis leadership and management is the requirement of leaders to make urgent decisions while information about the crisis is unavailable and effective communication to a variety of stakeholders with differing needs, views, and frames of reference. Also, the leaders must explain the vulnerabilities in existing structures, values, and practices (Boin et al., 2017).

Decision-making and coordination. As defined for this study, decision-making and coordination is making critical calls on strategic dilemmas and orchestrating a coherent response to those implemented decisions. Leaders make difficult decisions during a crisis because the magnitude of factors must be considered and come with acute unknowns about the nature of the crisis, future developments, and the impact of various social-political options (Boin et al., 2017). Risks and opportunities are at the core of these decisions with policies, politics, and ethical and personal ramifications to be considered when decisions are made and implemented.

Learning. As defined in this study, learning is determining the causes of the crisis, assessing the strengths and weaknesses of the responses to it, and undertaking remedial actions based on this understanding. It is the purposeful efforts to reexamine, reassess, and recalibrate existing and proposed beliefs, policies, and organizational structures. How leaders seize this opportunity to work together with the public to update, replace, or innovate systems or policies in an organization is vital for the strategic crisis leadership and management process (Boin et al., 2017).

Meaning making. Meaning making is defined for the purposes of this study as offering a situational definition and narrative that is convincing, helpful, and inspiring to citizens and responders. Creating the story of the situation rather than having it created for the organization and the leader is critical for making meaning and instilling trust in the leader's decisions and management of the crisis (Boin et al., 2017).

Sense making. For this study, sense making is defined as collecting and processing of information that helps crisis leaders detect the emerging crisis and understand the significance of what is going on during that crisis (Boin et al., 2017). The leader will be bombarded with varying types of information from multiple sources. How leaders make sense of this information and the situation is critical to the strategic picture they will form and the subsequent assessments and decisions they make.

Social-political. Involves both social and political factors and the interests and incentives facing different groups and how these influence politics, policies, and efforts to promote development; how formal institutions and informal social political cultural norms shape interactions, and political and economic competition; what values and ideas matter to political behavior and public policy.

Strategic crisis leadership. In this study, strategic crisis leadership is defined as the dealing with the issues of conflict, power, and legitimacy and focuses on leadership that pertains to the overall direction of crisis response and the political process surrounding these responses.

Superintendent. A superintendent is the CEO of a school district and sets the tone and direction while at the same time responding to the competing interests of the board of trustees, administrators, teachers, parents, students, and the community. The

superintendent implements the board of trustees' vision by making the day-to-day decision about educational programs, allocation of resources, staffing, and facilities (ERCA Group, 2016).

Delimitations

This study was delimited to 27 superintendents who led districts impacted by the 2017-2018 California wildfires for the survey and five superintendents who were selected from the 27 surveyed superintendents for face-to-face interviews and who met the following criteria:

1. Superintendent's school district located in a county on CAL FIRE's Top 20 List
2. Schools were closed for more than 5 days.
3. Schools were damaged or destroyed.
4. Lives were lost.
5. Student homes were lost.
6. Employee homes were lost.

Organization of the Study

This study consists of five chapters, references, and appendices organized in the following order. Chapter I provided an introduction to the study with background on crisis leadership and management through various crises that have occurred since the 9/11 attacks. Definitions and delimitations concluded Chapter I. Chapter II presents an extensive literature review on crisis leadership and management both traditional and contemporary as well as research of seminal authors who have studied crisis and leadership for many years. Chapter III describes the methodology selected by the researcher to address the research questions and collect data accordingly. Chapter IV

presents the quantitative and qualitative data collected, the analysis of that data, and the

subsequent findings. Chapter V consists of the major findings and their implications for

actions. Also included in this chapter are the recommendations for further research and

the conclusion.

CHAPTER II: LITERATURE REVIEW

The purpose of this literature review is to provide a synthesized analysis of the literature from several authors of books, journal articles, dissertations, and reports as it pertains to crisis leadership and management during a crisis. Chapter II provides a synthesis of the literature and is organized to provide a historical context of traditional crisis leadership and management and the emergence of contemporary crisis leadership and management frameworks. The chapter also introduces the Five Critical Tasks of Strategic Crisis Leadership (CTSCL) framework and its theoretical foundation for the development of the tasks (sense making, decision-making and coordination, meaning making, learning and accounting). Next, the literature review funnels the analysis to crisis leadership and management in schools and then more specifically to the role of the school superintendent. Literature review pertaining to the 2017-2018 California wildfires is provided to set the stage for answering the research questions about the use of the CTSCL framework as a crisis leadership and management structure. The CTSCL framework is centered on the premise that leadership in a contemporary context requires leaders who can respond to a crisis by making sense of the situation, formulating strategic decision and coordinated implementation of those decisions, endeavoring to make meaning of the crisis, accounting for managing the crisis, and learning about the cause, response, and remediation of the crisis (Boin, McConnell, & 't Hart, 2008; Boin & Renaud, 2013; Boin et al., 2017)

Crisis Leadership and Management

Traditional Crisis Leadership and Management Preparedness

Early crisis management concepts dated back to the 1930s and consisted of *phases* that focused on understanding disasters and helped organize the practice of emergency management (Baird, 2010). These phases (mitigation, preparation, response, and recovery) were identified by the National Governors' Association (NGA) in the late 1970s and were used widely to describe comprehensive emergency management (Baird, 2010; National Governor's Association for Policy Research, 1979; see Figure 1). In response to a lack of emergency management coordination at the state and federal level, the NGA formed a Subcommittee on Disaster Assistance in response to the Governors' concerns (National Governor's Association for Policy Research, 1979).
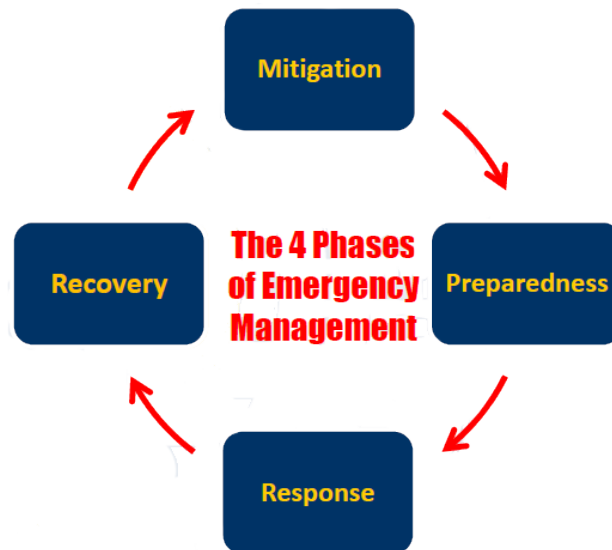
Figure 1. The four phases of emergency management. From *Comprehensive Emergency Management: A Governor's Guide*, by National Governor's Association for Policy Research, 1979, Washington, DC: Defense Civil Preparedness Agency.

Coincidentally, President Carter, a former governor, created the Federal

Emergency Management Agency (FEMA) with an executive order that combined

numerous disaster-related programs from multiple federal agencies (Baird, 2010;

National Governor's Association for Policy Research, 1979; U.S. Department of

Homeland Security, 2008, 2010). The *Comprehensive Emergency Management: A*

Governor's Guide, a seminal report, provided recommendations that are still relevant

today in two aspects of the phases of emergency management (National Governor's

Association for Policy Research, 1979). First, the NGA recommended the scope of

emergency management needed to expand beyond preparedness and response to include

mitigation and recovery (Baird, 2010; National Governor's Association for Policy

Research, 1979; U.S. Department of Homeland Security, 2008, 2010).

FEMA further developed the phases of emergency management into a traditional

operation and tactical response structure that includes the Federal Emergency

Management Agency (FEMA), National Response Framework, and the National Incident

Management System (NIMS) originating from the U.S. Department of Homeland

Security. An additional framework was also developed by the U.S. Department of

Education and the California Office of Emergency Services (OES) Emergency Plan

entitled the Phases for Crisis Management (Boin et al., 2017; Crandall et al., 2013;

Dunbar, 2013; McEntire et al., 2002; U.S. Department of Homeland Security, 2008,

2010, 2017; U.S. Department of Education, Office of Safe and Drug-Free Schools, 2007).

The literature review concerning these early concepts and phases of emergency

management found little discussion about leadership during emergencies and only briefly

touched on the skills needed for the four different phases of an emergency. The National

Governor's Association for Policy Research (1979) described a need for fast-action, authoritative and operational decision-making approach, system-planning skills, training skills, and technical expertise in the phases of preparedness and response for the phases of mitigation and recovery. The leadership needs require analytic and evaluative policy-making skills, political acumen, and knowledge of state emergency plans (National Governor's Association for Policy Research, 1979). These described leadership needs are operational and tactical in nature with little indication of connection to strategic leadership tasks, which the literature indicates are crucial for effecting operational response, maintaining strategic communication, and alleviating the fears and anxieties that accompany a crisis (Boin & McConnell, 2007; Boin et al., 2017; Selznick, 1957).

Contemporary Crisis Leadership and Management Preparedness

The literature describes the evolution of crisis management from the traditional structures of operations and tactical phases in emergency scenarios to strategic leadership tasks in crisis situations, which takes into consideration the demands and expectations of the public, the rapid spread of a narrative on social media, and the illumination of vulnerabilities in an organization during a crisis (Boin et al., 2017; Colvin, 2002; Crandall et al., 2013; Crowe, 2013; McEntire et al., 2002; Mileti & Gailus, 2005). An emergency is described in the literature as an unforeseen but predictable incident that occurs regularly while a crisis is a different magnitude and character and can be defined as an urgent threat to the preexisting structures or values with many unknowns and requiring a wide-ranging response (Boin & McConnell, 2007; Boin et al., 2017; Flin, 1996; Selznick, 1957).

It is this shift from emergency management (traditional, operational, tactical) to crisis leadership and management (contemporary, strategic, critical task) that the literature exposed, clarifying details as the researcher sought to answer the research questions of this study. Examples of crisis leadership and management during situations such as the 9/11 attack, the Columbine High School shooting, Hurricane Maria in Puerto Rico, and most recently the Parklane High School shooting in Florida illustrated how the use of the Four Phases for Emergency Management would not adequately reduce the urgent threat to structures and values and the phases would not assist in making the unknown known and lessening fear, anxiety, and distrust (Boin et al., 2017; Crowe, 2013; McEntire et al., 2002; Mitroff, Alpaslan, & Green, 2004; Mitroff, Shrivastava, & Udwadia, 1987; Skavdahl, 2010). The researcher discovered a framework in the literature by seminal authors who have been researching crisis leadership and management and guided by the research in sociological interpretations of leadership, functions of the executive, and high-reliability organization. Boin et al. (2017) introduced the CTSCL framework, which advocates that crisis leadership is complex and infused with divergent expectations from every sector of the community and pressures the leader's decisions, actions, and communication at a time when causes and consequences of the crisis may be unknown.

Theoretical Foundation of the Five Critical Tasks of Strategic

Crisis Leadership Framework

One of the seminal authors of the CTSCL, Dr. Arjen Boin (personal communication, September 16, 2018) discussed the original research that assisted in the development of the CTSCL and specifically the authors of this research. Dr. Boin stated

that the researchers who influenced his studies were Todd LaPorte and his work with high-reliability organizations; Chester Barnard, the author of *The Functions of the Executive*, and Philip Selznick, the author of *Leadership in Administration: A Sociological Interpretation*. Dr. LaPorte's research was also guided by the work of Dr. Barnard's *Functions of the Executive* and is referenced not only in his research reference lists but also noted by other authors studying Dr. LaPorte's research (Ansell & Boin, 2011; Barnard, 1968; Fernandez, 2010; Gehani, 2002; McNally, 2018; Scott, 1992). Dr. Selznick was also provided as an influential author by Dr. Boin and Dr. LaPorte (Ansell & Boin, 2011; LaPorte & Consolini, 1991; Selznick, 1957). The theoretical frames and constructs of these researchers were discovered to underpin and aligned to the CTSCL as the literature review traveled a profound path to several foundational studies.

Dr. Barnard's *Functions of an Executive* has been the basis for numerous studies and remained a constant influence on management study for more than 70 years. Although the executive functions he described were indicative of his era, he was also a pioneering leadership thinker with his views on cooperation, morals, motivation, positive interdependence, decision-making, authentic selfhood, strategy, and legacy (McNally, 2018). Dr. Barnard is said to be one of the first to bridge the conceptual gap between management and leadership literature (Gehani, 2002). Dr. La Porte's high reliability organization (HRO) theory was built upon Dr. Barnard's *Functions of an Executive* and the concepts of cooperative systems, organizational incentives, the model of authority, and leadership. Having a heightened awareness of the social conditions that impact the complexity of an organization where competing demands and external pressures expect efficiency, accountability, and error-free performance was Dr. La Porte's perspective of

an effective leader (Ansell & Boin, 2011). Dr. Selznick's sociological interpretation of leadership consists of essential tasks of leadership that support a values-driven and decentralized structure in an institution. His work also addressed the gap between management and leadership with his description of a responsible and creative leader who can facilitate strategic change to attain the needs and aspirations of the institution whereby the leader transitions from an administrative manager to institutional leader (Selznick, 1957). The CTSCL framework closes the management and leadership gap further by building upon the works of Barnard, La Porte, and Selznick and their emphasis on the social-political nature of a crisis. Boin et al. (2017) developed the CTSCL framework for leaders to ensure a crisis can achieve closure and restoration can ensue.

These seminal authors have in common the premise that only management of an organization is insufficient to lead through the internal and external social-political pressures of an institution. Add to this pressure a crisis and the seminal authors purport that trust and stewardship are essential for the leader to withstand the onslaught of competing interests and miscommunications associated with a phenomenon that is unexpected (Barnard, 1968; Boin & McConnell, 2007; Gehani, 2002; McNally, 2018; Scott, 1992; Selznick, 1957). Selznick (1957) stated, "The executive becomes a statesman as he makes the transition from administrative management to institutional leadership" (p. 154). The connection between these seminal authors and the shift from management only to the addition of leadership with identified strategic tasks is depicted in Table 1.

Table 1

Alignment of Seminal Research to the Five Critical Tasks of Strategic Crisis Leadership

Executive functions and constructs (Barnard)	Contemporary executive functions (Scott, Gehani)	High-reliability theory (LaPorte)	Leadership: Sociological interpretation (Selznick)	5 Critical tasks of strategic crisis (Boin et al.)
Pyramid of competence	Develop skills, acquire knowledge, intuitive judgment	Preoccupation of failure Commitment to resilience	Organization character Purpose and commitment	Sense making
Promote cooperation of control of individuals	Executive/ employees share embedded knowledge to gain and sustain competitive advantage	Reluctance to simplify	Values and defense of integrity	Sense making
Formal organization: open system, organic "live" structure	Hierarchical formal organization part of a larger organic center-less network of cooperative alliances	Sensitivity to operations	Policy and social structure	Meaning making
Balancing informal organization	High-tech, high-touch organization (Naisbitt, Naisbitt, & Philips, 1999)	Sensitivity to operations	Policy/social structure Decentralization/ social integration	Meaning making
Dual decision theory; executive as individual and as organizational decision maker; exchange theory	Evolutionary theory of economic change (Nelson & Winter, 1982)	Deference to expertise	Values and defense of integrity	Decision-making and coordination
Consent theory of executive authority over employees	Participatory team management and mid-up and mid-down innovation	Deference to expertise	Decentralization and social integration	Decision-making and coordination
Limited choice; restriction of action; logical and nonlogical mental process	Use intuitive judgment in highly turbulent environments	Deference to expertise	Decentralization and social integration	Accounting and learning
Executive's authority, personal responsibility; moral codes	Ethical global corporation	Commitment to resilience	Self-knowledge	Accounting and learning

(Barnard, 1968; Boin & McConnell, 2007; Gehani, 2002; LaPorte & Consolini, 1991; McNally, 2018; Scott, 1992; Selznick, 1957).

Five Critical Tasks of Strategic Crisis Leadership (CTSCL)

The CTSCL framework was created to assist crisis leaders to manage competing interests and expectations from the public as well as address an organization's internal and external vulnerabilities to respond effectively and authentically to crisis management. Boin et al. (2017) defined strategic leadership as the overall direction of crisis responses and the political process surrounding these responses. Therefore, strategic crisis leadership responds utilizing the five areas of the CTSCL framework. These five critical tasks areas are sense-making, decision-making and coordinating, meaning making, accounting, and learning (Boin et al., 2017).

Sense Making

The collecting and processing of information that helps crisis leaders detect emerging crisis and understand the significance of what is going on during a crisis are known as sense making (Boin et al., 2017). The leader is bombarded with varying types of information from multiple sources during a crisis. How leaders make sense of this information and the situation is critical to the strategic picture they will form and the subsequent assessments and decisions that will ensue.

The sense making task has two components. The first component is the detection of the emerging threats and vulnerabilities, and the second component is understanding the unfolding crisis (Boin et al., 2017). The literature describes barriers to crisis detection is predicated on the capacity of the organization to collect, share, and interpret information. Other organizational obstacles are a lack of resources allocated to detection of a potential crisis and creating a false sense of security by normalizing potential threats (Boin et al., 2017).

An organizational example of this barrier is the NASA Challenger exploding 90 seconds after takeoff. The subcontracted engineers had a "gut feeling" the O-rings would not withstand the temperatures and reported to NASA their suspicions, but because they contradicted the engineers' earlier report about the O-rings and temperature ranges, NASA proceeded with the launch. An early warning sign was detected but was not heeded when the Challenger continued with takeoff (Murphy, 2001).

Decision-Making and Coordination

Decision-making and coordination means making critical calls on strategic dilemmas and orchestrating a coherent response to those implemented decisions (Boin et al., 2017). Leaders make difficult decisions during a crisis because the magnitude of the factors must be considered, and they come with acute unknowns about the nature of the crisis, future developments, and the impact of various policy options. Risks and opportunities are at the core of these decisions with policies, politics, and ethical and personal ramifications to be considered when decisions are made and implemented (White et al., 2007).

When implementing decisions during a crisis a leader must also consider the mutual aid network needed to carry out the decision and how leaders communicate and foster interagency collaboration are essential to the strategic process (U.S. Department of Homeland Security, 2008, 2017; U.S. Department of Education, Office of Safe and Drug-Free Schools, 2007). Decision-making in a crisis is not limited to top-down responses, and the implication of centralized or decentralized decisions and procedures impact the quality of coordination of the decisions that are made and the dynamics of the groups and teams involved (Boin, 2004; Boin & McConnell, 2007; Boin et al., 2017).

Prior to the 9/11 crisis, a collaborative protocol between the Federal Aviation Agency (FAA) and the North American Aerospace Defense Command (NORAD) was coordinated in the case of a hijacking; however, when the 9/11 attack occurred, there was no time to engage the protocol (Boin et al., 2017; Shrivastava, Mitroff, & Alpaslan, 2013). Instead, the Boston FAA realized another airplane was headed to the World Trade Center and made a decentralized decision not to follow the protocol by contacting the military directly for F-15 aircraft support. This example illustrates how centralized decisions and procedures can slow crisis response while individuals or agencies can make sense of the "live" crisis and determine that a different (decentralized) decision must be initiated (Boin, 2004; Skavdahl, 2010).

Effective decision-making and coordination are dependent upon the crisis leadership that provides strategic direction, monitors responses, and ensures decisions are made the produces a quality response (Boin, Overdijk, & Kuipers, 2013; Boin et al., 2017). The literature emphasized the importance of building relationships with the mutual aid networks and other pertinent local, state, and national organizations that would be involved during a crisis. This investment in building authentic and trusting relationships across jurisdictions, communities, and boundaries helps develop a bank account of social capital that is critical in facilitating the promising, rapid, informal, and collaborative coordination needed for effective crisis response (Aldrich, 2012).

Meaning Making

The literature review yielded various interpretations of meaning making; however, for this study it is defined as offering a situational definition and narrative that is convincing, helpful, and inspiring to citizens and responders (Boin et al., 2017).

Meaning making is creating the story of the situation rather than having it created for the organization, and the leader is critical for making meaning and instilling trust in the leader's decisions and management of the crisis. How leaders mitigate contrary decisions and actions based on politics and competing interest determines the degree of meaning making created to support crisis leadership and management efforts (Boin et al., 2017; Crowe, 2013).

Boin et al. (2013, 2017) claimed that making meaning of a crisis is the difference between gaining and losing the permissive consensus that leaders need to make decisions and create policies during a crisis. Permissive consensus is defined in the literature as the process of public opinion to passively approve or at least not actively disapprove a leader's decisions or development of policy (Langdal & von Sydow, 2007). The process of making meaning during crisis unfolds in two ways. First, a persuasive message or narrative that explains what happened and why, what the impact will be, how the crisis will be resolved, who is responsible for this resolution, and what learnings will be gleaned from the situation is provided. The second part of the meaning making process is the leaders' delivery of their narrative or message (Boin & McConnell, 2007; Boin et al., 2008, 2017).

Delivering the narrative (crisis communication) is highly competitive, and every word, picture, video, gesture, timing, and performance matter because messages can be sent and received quickly through multiple formats (Boin et al., 2017; Crowe, 2013). One of those formats, social media, can not only be a platform for a leader during a crisis but can also be a way for cynics to convey their message about the leader or the organization. Crisis communication is not as simple as following a communication plan

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but entails intuitive and sometimes improvised communication by leaders who are suddenly subject to crisis reporting. Crisis communication is the focus in much of the literature because it pertains to crisis leadership no matter how little is said about the process of making meaning during those communications. The literature stated that crisis communication makes meaning when it employs deliberate and intensive means to deliver information and guide the public perception and emotions (Boin et al., 2017; Crowe, 2013).

Accounting

Accounting is the explanation in a public forum about what was done to prevent and manage the crisis and why (Boin et al., 2017). Most organizations cannot stave off crisis indefinitely, and returning to a sense of normalcy requires leaders to account for decisions and actions during and after the crisis. This task helps bring closure to the crisis if it is conducted democratically, without blame, and keeping in mind the psychological and emotional state of the community or organization (Boin et al., 2017; McEntire et al., 2002).

In the literature, two types of crisis trajectories were identified: the fast-burning and the long-shadow crisis. A natural disaster, such as a hurricane or a flood, is an example of a fast-burning crisis because the simultaneous ending of the crisis response and political attention is described as having closure. An accountability process is absent in a fast-burning crisis to allow for the leader to claim the crisis is over and to cease any further dialogue. Although the literature described a natural disaster as a fast-burning crisis, research also exists that stated a more contemporary crisis such as a wildfire

continues even after the urgency and threat has subsided (Boin et al., 2008, 2017;

Crandall et al., 2013).

The long-shadow crisis does not end when immediate response challenges have

been met and the recovery, reconstruction, and reform questions emerge (Boin et al.,

2017). Several factors were described as the cause for the prolonged continuation of the

crisis aftermath. These factors include a search for the cause of the crisis, legal issues

surrounding the crisis, the duration, and cost of the recovery process. The crisis can end

only when the operations of the mutual aid network cease and when strategically the

crisis issues are no longer the primary public, political, and policy agendas (Boin et al.,

2017).

Accounting for the decisions and procedures executed during a fast-burning or

long-shadowing crisis is a crucial factor in bringing real closure to a crisis. The leader

must own the decisions made during the crisis and accept the responsibility for the

response no matter the outcome. Blaming others will not end the crisis and could create

another crisis. Boin et al. (2017) stated, "Only those who have the wisdom and courage to

prioritize the effectiveness and legitimacy of the system as a whole rather than their

short-term personal and organizational interests can escape the self-defeating blame

games" (p. 123).

Learning

Learning is determining the causes of the crisis, assessing the strengths and

weaknesses of the responses to it, and undertaking remedial actions based on this

understanding (Boin et al., 2017). The researchers define learning in this context as the

purposeful efforts to reexamine, reassess, and recalibrate existing and proposed beliefs,

policies, and organizational structures (Boin et al., 2008). A crisis may present an opportunity to change policies, systems, or practices that were found to be inadequate during the crisis. How leaders seize this opportunity to work together with the public to update, replace, or innovate systems or policies in an organization is vital for the strategic crisis leadership and management process (Boin et al., 2017; Crandall et al., 2013; Crowe, 2013).

The literature described these opportunities as structural and fundamental reform and presented three reasons why this reform is possible. The first reason is that a crisis can loosen the structural constraints that keep an organization in the status quo. Second, a crisis can challenge the core beliefs and values that guide the organization's policies and practices. Third, a crisis can unlock entrenched mindsets not only at the top but throughout the organization (Boin et al., 2017). Much of the literature studied the aftermath of a crisis related to reconstructions, trauma, and accountability issues and uncovered a gap in the research regarding a macrosocial perspective that delves into the collective learning for organizations or communities (Birkland, 1997).

Crisis Leadership and Management of Natural Disaster Crisis in Schools

The most recent literature pertaining to natural disaster crises and school districts concerned locations like Houston, Puerto Rico, and California where leaders experienced natural disasters that were unexpected and produced devastation beyond the ability of operational and tactical preparedness plans and checklists to manage (Boin et al., 2017; Boisrand, 2017; Crowe, 2013; Prichard, 2017; Ujifusa, 2017; Vara-Orta & Superville, 2017). The leadership in each of these locales was tested throughout the crisis, and the body of research regarding crisis leadership during these disasters and the possible

alignment with the CTSCL framework to support the claim that effective crisis management occurs when using the framework is the study to be conducted (Boin et al., 2013, 2017).

Numerous journal articles, press releases, and new stories described school district locations, size, and the crisis that occurred in the Houston Independent School District (HISD), the largest school district in Texas and the seventh largest in the nation; Hurricane Harvey wreaked havoc on the 245 schools and 215,000 students in the district. The research also described the crisis in Puerto Rico with electricity in most schools remaining off. An estimated 27,000 of the 350,000 students who attended school in Puerto Rico have fled to other states and countries (Boisrand, 2017; Vara-Orta & Superville, 2017; Villamizar, 2018). Further review of the literature illuminated the magnitude of the 2017 wildfires in California was less when compared to the devastation in Houston and Puerto Rico; however, schools were closed for as long as 3 weeks in some heavy fire-impacted areas. Schools were destroyed, homes were lost, and suddenly students, school teachers, and support staff became homeless (Boisrand, 2017; Prichard, 2017).

In each of these school communities, reports of strategic crisis leadership took place as the school superintendents made sense of the crisis in an attempt to make strategic decisions and then coordinate the implementation of those decisions in collaboration with other leaders in the community (Boin, 2004; Boin & McConnell, 2007; Boin & Renaud, 2013). As these tasks were taking place, the literature recorded that school superintendents were communicating through various media, including social media, an account of what was happening, why it was happening, and what to expect

concerning the schools, staff, students, and their families (Boin et al., 2017; Crowe, 2013).

The review of the literature revealed the challenge for each of these school communities was the inability to control the aftermath of a natural disaster crisis. When the weather cooperated, flood waters receded, wildfires were controlled, and FEMA responded were factors of the complex context school leaders navigated, according to reports. Added to this complexity is a void in training that would prepare school leaders to mitigate facility loss assessment and insurance adjusters, debris removal, sanitation, and rebuilding after a natural disaster as well as the technical expertise to determine the air, soil, and water quality safety for school-age children and staff (Ingenito, 2005; McEntire et al., 2002; Porter, 2010).

Another challenge for school districts in a crisis is being caught between numerous governances and political systems (Boin et al., 2017; Crowe, 2013). Jurisdictions and boundaries are somewhat blurred when the natural disaster crisis crosses local, county, state, and national lines. Accounts were recorded in several journals' articles of social media in Houston, Puerto Rico, and California exhibiting this situation when Twitter and Facebook posts of leaders made accusations about slow responses for help, and two leaders were disputing each other about whether to evacuate or not (Wang et al., 2017).

Additional research described social media as a form of communication that must be understood by leaders as a natural connection between people that is timely, effective, and efficient (Crowe, 2013; Skavdahl, 2010). The conversations that occur through social media affect how governance and politics can be influenced or portrayed, which in

turn affects how leadership during a crisis can be impacted. Several reports stated

information to the community, parents, and students regarding school closings, for

example, was messaging through social media along with other forms of communication,

and with no electricity in many areas, the only way the school community was receiving

information was through social media (J. B. Houston et al., 2015; Kelly, 2014; Willon et

al., 2017). To enhance governance and political relationships, the school leaders used

social media as a way to make meaning for the school community; this in turn supported

the work of other community leaders and their messaging.

Crisis Management and Superintendent Leadership

During the 2017-2018 Wildfires

The California Department of Forestry and Fire Protection (CAL FIRE) protect

and steward over 31 million acres of California's privately owned wildlands and

emergency services to 36 of the state's 58 counties. CAL FIRE responds to an average of

more than 5,600 wildland fires each year and answers the call more than 350,000 times

for other emergencies each year. CAL FIRE responds to medical aids, hazardous

material spills, swift water rescues, search and rescue missions, civil disturbances, train

wrecks, floods, earthquakes, and more (CAL FIRE, 2018). CAL FIRE had the most up-

to-date and accurate information about fires in California and was the source for much of

the statistical data used in this study.

CAL FIRE and media outlets provided the following information about the 2017-

2018 fires in California (CAL FIRE, 2018). The 2017 California wildfires began October

8th in Napa, Sonoma, and Mendocino County and because of high winds spread quickly.

The Atlas fire began near Berryessa and rapidly destroyed 54,382 acres and 1,355

structures. The Tubbs fire was ignited near Calistoga and burned 36,807 acres and

destroyed 5,636 structures. The Redwood Valley fired started 2 hours after the Tubbs

and Atlas fires and sustained a loss of 36,523 acres and 546 structures. On December 4th

as Napa, Sonoma, and Mendocino County schools were just beginning to get back to

normal, the Thomas fire erupted in Ventura and Santa Barbara County and caused a loss

of 1,063 structures and 281,893 acres. On November 8, 2018, the Camp fire began at

6:30 a.m. almost destroying the entire town of Paradise and its schools. Paradise Unified

School District lost all but one elementary school, and students were displaced in

borrowed and makeshift classrooms all over Butte County. The Camp fire burned

153,336 acres and destroyed 18,804 structures.

The superintendents in each of these impacted districts appear to have acted

quickly to ensure the safety of their students, families, staff, and facilities.

Simultaneously, each of these leaders was tasked with locating students and staff;

opening evacuation centers at school sites; mobilizing buses to evacuate community

members; connecting with police, fire, and other agencies; and beginning operation of a

district incident command center. These actions took place as soon as the wildfires began

with no electricity and cell phone reception at a minimum and the fires raging at 100%

uncontained.

School Superintendents

Today's superintendent must be a visionary leader with intuitive and far-reaching

communication skills that guide a school district toward achieving shared goals in a

culture where beliefs, assumptions, and expectations are diverse and divergent (ERCA

Group, 2016). Superintendents balance the interests of many different stakeholders and

at the same time implement the goals of the school board while ensuring student learning and effective teaching are at the forefront of every decision and action (ERCA Group, 2016). Repeated in the literature were the pressures on superintendents in California and across the nation with the influx of state reforms in funding, new academic standards, and the increased need for social-emotional support that created additional demands on superintendents already dealing with a complex environment and tremendous internal and external pressures (Brickman et al., 2004; Dunbar, 2013; McEntire, 2000; Porter, 2010).

A superintendent's vision, goal setting, and visibility were noted as well as the ability to manage personnel and build relationships (Antonucci, 2012; Fullan, 2001; Fullan, Cuttress, & Kilcher, 2005). The literature also discussed the characteristics, skills, and indicators of effectiveness as related to student learning and achievement; however, few data were found regarding strategic leadership during a crisis and the associated tasks of sense making, decision-making and coordination, meaning making, accountability, or learning (Björk, Kowalski, & Browne-Ferrigno, 2005; Boin et al., 2017; Forsyth, 2004; Fullan et al., 2005; P. Houston, 2001; Petersen, 1999; Waters & Marzano, 2007a, 2007b).

School Superintendents and the 2017-2018 Wildfires

The 2017-2018, wildfires wreaked havoc on several school districts in California, and the superintendents along with their regular responsibilities were faced with unfathomable challenges for which no administrator certification or credentialing program could prepare them (Antonucci, 2012; Darling-Hammond, LaPointe, & Meyerson, 2007). Review of the literature, with the superintendent experiences in mind, as well as other school leaders who have experienced wildfires in their school district,

provided insight regarding crisis leadership practices that took place during these natural

disaster crises. Illuminating these crisis leadership practices and experiences and how

they might align to the CTSCL could provide school superintendents the framework for

strategy, decision-making, and action when a crisis strikes. Limited research has been

conducted specifically with superintendents and their leadership during a crisis caused by

wildfires. Therefore, the gap in the research is the practical application of the CTSCL to

a cadre of school district superintendents' experiences during a natural disaster such as

the 2017-2018 wildfires in California.

CHAPTER III: METHODOLOGY

Overview

The identification and description of school superintendents' experiences during a wildfire crisis is the focus of this mixed methods heuristic study. Chapter I provided the background, significance, and organization of the study. In Chapter II, the literature was reviewed as it pertained to leadership during a crisis, strategic leadership tasks during a crisis, and a historical reference for crisis management frameworks. This chapter provides a review of the purpose statement and research questions. In addition, the research design, population, sample, instrumentation, and data collection process are provided. To increase validity and reliability of the study, the interview process and the survey development and procedures are explained in detail. The limitations and assumptions of this study are addressed as they pertain to the methodology and the ethical procedures used to protect the participants of the study.

Purpose Statement

The purpose of this mixed methods heuristic research study was to discover how school superintendents described their crisis leadership and management experiences during the 2017-2018 wildfires in California through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework of sense making, meaning making, decision-making and coordination, learning, accounting (Boin et al., 2017). Additionally, this study determined the extent to which school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework.

Research Questions

1. To what extent did school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership Framework (sense making, meaning making, decision-making and coordination, learning, accounting) during the 2017-2018 California wildfires?

2. How do school superintendents describe their crisis leadership and management experiences during the 2017-2018 California wildfires through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting)?

Research Design

Determining the methodology to be used in this study was based on four key elements: the problem to be investigated, the purpose of the study, the theory base, and the nature of the data (Roberts, 2010). The use of both quantitative and qualitative methods was the research design determined to be the method best suited to address the purpose, problem to be investigated, and the nature of the data to be gathered for this study. Quantitative research is testing theories while qualitative research tends to develop rather than test theories. Hence, the researcher is regarded as a part of the research process in a qualitative study while in a quantitative study the researcher is thought to be a neutral entity. When using both a quantitative and qualitative design in a study, the procedure is termed a mixed methods procedure. A mixed methods study involves collecting both quantitative and qualitative data as means to answer the research questions and is integrated into the design through connection of the two types of data collected (Creswell, 2014).

The mixed methods approach was chosen for this study to draw on the strengths of each method while minimizing limitations each procedure can elicit when used in isolation. A deeper understanding of mixed methods research goes beyond simply resolving the weaknesses of each individual research method but leads to a new and multilayered understanding through the purposeful integration of both approaches. This integration of approaches leads to the creation of new knowledge unobtainable through traditional methods alone (Creswell & Plano Clark, 2011).

Triangulating data as a means to verify and validate information was a consideration in selecting a mixed methods process since it would assist in supporting. quantitative results such as survey data with qualitative follow-up data such as interviews (Creswell, 2014; Patten, 2012; Patton, 2015). For example, quantitative methods may isolate features of human experience from the context in which they occur, and potentially provide a one-dimensional view of the reality of the participants' experiences. However, qualitative inquiry typically focuses on a small number of individuals' experiences, which makes generalization of findings problematic (Sweeney, 2016).

Creswell (2014) described three basic mixed methods designs: convergent mixed methods parallel; explanatory sequential mixed method; and exploratory sequential mixed methods designs. Convergent parallel has both qualitative and quantitative features implemented, collected, and analyzed simultaneously. Creswell (2014) asserted the data are collected and then interpreted or explained as either convergent (conjunction) or divergent (discrepancy). When considering the qualitative aspect of the convergent parallel design, a narrative inquiry approach was contemplated. Patton (2015) described this approach as one that focuses on stories which form the individual experiences of

participants and is the source of the data. A descriptive design was considered for the quantitative portion of the convergent parallel mixed methods design because the data can be collected and summarized to provide the researcher the ability to describe the collected results. However, conclusions cannot be made when using a descriptive design, a fact that is not conducive to the study of superintendents' crisis leadership experiences during a wildfire (Patten, 2012). The convergent parallel design did not align well with the timelines nor the research and purpose of this study.

The exploratory design was also considered for this mixed methods heuristic study. In an exploratory design, qualitative data are first collected and analyzed, and themes are used to develop a quantitative instrument to further explore the research problem (Creswell & Plano Clark 2011). Three stages of analyses are conducted: after the primary qualitative phase, after the secondary quantitative phase, and at the integration phase that connects the data and extends the initial qualitative exploratory findings (Creswell & Plano Clark 2011). The exploratory mixed methods design is multiphase and time consuming and is described a straightforward in design, implementing, and reporting (Creswell, 2014). The exploratory mixed methods may further the understanding of superintendent experiences during a wildfire however, the purpose of the research was best accomplished by collecting quantitative data first and then the qualitative data through a heuristic inquiry.

The researcher selected the explanatory sequential mixed methods study since the quantitative research occurs first and the analysis of that data is further explained through the qualitative data gathered (Creswell, 2014). In addition, the quantitative data gathering was instrumental in capturing how superintendents identified their practices

through the lens of the CTSCL framework and was the basis of selecting the sample of superintendents to interview. As stated, the qualitative procedure of this mixed methods study utilized a heuristic inquiry design, which allowed the researcher to be an active participant in the research and the face-to-face interviews conducted with the qualitative sample of superintendents.

A deeper understanding of the phenomena is realized as the researcher delves deeper into the study and discovers new meanings regarding the phenomena as well as the discovery about her own experiences (Moustakas, 1990). The researcher is a superintendent who led her school district through the California wildfires in 2017. Her lived experiences during the wildfires and self-searching for insight about crisis leadership yielded valuable artifacts and data she could reference to facilitate authentic sharing and a deeper level of understanding regarding crisis leadership during a wildfire (phenomenon) alongside other superintendents (Moustakas, 1990). Thus, a heuristic inquiry design as the qualitative portion of this mixed methods study offers a frame for collecting and synthesizing data, examining the experiences of the researcher and participants, and values the researcher's experiences and facilitates dialogue across perspectives (Moustakas, 1990; Shannon-Baker, 2016; West, 2001).

Heuristic research is a search for the discovery of meaning and essence in significant human experience. It requires a subjective process of reflecting, exploring, sifting, and elucidating the nature of the phenomenon under investigation (Douglass & Moustakas, 1985. To fully understand or be one with the research question in a heuristic inquiry, a focus on the process of investigating the human conditions called the inverted perspective is essential (Moustakas, 1990). Through this process, the researcher is

immersed in the phenomena and the research question to the extent the process moves from the whole to the part and then back to the whole or from the experience to the concepts and then back to the experiences (Moustakas, 1990). Heuristic inquiry recognizes the importance of the researcher's values and experiences regarding phenomena by recognizing that different experiences are equally important and also the significance of using a process to guide the inquiry to reduce potential collusion or bias (Kleining & Witt, 2000; Shannon-Baker, 2016; West, 2001). As the researcher and a superintendent to be interviewed, the Heuristic inverted prospective process was a guide for the researcher's self-reflection and internal dialogue about the experiences of leading a school district through a wildfire. In addition, the researcher had not discussed the experiences of the wildfires with any of the superintendents to be interviewed in this study.

Specifically, this mixed methods heuristic study used both a survey instrument to gather quantitative data from school superintendents who led their district through a wildfire crisis during the 2017-2018 California wildfires and interviewed a selected sample of school superintendents who met a set of criteria (Table 2). The survey instrument was developed not only to gather data to inform the interview question but also to assist in the selection of individuals to interview from a diverse group of superintendents impacted by wildfires throughout California during the 2017-2018 school year.

The basis for the survey instrument was the Executive Tasks of Crisis Management Assessment, which examines the extent to which a set of 10 tasks of crisis management were identified by the leaders of an organization (school district) during a

crisis. These 10 crisis tasks were developed from extensive research of crisis

management in organizational settings and locations (Boin et al., 2013). The Executive

Task of Crisis Management Assessment provided the foundation for the development of

the Five Critical Tasks of Strategic Crisis Leadership (CTSCL; sense making, meaning

making, decision-making and coordination, learning, accountability) that were the frame

for the questions used to interview the sample population of superintendents who led

their districts during the 2017-2018 wildfires in California (Boin et al., 2017).

Table 2

Criteria for Sampling of Superintendents Interviewed

Criteria	Supt. 1	Supt. 2	Supt. 3	Supt. 4	Supt. 5
Cal Fire Top 20 List	X	X	X	X	X
Wildfire 2017-18	X	X	X	X	X
Damaged or destroyed schools	X	X	X	X	X
Closed school 5 days or more	X	X	X	X	X
Lives lost	X	X	X	X	X
Student homes loss	X	X	X	X	X
Employee homes loss	X	X	X	X	X
Completed survey	X	X	X	X	X

Note. Supt. = superintendent.

This explanatory, mixed methods heuristic inquiry identified and described the

experiences of superintendents and their crisis leadership and management during a crisis

through the lens of the CTSCL framework. The use of a heuristic inquiry approach

allowed for the researcher's perspective to be a part of the data collection since the

researcher is a school superintendent who led a district that was directly impacted by the

2017-2018 California wildfires (Kleining & Witt, 2000; Moustakas, 1990; Shannon-

Baker, 2016). To ensure the data were not tainted, the researcher refrained from discussing the wildfires with other superintendents who could possibly be a part of the study. In addition, the researcher was interviewed by two full-time university professors prior to the other interviews being conducted.

Population

The population of a research study is a well-defined collection of individuals or objects known to have similar characteristics. All individuals or objects within a certain population usually have a common, binding characteristic or trait (McMillan & Schumacher, 2010). The population for this study was 1,026 public school superintendents in California. A school superintendent is the CEO of a school district and sets the tone and direction while at the same time responding to the competing interests of the board of trustees, administrators, teachers, parents, students, and the community. The superintendent implements the board of trustees' vision by making the day-to-day decisions about educational programs, allocation of resources, staffing, and facilities.

Creswell (2008) defined target population as a group of individuals with some common defining characteristic that the researcher can identify with a list or set of names. The target population in this study was superintendents in California who had led districts through a crisis involving wildfires. This list of superintendents was derived from the California Department of Forestry and Fire Protection (CAL FIRE) statistics of the 20 most destructive, deadliest, and largest wildfires in California and the school districts within each of those wildfire areas. The oldest of these wildfires dates back to 1923, and the most recent occurred in November of 2018. In total, more than 300 school

districts were within fire areas between 1923 and 2018. Those superintendents who led

their school district during a 2017-2018 California wildfire and on the CAL FIRE list

were the quantitative sample to receive the survey (Figure 2).
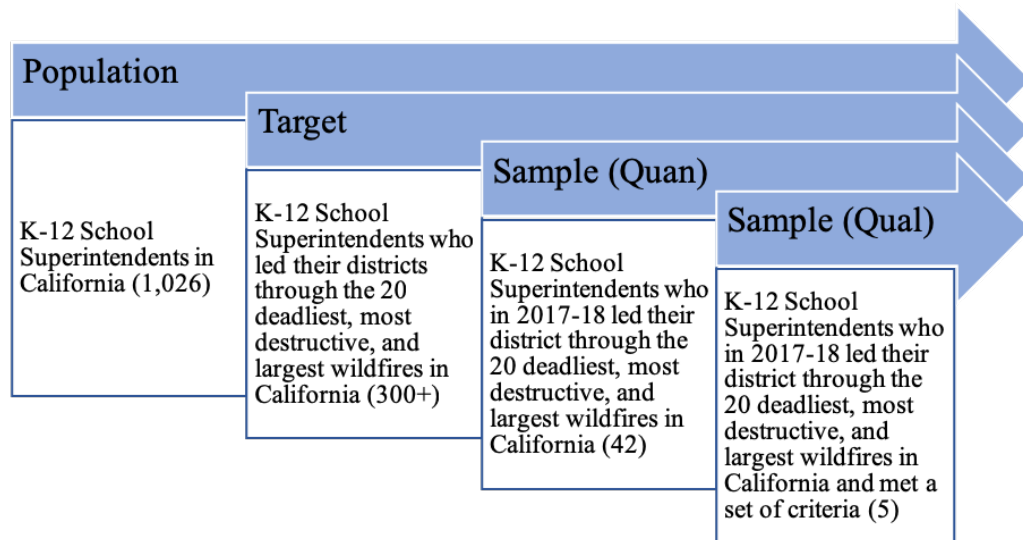
Figure 2. Population, target populations, quantitative and qualitative sample.

Quantitative Sample

     A sample in a quantitative study is defined as a group of participants from whom

data are collected (McMillan & Schumacher, 2010). The quantitative sample in this

study was the superintendents who led districts through a wildfire crisis in 2017-2018 and

whose districts are within the area on the CAL FIRE list of the 20 most destructive,

deadliest, and largest wildfires. This sampling approach is deemed purposeful sampling

since the researcher selects participants from the target population who provided a rich

source of information related to the research topic (Patten, 2012). The quantitative

sample of 42 superintendents received an introductory letter and e-mail with an

explanation of the purpose of the study and the importance of their participation as

leaders who led their district through a wildfire in 2017-2018 that is listed on CAL

FIRE's 20 most destructive, deadliest, and largest wildfires in California (Appendices A, B, and C; Table 3).

Table 3

Cal Fire List of 2017-2018 Wildfires and the Associated School Districts

School District	Wildfire	County
Fairfield-Suisun	Atlas Fires	Solano
Travis	Atlas Fires	Solano
Vacaville	Atlas Fires	Solano
Vallejo	Atlas Fires	Solano
Paradise	Camp Fire	Butte
Redding School	Carr Fire	Butte
Gateway Unified	Carr Fire	Butte
Grant Elementary School	Carr Fire	Butte
Upper Lake	Mendocino Complex	Lake
Lucerne	Mendocino Complex	Lake
Lakeport	Mendocino Complex	Lake
Konocti	Mendocino Complex	Lake
Kelseyville	Mendocino Complex	Lake
Middletown	Mendocino Complex	Lake
Napa	Nuns/Atlas Fire	Napa/Sonoma
Ukiah	Redwood Valley	Mendocino
Geyserville	Redwood Valley	Mendocino
Willits	Redwood Valley	Mendocino
Fillmore	Thomas Fire	Ventura
Ventura	Thomas Fire	Ventura
Santa Paula	Thomas Fire	Ventura
Ojai	Thomas Fire	Ventura
Oxnard	Thomas Fire	Ventura
Santa Barbara	Thomas Fire	Santa Barbara
Montecito	Thomas Fire	Santa Barbara
Goleta	Thomas Fire	Santa Barbara
Carpenteria	Thomas Fire	Santa Barbara
Wright	Tubbs Fire	Sonoma
Piner Olivet	Tubbs Fire	Sonoma
Mark West	Tubbs Fire	Sonoma
Bennett Valley	Tubbs Fire	Sonoma
Bellevue	Tubbs Fire	Sonoma
Rincon Valley Unified	Tubbs Fire	Sonoma
Roseland	Tubbs Fire	Sonoma
Calistoga	Tubbs Fire	Sonoma
St. Helena	Tubbs Fire	Sonoma
Kentwood	Tubbs/Nuns Fire	Sonoma/Napa
Santa Rosa City Schools	Tubbs/Nuns Fire	Sonoma/Napa
Las Virgenes	Woosley	Ventura
Conejo Valley	Woosley	Ventura
Oak Park	Woosley	Ventura
Santa Monica-Malibu	Woosley	Los Angeles

Qualitative Sample

The qualitative sample of superintendents was selected from the superintendents who completed their survey and also met a set of criteria (see Table 2). Additionally, superintendents who experienced the most recent wildfire crises were selected since their recollection of the wildfires would be less distorted and research has demonstrated that distortions in memory can occur with the passage of time and increase with age (Hirst et al., 2009; Lacy & Stark, 2013). Five superintendents met the criteria for the interviews and are within the recommended sample size of five to 25 according to Creswell (1998). The qualitative sample of five superintendents were from Butte County and the Camp fire, Mendocino County and the Redwood Valley fire, Santa Barbara County and the Thomas fire, Napa County and the Atlas fire, and the researcher from Sonoma County and the Tubbs and Nuns fire.

Instrumentation

This study was conducted using an explanatory sequential mixed methods heuristic approach to address the research questions. Creswell (2014) stated, "The combination of qualitative and quantitative approaches provides and more complete understanding of a research problem then either approach alone" (p. 4). Administering a survey to the target population of 42 superintendents assessed the extent to which crisis leadership and management practices demonstrated during a wildfire could be identified through the lens of the CTSCL framework. The qualitative interviews of the five superintendents captured personal experiences with the researcher aiming to describe a phenomenon in concrete and lived-through terms (Patton, 2015). The research design of a heuristic inquiry emphasizes the researcher's direct and personal encounter with the

phenomenon that includes an autobiographical connection. As the superintendent for

Santa Rosa City Schools for 3 years and having led her district through the Tubbs

wildfire crisis in October of 2017, she utilized the inverted perspective to investigate her

self-dialogue, tacit knowing, intuition, indwelling, and focusing, which are the core of

this heuristic inquiry (Table 4).

Table 4

Process of Inverted Perspective

Process	Description
Self-dialogue	Recognition that if one is going to be able to discover the constituents and qualities that make up an experience, one must begin with oneself. One's own self-discoveries, awareness, and understanding are the initial steps in the process.
Tacit knowing	Underlying concepts in heuristic research and discovery is the power of revelation in tacit knowing. We know more than we can tell. Limiting tacit knowledge in research limits possibilities for knowing (range and depth of meaning).
Intuition	The bridge between implicit knowledge (tacit) and explicit knowledge is intuitiveness or intuition. Intuition is the internal capacity to make inferences and land on knowing underlying structures and dynamics.
Indwelling	The process of turning inward to seek a deeper, more extended comprehension of the meaning, nature, quality or theme of human experience. Unwavering willingness to pay attention and concentrate on a facet of human experience.
Focusing	The clearing of an inward space to enable one to tap into thoughts and feelings that are essential to the clarifying question. It is the inner attenuations of a sustained and systemic process of getting to the central means of an experience.

The researcher has been an educator for 35 years serving in numerous public

school roles including teacher, counselor, vice principal, principal, district coordinator,

district director, assistant superintendent, associate superintendent, and school board

member and president. She had been at Santa Rosa City Schools for 6 years and was in

her 2nd year as superintendent when the wildfire crisis occurred. The researcher's

leadership experiences and practices during the Tubbs fires were an essential contribution to the study, and while understanding the phenomenon with increasing depth, the researcher also became more self-aware and gained greater self-knowledge as a human and a leader (Moustakas, 1990).

Quantitative Instrument

A survey was selected for the quantitative research of this study since it provides a numeric description of trends and opinions of the population (Creswell, 2014). In this study, the sample population is 42 superintendents who led their districts in a wildfire that is noted on the CAL FIRE's 20 most destructive, deadliest, and largest fires in California. From the numeric responses of these superintendents, inferences were made that influenced the interview questions of the qualitative methodology; they were also a third point reference to substantiate the qualitative data gathered. The use of a survey is an economical use of resources. It takes less fiscal and human resources to design, administer, and then collect data (Creswell, 2014; Patton, 2015).

The survey based on the Executive Tasks of Crisis Management Assessment (Boin et al., 2013) was administered to 42 superintendents identified in the purposeful sampling of the target population. The tasks that make up the Executive Tasks of Crisis Management Assessment and the 16 questions posed by the author regarding crisis leadership practices within those tasks were used to create the survey (Appendix D). The Executive Tasks of Crisis Management Assessment is grounded in the theoretical research of Chester Barnard regarding the Executive Tasks of Crisis Management and is one of the foundations for the CTSCL framework (Fernandez, 2010; Gehani, 2002; McNally, 2018). Table 5 illustrates the connection between the survey and interview

Table 5

Research Question Alignment

Critical task	Research Question 1	Research Question 2
	1. To what extent did school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework during the 2017-2018 California wildfires?	2. How do school superintendents describe their crisis leadership and management experiences during the 2017-2018 California wildfire through the lens the Five Critical Tasks of Strategic Crisis Leadership framework?
	Survey questions	Interview questions
Sense making	To what extent did you create conditions that facilitated a shared early recognition of a threat caused by the fires? To what extent did you create, facilitate, and rehearse a sensemaking method during the fires?	What was the first thing you did after heard about the fires? How did you collect and process information about the fire? Describe how you synthesized this information and communicated with your families, staff, and community?
Meaning making	To what extent did you offer a clear interpretation of the crisis and explain how you intended to lead the school district out of it? To what extent did you actively cooperate with communications professionals to ensure they had timely and correct information for dissemination to the public?	In what ways did you help your families, staff, and community understand and find meaning about what was happening with the fires?
Decision-making and coordination	To what extent did you carefully deliberate which decisions should be made about the fire impact? To what extent were the decisions made after some form of due process? To what extent did you monitor and assess forms of vertical and horizontal cooperation? (Vertical & horizontal cooperation refers to cooperation among a variety of organizations). To what extent did you facilitate effective cooperation and intervene where cooperation was lacking or dysfunctional?	What were the factors you considered when you made decisions during the first days of the fire? Who did you rely on and work with as you made these critical decisions? Who did you coordinate with to implement these decisions?

Table 5 (*continued*)

Critical task	Research Question 1	Research Question 2
	1. To what extent did school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework during the 2017-2018 California wildfires?	2. How do school superintendents describe their crisis leadership and management experiences during the 2017-2018 California wildfire through the lens the Five Critical Tasks of Strategic Crisis Leadership framework?
	Survey questions	Interview questions
Decision-making and coordination (*continued*)	To what extent did you actively monitor the state of critical (life-sustaining) systems and the connections between them? To what extent did you access expertise with regard to these critical (life-sustaining) systems?	
Learning	To what extent did you allow for reflection on the effects of chosen courses of action? To what extent did you encourage and tolerate negative feedback? To what extent did you record crisis management proceedings to facilitate learning by outsiders? To what extent did you actively involve yourself in crisis preparations?	How did explain publicly what was done to prevent and manage the crisis? Based on your experiences during the fires, what is the most important message you have for other others?
Accounting	To what extent did public leaders try to present a transparent and constructive account of their (in)actions before and during the crisis? To what extent did you present a transparent and constructive account of your (in)actions before and during the crisis?	In what ways did you assess the strengths and weakness of your response to the fire? How will address the weaknesses and leverage the strengths in your response to the crisis? What is you greatest learning about yourself as a leader as a result of the wildfires?

questions and their alignment to the CTSCL. The survey and interview questions are located in Appendix E.

A 6-point Likert scale was used for each of the 16 questions in the survey. Each superintendent responded to scale with not *at all, very little, some, moderate, great, always* to indicate the extent to which they could identify their use of the CTSCL framework. An introductory letter and e-mail, which included a link to the online survey, were sent to the 42 superintendents. Also included was an informed consent form for the superintendent to sign acknowledging their understanding of the purpose of the survey and intent of the data collected. The introductory letter, informed consent, survey, and interview questions are located in Appendices F, G, D, and E.

Qualitative Interviews

Creswell (2014) cautioned researchers about how "experiences may cause researchers to lean toward certain themes, to actively look for evidence to support their position, and to create favorable or unfavorable conclusions about the site or participants" (p. 188). Patton (2012) recommended a reflective lens by which a researcher becomes more mindful of participant characteristics to address potential researcher bias. The researcher was conscious of any interaction with other superintendents who might be a part of the study. For 2 and a half years the researcher did not engage in any discussion with the other superintendents interviewed in this study. Self-reflection throughout the study came from developing presentations and presenting them to the California School Boards Association (CSBA), the National School Boards Association (NSBA), the Association of California School Administrators (ACSA), and several state and local organizations seeking to learn more about the wildfires (McMillan & Schumacher, 2010).

The interview questions were developed from the Executive Tasks of Crisis Management Assessment and posed in a way to extract experiences and practices rather

than a rating or a score (survey). Each participant was asked the same questions;

however, the nature of a heuristic inquiry did create some variation with additional

questions beyond those developed initially. The variation was the result of self-

searching, dialogue with the researcher, and the lived experiences generating new

knowledge from the superintendents including the researcher who is also a participant in

the study (Douglass & Moustakas, 1985).

All five interviews were conducted with Brandman University's Institutional

Review Board's (BUIRB's) approval and began with introductions and a script of

questions to create an environment of trust and openness before beginning the interview.

Each interview was recorded, and the participant was made aware of the purpose for

recording. The researcher began with an overview, the purpose, and an explanation of

procedural safeguards. All participants signed BUIRB's informed consent form and gave

permission to be audio recorded. Immediately following the interviews, the information

was retrieved and transcribed. Coding was conducted using the qualitative analysis

software program NVIVO 12.

Field-Testing the Survey

The survey was field-tested by two superintendents who led their districts through

the Tubbs fire in October of 2017 but are not a part of this study. These individuals were

provided with the same brief introduction, instructions, and 16 questions. Feedback

about the survey questions was recorded as field notes. Very few modifications were

needed based on the feedback from these two superintendents. They did want to add

qualifiers onto the some of the questions, but through discussion it became evident that

would have made the question biased. The information gathered during field-testing of

the survey was reviewed using Dr. Cox's recommendation for a developing an effective questionnaire and compared to Dr. Boin's Executive Tasks of Crisis Management Assessment. Creswell (2014) asserted that a well-conducted field-testing provides information to the researcher that can increase success when conducting the actual study.

Field-Testing the Interviews

Creswell (2014) explained pilot testing as essential to making changes to an instrument through the feedback of individuals. An expert qualitative researcher accompanied the researcher to observe tone and body language during a field-test of the interview questions to a superintendent who had been impacted by the wildfires but was not sampled for an interview. After the interview, the expert provided the researcher with constructive feedback, specifically on her interview style and process in the form of field notes. This step provided "appropriateness, meaningfulness, and usefulness" while increasing the validity of the qualitative aspect of the study (Fraenkel & Wallen, 2006, p. 462).

<div align="center">

Validity and Reliability

</div>

Creswell (2014) defined validity as whether or not the instrument "items measure the content they were intended to measure" (p. 160) and how distinct that may look for qualitative versus quantitative data. Reaffirming the need for both validity and reliability in a study, Creswell also explained reliability as it "refers to whether scores to items on an instrument are internally consistent, stable over time, and whether there was consistency in test administration and scoring" (p. 247). The researcher paid close attention to the alignment of these items to the overall purpose and research questions of the study. As part of the validation process, the final survey and interview questions

were reviewed with the input of experts. These experts include Dr. Jim Cox, the author

of *Your opinion, please! How to Build the Best Questionnaires in the Field of Education*

(Cox & Cox, 2008), and Dr. Arjen Boin, a seminal author and researcher on crisis

leadership and management. Dr. Boin is one of the creators of the CTSCL and the

Executive Tasks for Crisis Management Assessment.

Intercoder Reliability

Intercoder reliability was also applied to the qualitative portion of this study to

further develop reliable results. Lombard, Snyder-Duch, and Bracken (2002) asserted

intercoder reliability as a term used to express to what extent "independent coders

evaluate a characteristic of a message or artifact and reach the same conclusion" (para. 3).

According to Lombard et al. (2002), "It is widely acknowledged that intercoder reliability

is a critical component of content analysis and (although it does not ensure validity) when

it is not established, the data and interpretations of the data can never be considered

valid" (p. 589). The researcher's interview data were coded by an independent coder to

ensure reliability of the coding and to lessen bias. The independent coder was a retired

superintendent who experienced the 2017-2018 wildfires and is also a part-time

university professor. Since the researcher is a participant in the study, it was critical to

this process that a qualified individual conduct the interview of the researcher and

observe the process of the interview. Two full-time university professors who are experts

in qualitative research conducted and observed the researcher's interview prior to any of

the other interviews taking place. Intercoder reliability was addressed through this

process.

Triangulation

Triangulation is defined as the combination of methodologies in the study of the same phenomenon and strengthens a study by the use of this combination (Denzin, 1978; Patton, 2015). This study's mixed methods heuristic design is inherently constructed to utilize triangulation as a means to have the quantitative and qualitative data cross validate findings. In this case, the researcher gathered information using a quantitative method (survey) and a qualitative method (interview), and within the qualitative method a heuristic approach was also employed to collect and interpret data. The *within method* of triangulation was cross checking for internal reliability of the qualitative data while the *between method* of triangulation tests the degree of external validity between the quantitative and qualitative data (Jick, 1979). The researcher was focused on multiple methods to test one framework, the CTSCL, and therefore was deemed a convergent triangulation (Turner, Cardinal, & Burton, 2017). The context of the research can also be a determinate of validity through the artifacts present in the study. An example of this could be documents such as letters to staff and parents during the wildfires, lists of students and staff affected by the fires, and newspaper articles regarding the wildfires that contained descriptive information about the context and culture of the research environment and participants (Bloomberg & Volpe, 2015). These artifacts could impact a participant's perception about the circumstances of the research, thus the importance of situating the study within a defined context established to delineate methodology and ensure validity.

Data Collection

Creswell (2008) stated, "Researchers collect data in a mixed methods study to address the research questions or hypotheses" (p. 110). The data collection process was created in a straightforward manner in order to reduce ambiguity for both the participant and the researcher.

Quantitative Data Collections

1. The purposeful sample of 42 superintendents was contacted via e-mail asked for their participation in the survey.

2. The e-mail included a link to the survey, which was secure and taken online. BUIRB's informed consent and Participant's Bill of Rights were included as attachments to the e-mail.

3. An explanation and purpose of the study as well as the survey window was provided in the e-mail.

4. All university guidelines were adhered to in order to maintain confidentiality to the participants.

5. Twenty-seven superintendents completed the survey.

Qualitative Data Collection

1. Criteria were developed to sample superintendents who completed the survey (see Table 2).

2. An e-mail was sent to the four superintendents who met the criteria to invite their participation in a 1-hour face-to-face interview. The researcher was the fifth superintendent to be interviewed.

3. The e-mail included an explanation and purpose of the study as well as the timeframe for the interviews to be conducted. Also asked were the time, date, and location convenient to the superintendent to participate in the interview.

4. The BUIRB's informed consent form, audio recording release form, and a Participant's Bill of Rights form were also sent to the superintendents.

5. A confirmation e-mail was sent to the superintendents confirming the interview time, date, and location.

6. At the interviews, the BUIRB's informed consent and audio recording release forms were signed by the superintendents.

7. The researcher used two audio-capturing devices to ensure all data were captured.

8. The interview recordings were transcribed and NVivo 12 was used to code the data.

9. Two full-time university professors, experts in qualitative research conducted and observed the researcher's interview prior to any of the other interviews taking place.

10. The researcher's interview was recorded and transcribed and coded by another superintendent not participating in the study.

11. All university guidelines were adhered to in order to maintain confidentiality to the participants.

Data Analysis

Creswell and Plano Clark (2011) stated, "Data analysis in mixed methods research consists of analyzing the quantitative data using quantitative methods and the qualitative data using qualitative methods" (p. 128). Onwuegbuzie and Combs (2010) concurred with these authors offering their own definition of what they call mixed analysis:

Mixed analysis involves the use of both quantitative and qualitative analytical

techniques within the same framework, which is guided either a priori, a

posteriori, or iteratively (representing analytical decisions that occur both prior to

the study and during the study). (p. 425)

This section explores the manner in which the researcher analyzed the quantitative and

qualitative data captured through participant surveys, interviews, and heuristic inquiry.

In order to apply convergent triangulation (at least two methods studying one framework)

to this study, a mixed methods model was adopted providing data from both quantitative

and qualitative sources. Analysis of the heuristic inquiry of this study was conducted

through the use of Moustakas's Inverted Perspectives (Table 4).

Quantitative Data Analysis

The statistical data provided by the Likert scale survey questions administered to

42 superintendents fulfilled the quantitative element of this mixed methods study. A

Likert scale was selected in order to gather the extent to which superintendents rated the

use of the CSTSL on a rating scale (Fraenkel & Wallen, 2006). The survey was designed

on a 0 to 5 scale: 0 (*not at all*), 1 (*very little*), 2 (*some*) 3 (*moderate*), 4 (*greatly*) and 5

(*always*). Participants completed 16 questions online after receiving instruction and

access to the survey. Descriptive statistics were applied to summarize the essential

characteristics of the data. The central tendency was found through the mean as well as

the percentage of response to each question (Creswell, 2008, 2014). Once the

quantitative analysis was completed, the researcher then examined the frequency of

responses to each survey question by critical task and their mean score ranking. This

examination allowed the researcher to bring forth statistical descriptions of the extent to which superintendents' actions connected with the CTSCL framework.

Qualitative Data Analysis

The goal of the qualitative aspect of this study was to organize the data in order to discover themes and patterns. Ultimately, these themes allow the researcher to understand and interpret relationships emerging among categories (McMillan & Schumacher, 2010). The researcher used coding as a way of organizing the data. Coding allows researchers to identify, name, and categorize data (Corbin & Strauss, 2008). Once interviews were conducted and recorded, the researcher transcribed the data uploaded into the NVIVO12 software. The ability to code a vast amount of data using NVIVO 12 allowed for the themes to more accurately reflect the depth of the interview data. Themes that emerged from the interview data provided the researcher with compelling findings from which to draw conclusions. Contributing to these findings were the heuristic inquiry and the process of inverted perspective utilized by the researcher during her interview and also in the interviews of the other four superintendents. In addition, the researcher's interview responses were coded by another superintendent and then compared to the coding conducted by the researcher. This superintendent was not involved as a participant in the study and possesses a doctoral degree in organizational leadership.

<div align="center">

Limitations

</div>

Limitations refer to the conditions that a researcher is unable to control and can limit the ability to generalize a study's findings (Roberts, 2010). There were limitations on both the qualitative and quantitative instruments used in this study. Limitations occurred in this study with the instruments, the sample size, and geography.

Instruments

The quantitative instrument, the survey, was administered to 42 superintendents whose results depended on their understanding of the CTSCL as it related to their practices during the wildfires. The researcher could not control the superintendents' ability to use an online survey nor the electronic device they used. With regard to the qualitative instrument, the limitations revolved around the researcher as not only an instrument of the research but also a participant in the research. Precautions were taken to reduce researcher bias though use of the Inverted Perspectives (Table 4); however, assumptions occur even with provisions in place.

Sample Size

The sample size was also a limitation of this study. There are 1,026 superintendents in California, and 42 led districts impacted by a wildfire in 2017-2018 that is on the CAL FIRE top 20 list. Of the 42 superintendents, 27 completed the survey. Five of the 42 superintendents are no longer superintendent in the fire impacted district. Ten superintendents did not respond to the researcher after repeated attempts to contact them by e-mail and telephone. Five of the 27 superintendents were interviewed for this study using a set of criteria for selection (Table 2). According to Creswell (1998), a sample size of five to 25 in qualitative study is recommended for qualitative analysis to be conducted since most or all of the experiences could be obtained with a sample size in this range. These sample sizes were appropriate for this mixed methods heuristic inquiry design and yielded important findings; however, their size may limit the ability to generalize findings to a larger population.

Geography

The final limitation was the geography of the study's population. The study was delimited to California. Limiting the study to superintendents only in California could have limited the research since experiences of superintendents throughout the nation may have been different. The study was also delimited to wildfires in California during the 2017-2018 school years. Limiting the study to this timeframe also limited the regions of California that experienced devastating wildfires in prior years. The geographical limitation was beneficial to the study since face-to-face interviews could be conducted with the five California superintendents.

Summary

Chapter III discussed the methodological elements of this mixed methods heuristic study. A review of the purpose statement and research questions was provided to show alignment of this study to the methodology. The research's design, population, sample, and instrumentation were discussed; elements of validity and reliability were also covered. Data collection and analysis procedures for the interviews and surveys were explained with detail. The use of a heuristic inquiry methodology and its essential concepts was also provided since it is not a widely used research method in the Brandman University doctoral program. The accommodation to the interview process because of the researcher being a part of the study was also presented. Finally, the limitations of this study were outlined.

CHAPTER IV: RESEARCH, DATA COLLECTION, AND FINDINGS

Overview

Chapter I provided the background, significance, and organization of the study. Chapter II created the foundation for this study through the literature as it pertained to leadership during a crisis, strategic leadership tasks during a crisis, and an overview of traditional and contemporary crisis management frameworks. Chapter III provided a review of the purpose statement and research questions as well as the research design, population, sample, instrumentation, and data collection process for this study of crisis leadership and management of superintendents during a crisis. This chapter again provides the purpose of the study and the research question but also elaborates on the data collection process as well as a description of the study participants. A synthesis of the research findings relative to the research questions and the identification of themes and patterns are presented. The chapter concludes with a summary of the findings.

Purpose Statement

The purpose of this mixed methods heuristic research study was to discover how school superintendents described their crisis leadership and management experiences during the 2017-2018 wildfires in California through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework of sense making, meaning making, decision-making and coordination, learning, accounting (Boin et al., 2017). Additionally, this study determined the extent to which school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership Framework.

Research Questions

1. To what extent did school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership Framework (sense making, meaning making, decision-making and coordination, learning, accounting) during the 2017-2018 California wildfires?

2. How do school superintendents describe their crisis leadership and management experiences during the 2017-2018 California wildfires through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting)?

Research Methods and Data Collection Procedures

The research method used in this study was an explanatory, mixed methods heuristic study that utilized a survey instrument to gather quantitative data from a sample of 42 school superintendents who led their district through a wildfire crisis in California during 2017-2018 and a qualitative sample of five school superintendents selected from the quantitative sample who participated in face-to-face interviews. A survey was developed and administered through SurveyMonkey, a secure online platform that is password protected. Interviews were conducted with five superintendents, including the researcher who is also a superintendent. Each interview was recorded, transcribed, and coded. Precautions were taken with the researcher's interview to ensure fidelity to the process and the questions. Two full-time university professors conducted the interview and observed the interview process of the researcher.

Survey Data Collection

A survey was developed and then administered through the password protected and online platform, SurveyMonkey (www.surveymonkey.com). The survey was sent to 42 superintendents who were identified from the California Department of Forestry and Fire Protection (CAL FIRE) statistics of the 20 largest, most destructive, and deadliest wildfires in California in 2017-2018 and the school districts within each of those wildfire areas. These 42 superintendents received an introductory letter and e-mail with an explanation of the purpose of the study and the importance of their participation as leaders who led their district through a wildfire crisis. Twenty-seven superintendents responded to the survey, five superintendents were no longer in the district where the wildfire occurred, and 10 superintendents chose not to participate.

An introduction in the survey provided an overview of the Five Critical Tasks of Strategic Crisis Leadership (CTSCL) framework (sense making, meaning making, decision-making, and coordination, learning, accountability). The design of the questions was to determine the extent they used the CTSCL framework in a statistical format. The questions in the survey were derived from the Executive Tasks Crisis Management Assessment (Boin et al., 2013) and are from the same seminal authors of the CTSCL. The Executive Tasks Crisis Management Assessment was developed to assess leadership performance during a crisis or disaster and utilizes the CTSCL framework to assess a leader's performance during a crisis. The survey was created to address Research Question 1 and indicate general tendencies of practice in descriptive statistical data.

Interview Data Collection

Five superintendents were interviewed in a face-to-face setting with a series of scripted open-ended questions using the CTSCL framework as the context. The researcher gathered statistical information from the quantitative sample of superintendents and developed criteria to narrow to five superintendents who would be interviewed. The criteria were based on superintendents who faced the most significant impacts to their school districts during the 2017-2018 California wildfires. These significant impacts included deaths, student and staff home loss, school property damage or destruction, and school closure for 5 days or more (Table 2, reproduced here for convenience).

Table 2

Criteria for Sampling of Superintendents Interviewed

Criteria	Supt. 1	Supt. 2	Supt. 3	Supt. 4	Supt. 5
Cal Fire Top 20 List	X	X	X	X	X
Wildfire 2017-18	X	X	X	X	X
Damaged or destroyed schools	X	X	X	X	X
Closed school 5 days or more	X	X	X	X	X
Lives lost	X	X	X	X	X
Student homes loss	X	X	X	X	X
Employee homes loss	X	X	X	X	X
Completed survey	X	X	X	X	X

The nature of a heuristic study allows the researcher to be a part of the study; thus, interviews were conducted with four superintendents and the researcher (also a superintendent). Each of the five interviews was recorded to ensure that participant

comments were accurate. The researcher, given the nature of the heuristic research design, was interviewed first by a full-time university professor and expert in mixed methods studies. A second full-time university professor and expert in qualitative research observed the researcher's interview to ensure fidelity to the interview process and questions. Before commencing the interviews, the informed consent form (Appendix G: Consent Form) was read and signed, and the participant's bill of rights (see Appendix H: Research Participant's Bill of Rights) was read and provided to each interview participant. The audio-recording release form was also presented to each participant for his or her signature (see Appendix I: Audio Release Form).

The qualitative data collected were the recorded responses of five superintendents who led their districts through the California wildfires in 2017-2018 to scripted and open-ended interview questions about their experiences as it pertains to the CTSCL framework. The superintendents' responses were transcribed and then coded to determine what themes and patterns emerged. The NVivo 12 software was used to code the transcribed data from which themes could be identified. The interviews addressed Research Question 2 and emergent themes and patterns that triangulate with the descriptive statistical data from the survey to derive relevant and meaningful findings.

Population

The population of this research study was 1,026 public school superintendents in California. A school superintendent is the chief executive officer (CEO) of a school district and sets the tone and direction while at the same time responding to the competing interests of the board of trustees, administrators, teachers, parents, students, and the community. The superintendent implements the board of trustees'

vision by making the day-to-day decisions about educational programs, allocation of resources, staffing, and facilities.

The target population in this study was superintendents in California who had led districts through a crisis involving wildfires. This list of superintendents was derived from the CAL FIRE statistics of the 20 largest, most destructive, and deadliest wildfires in California and the school districts within each of those wildfire listings (see Figure 2, reproduced here for convenience). The oldest of these wildfires dated back to 1923, and the most recent occurred in November of 2018 (CAL FIRE, 2018). More than 300 school districts have been impacted by a wildfire dating back to 1923 and the city of Berkeley fires in Alameda County.
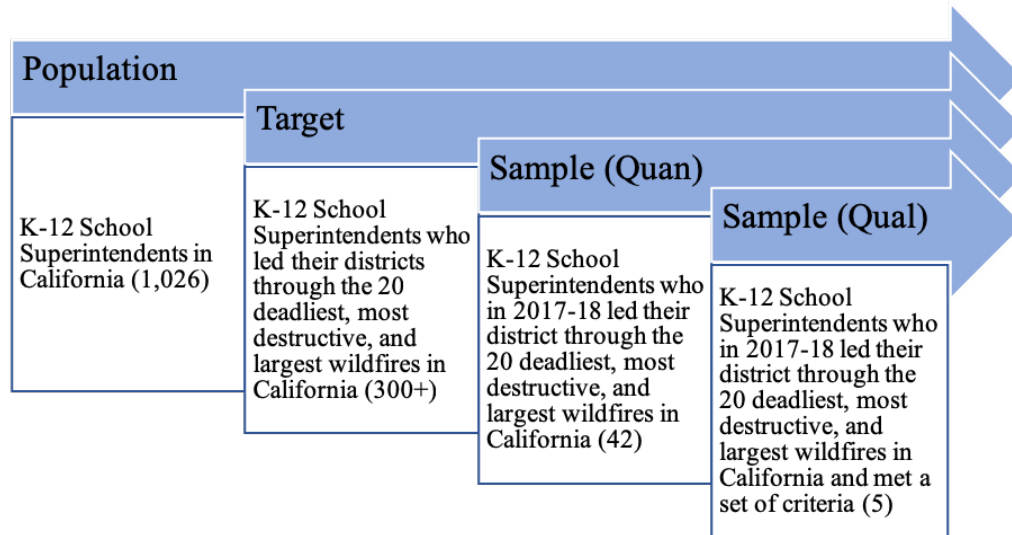
Figure 2. Population, target populations, quantitative and qualitative sample.

Quantitative Sample

A sample in a quantitative study is defined as a group of participants from whom data are collected (McMillan & Schumacher, 2010). The quantitative sample in this

study was the superintendents from the target population who led districts through a wildfire crisis and whose districts were within the areas on the CAL FIRE list of the 20 most destructive, deadliest, and largest wildfires but only those who did so in 2017-2018. A quantitative sample of 42 superintendents was identified from the target population and received an introductory letter and e-mail with an explanation of the purpose of the study and the importance of their participation as leaders who led their district through a wildfire crisis.

Qualitative Sample

Of the 42 superintendents in the quantitative sample, 27 responded to the survey. The qualitative sample of five superintendents was selected from these 27 respondents. In addition to completing the survey, the five superintendents making up the qualitative sample also met criteria of having damaged or destroyed schools, school closure for more than 5 days, a loss of lives, and a loss of student and employee homes (Table 2). A consideration used to narrow the population to five superintendents who experienced the most recent wildfire crises in 2017-2018 was the amount of time passed since the wildfire experience. The research has demonstrated that distortions in memory can occur over time and increase with age and thus the decision to focus on wildfires in 2017-2018 (Hirst et al., 2009; Lacy & Stark, 2013). The 2017-2018 California wildfires included in this study are the Camp fire in Butte County, Redwood Valley fire in Mendocino County, Thomas fire in Ventura County, Atlas fire in Napa County, and Tubbs and Nuns fires in Sonoma County.

Demographic Data

This mixed methods heuristic study surveyed 42 and interviewed five superintendents selected from a target population by using a set of criteria. For the quantitative sample, the criteria were the CAL FIRE list of the 20 most destructive, deadliest, and largest wildfires in 2017-2018 (Appendices A, B, and C; Table 3, reproduced here for convenience). The qualitative sample of five superintendents who also met the additional criteria of damaged or destroyed schools, closed school for more than 5 days, a loss of lives, and a loss of student and employee homes (Table 2). The five superintendents who were interviewed ranged in age from 40 to 60 years old and included three females and two males. The school district enrollment for each of the superintendents ranged from 4,200 to 18,000 students and served kindergarten through Grade 12. Rural, suburban and urban school districts were all represented in this study. Table 6 represents the demographic information of the superintendents who participated in the interviews.

Table 6

Demographics of Superintendents Interviewed

	Gender	Age	District enrollment	Grades served	District setting
Superintendent 1	F	50+	4,200	K-12	Rural
Superintendent 2	F	50+	16,400	K-12	Suburban/urban
Superintendent 3	F	40+	6,600	K-12	Rural
Superintendent 4	M	40+	15,000	K-12	Urban
Superintendent 5	M	60+	18,000	K-12	Suburban

Table 3

Cal Fire List of 2017-2018 Wildfires and the Associated School Districts

School District	Wildfire	County
Fairfield-Suisun	Atlas Fires	Solano
Travis	Atlas Fires	Solano
Vacaville	Atlas Fires	Solano
Vallejo	Atlas Fires	Solano
Paradise	Camp Fire	Butte
Redding School	Carr Fire	Butte
Gateway Unified	Carr Fire	Butte
Grant Elementary School	Carr Fire	Butte
Upper Lake	Mendocino Complex	Lake
Lucerne	Mendocino Complex	Lake
Lakeport	Mendocino Complex	Lake
Konocti	Mendocino Complex	Lake
Kelseyville	Mendocino Complex	Lake
Middletown	Mendocino Complex	Lake
Napa	Nuns/Atlas Fire	Napa/Sonoma
Ukiah	Redwood Valley	Mendocino
Geyserville	Redwood Valley	Mendocino
Willits	Redwood Valley	Mendocino
Fillmore	Thomas Fire	Ventura
Ventura	Thomas Fire	Ventura
Santa Paula	Thomas Fire	Ventura
Ojai	Thomas Fire	Ventura
Oxnard	Thomas Fire	Ventura
Santa Barbara	Thomas Fire	Santa Barbara
Montecito	Thomas Fire	Santa Barbara
Goleta	Thomas Fire	Santa Barbara
Carpenteria	Thomas Fire	Santa Barbara
Wright	Tubbs Fire	Sonoma
Piner Olivet	Tubbs Fire	Sonoma
Mark West	Tubbs Fire	Sonoma
Bennett Valley	Tubbs Fire	Sonoma
Bellevue	Tubbs Fire	Sonoma
Rincon Valley Unified	Tubbs Fire	Sonoma
Roseland	Tubbs Fire	Sonoma
Calistoga	Tubbs Fire	Sonoma
St. Helena	Tubbs Fire	Sonoma
Kentwood	Tubbs/Nuns Fire	Sonoma/Napa
Santa Rosa City Schools	Tubbs/Nuns Fire	Sonoma/Napa
Las Virgenes	Woosley	Ventura
Conejo Valley	Woosley	Ventura
Oak Park	Woosley	Ventura
Santa Monica-Malibu	Woosley	Los Angeles

Presentation and Analysis of Data

The presentation and analysis of data include the quantitative data collected in the form of a survey and the qualitative data collected through face-to-face interviews with five superintendents. The analysis of the data is presented using the research questions as the frame by which findings were identified and conclusions drawn about the purpose of this study.

Data by Research Question

Results for Research Question 1

To what extent did school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting) during the 2017-2018 California wildfires?

Research Question 1 was designed to gather data from superintendents who had led their district through a California wildfire in 2017-2018. These data were specific to the extent their crisis leadership and management practices used the CTSCL framework. A Likert scale of 0 to 5 was used with 5 meaning they *always* used the CTSCL framework of sense making, decision-making and coordination, meaning making, learning, and accounting. The survey questions administered to the quantitative sample of superintendents with their ratings, number of responses, and mean scores are provided in Appendix J. Table 7 represents a summary of responses of those 27 superintendents who completed the survey. The critical tasks are ranked in order for the highest mean score of 4.02 (meaning making) to the lowest of 3.18 (sense making). When analyzing

this quantitative data, the researcher focused on the *great* and *always* responses to compare the extent to which superintendents used each of five critical tasks.

Table 8 provides a summary of the *great* and *always* responses aggregated as a percentage and the total number of responses of *great* and *always* for the survey questions. The number of questions addressing each of the critical tasks is also provided along with the mean scores.

Meaning making. Meaning making is defined as a critical task in this study as offering a situational definition and narrative of the crisis that is convincing, helpful, and inspiring to citizens and responders, thereby instilling trust in the leader's decisions and management of the crisis (Boin et al., 2008). Of the five critical tasks, meaning making had the highest overall ranking of 4.02. Two questions generated responses for meaning making and had the second and third highest scores of all 16 questions indicating that meaning making was the most significant task of the five examined in this study (Appendix J).

The first meaning making survey question asked the extent to which superintendents offered a clear interpretation of the crisis and explained how they intended to lead the school district out of the fire crisis and had a mean score of 4.09 (Table 9). This question also elicited a *great* and *always* response of 83.7%. Another question within the meaning making task asked to what extent superintendents cooperated with communication professionals to ensure they had the timely and correct information for dissemination to the public and scored a 3.95 and a *great* and *always* response of 81%.

Table 7

Survey of Superintendents: Extent to Which the Five Critical Tasks for Strategic Crisis Leadership Were Employed

Critical Task	0 Not at all		1 Very little		2 Some		3 Moderate		4 Great		5 Always		Total	Mean
	%	N	&	N	%	N	%	N	%	N	%	N		
Meaning making	0	0	4.66%	2	9.52%	2	6.93%	3	51.09%	22	32.76%	14	43	4.02
Accountability	0	0	0	0	13.64%	6	13.64%	6	54.55%	24	18.19%	8	44	3.78
Decision-making & coordination	4.66%	2	4.60%	4	5.64%	5	18.40%	26	56.58%	73	16.37%	24	65	3.74
Learning	13.64%	3	11.34%	5	12.50%	11	23.48%	20	32.09%	29	29.98%	20	88	3.45
Sense making	4.55%	2	9.09%	4	11.37%	5	22.7%3	10	43.18%	19	9.10%	4	44	3.18

Table 8

Summary of Survey Responses for the Two Highest Ratings

Critical Task	No. Questions	4 Great		5 Always		Aggregate %	Total N	Mean
		%	N	%	N			
Meaning making	2	51.09%	22	32.76%	14	83.70%	36	4.02
Accountability	2	54.55%	24	18.19%	8	73.45%	32	3.78
Decision-making & coordination	6	56.58%	73	16.37%	24	72.95%	97	3.74
Learning	4	32.09%	29	29.98%	20	62.07%	49	3.45
Sense making	2	43.18%	19	9.10%	4	52.28%	23	3.18

Accounting. Accounting refers to the explanation in a public forum about what was done to prevent and manage the crisis and why, given that returning to a sense of normalcy requires leaders to account for decisions and actions during and after the crisis (Boin et al., 2008). The survey questions addressing the task of accounting had the second highest overall mean out of five with a score of 3.78 with 73.45% of superintendents rating their use *great* and *always* (Table 7). Two questions represented the task of accounting on the survey. The first asked superintendents to what extent they presented a transparent and constructive account of their (in)actions before and after the crisis. The second question asked to what extent other public leaders presented a transparent and constructive account of their (in)actions before and after the crisis.

When comparing the data between the two questions addressing the task of accounting, the public leaders were rated at 63.6% *great* and *always* while the superintendents rated themselves at 81.8% *great* and *always* pertaining to the extent transparent and constructive accounts were presented (Table 10). Public leaders refer to leaders in the community, for instance, the city manager, county administrator, or FEMA director. A significant gap of 18.2% between responses regarding public leaders and superintendents was identified. These results indicate the superintendents were able to account for their actions and decisions with transparent and open communication while the public leaders were not perceived to have operated in the same manner.

Decision-making and coordination. Decision-making and coordination are about making critical calls on strategic dilemmas and orchestrating a coherent response to those implemented decisions. Risks and opportunities are at the core of these decisions with policies, politics, and ethical and personal ramifications to be considered when

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Table 9

Survey of Superintendent Responses to Individual Question for Meaning Making

Critical task	Survey question													
Meaning making	To what extent did you offer a clear interpretation of the crisis and explain how you intended to lead the school district out of it?													
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	4.55%	1	0.00%	0	9.09%	2	54.55%	12	31.82%	7	22	4.09
Meaning making	To what extent did you actively cooperate with communications professionals to ensure they had timely and correct information for dissemination to the public?													
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	4.76%	1	9.52%	2	4.76%	1	47.62%	10	33.33%	7	22	3.95

Table 10

Survey of Superintendent Responses to Individual Question for Accounting

Critical task	Survey question													
Accounting	To what extent did public leaders try to present a transparent and constructive account of their (in)actions before and during the crisis?													
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	0.00%	0	13.64%	3	22.73%	5	40.91%	9	22.73%	5	22	3.73
Accounting	To what extent did you present a transparent and constructive account of your (in)actions before and during the crisis?													
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	0.00%	0	13.64%	3	4.55%	1	68.18%	15	13.64%	3	22	3.82

decisions are made and implemented (Boin et al., 2008). Survey questions representing the decision-making and coordination task were the third overall mean of the five tasks with a mean of 3.74 and was only .03 points less than the accounting task mean of 3.78 (Tables 7 and 8). The question of the extent to which carefully deliberated decisions were made about the fire impact had a mean of 4.0 while two other questions within the decision-making and coordination task asked to what extent the superintendent actively monitored the state of critical (life-sustaining) systems and the connections between them and to what extent the superintendent accessed expertise concerning these critical (life-sustaining) systems and had means of 3.82 and 3.73 and a rating of *great* and *always* of 72.7% and 72.7% (Table 11). This gap between mean indicates that superintendents were more apt to make decisions than to monitor or request assistance for critical systems. The term life-sustaining systems may have been unfamiliar and therefore caused a lower rating.

Learning. Learning in this context is the purposeful efforts to reexamine, reassess, and recalibrate existing and proposed beliefs, policies, and organizational structures (Boin et al., 2008). The task of learning was the fourth overall mean of the five tasks as ranked with a mean of 3.45 and a rating of *great* and *always* of 62.1% (Tables 7 and 8). Four questions made up this overall mean and rating and represent the extent to which superintendents reflected on chosen courses of action, encouraged and tolerated negative feedback, recorded crisis management proceedings, and actively involved themselves in crisis preparations. An individual mean of 4.14 in the learning task was the highest individual mean of all the questions of the survey and asked to what extent the

Table 11

Survey of Superintendent Responses to Individual Question for Decision-Making and Coordination

Critical task	Survey question												
Decision-making & coordination	To what extent did you carefully deliberate which decisions should be made about the fire impact?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	4.76%	1	0.00%	0	4.76%	1	4.76%	1	52.38%	11	33.33%	7	21	4.00
Decision-making & coordination	To what extent were the decisions made after some form of due process?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	4.55%	1	0.00%	0	4.55%	1	22.73%	5	63.64%	14	4.55%	1	22	3.55
Decision-making & coordination	To what extent did you monitor and assess forms of vertical and horizontal cooperation? (Vertical & horizontal cooperation refers to cooperation among a variety of organizations.)												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	4.76%	1	0.00%	0	28.57%	6	52.38%	11	14.29%	3	21	3.71
Decision-making & coordination	To what extent did you facilitate effective cooperation and intervene where cooperation was lacking or dysfunctional?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	4.55%	1	9.09%	2	22.73%	5	54.55%	12	9.09%	2	22	3.55
Decision-making & coordination	To what extent did you actively monitor the state of critical (life-sustaining) systems and the connections between them?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	4.55%	1	4.55%	1	18.18%	4	50.00%	11	22.73%	5	22	3.82
Decision-making & coordination	To what extent did you access expertise with regard to these critical (life-sustaining) systems?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	4.55%	1	0.00%	0	22.73%	5	63.64%	14	9.09%	2	22	3.73

superintendents involved themselves in crisis preparations (Table 12). This response also

had an individual rating of *great* and *always* of 81.8%. Learning also had the lowest

mean of 2.32 for the response to what extent superintendents recorded crisis management

proceedings to facilitate learning by outsiders. The ratings of great and always made up

only 22.7% of responses while, *not at all* and *very little* had 31.8%, and *some* and

moderate had the most significant response of 45.5% (Table 12). The data indicate

superintendents are very involved in preparing for traditional crisis preparedness, and the

lower ratings on the other questions with this task indicate less preparedness in the

contemporary crisis preparedness.

Sense making. Sense making is defined as the collection and processing of

information that helps crisis leaders detect an emerging crisis and understand the

significance of what is happening to make sense of the situation and strategically assess

and plan for decision-making (Boin et al. 2017). Of the five tasks, sense making had the

lowest overall mean of 3.18 and percentage of responses of 52.3% (Tables 7 and 8). The

task of sense making in the survey comprised two questions that addressed the extent

superintendents created conditions that facilitated a shared early recognition of a threat

caused by the fire and the extent superintendents created, facilitated, and rehearsed a

sense making method during the fires. The response percentage at *great* and *always* was

only 54.44% and 50% for each of the questions and supporting the lowest mean rating of

the five critical tasks (Table 13). The data from these two questions indicate the critical

task of sense making, as it is defined in this study, is not well understood or practiced. In

addition, the wildfires moved so quickly to a crisis stage that early actions or recognition

were perceived to be impractical by the superintendents.

Table 12

Survey of Superintendent Responses to Individual Question for Learning

Critical task	Survey question												
Learning	To what extent did you allow for reflection on the effects of chosen courses of action?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	0.00%	0	9.09%	2	31.82%	7	36.36%	8	22.73%	5	22	3.73
Learning	To what extent did you encourage and tolerate negative feedback?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	4.55%	1	18.18%	4	18.18%	4	31.82%	7	27.27%	6	22	3.59
Learning	To what extent did you record crisis management proceedings to facilitate learning by outsiders?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	13.64%	3	18.18%	4	18.18%	4	27.27%	6	18.18%	4	4.55%	1	22	2.32
Learning	To what extent did you actively involve yourself in crisis preparations?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	0.00%	0	0.00%	0	4.55%	1	13.64%	3	45.45%	10	36.36%	8	22	4.14

Table 13

Survey of Superintendent Responses to Individual Question for Sense Making

Critical task	Survey question												
Sense making	To what extent did you create conditions that facilitated a shared early recognition of a threat caused by the fires?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	4.55%	1	9.09%	2	9.09%	2	22.73%	5	40.91%	9	13.64%	3	22	3.27
Sense making	To what extent did you create, facilitate, and rehearse a sensemaking method during the fires?												
	Not at all		Very little		Some		Moderate		Great		Always			
	%	N	%	N	%	N	%	N	%	N	%	N	Total	Mean
	4.55%	1	9.09%	2	13.64%	3	22.73%	5	45.45%	10	4.55%	1	22	3.09

Results for Research Question 2

How do school superintendents describe their crisis leadership and management experiences during the 2017-2018 California wildfires through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting)?

Research Question 2 was developed to collect data on the experiences of five superintendents who led their district through a California wildfire crisis in 2017-2018 through the lens of the CTSCL framework. A series of open-ended questions in a face-to-face interview was conducted and included a review of the CTSCL framework. Each superintendent was also provided the questions to be used during the interview. The researcher's interview was conducted by a full-time university professor and observed for the process by another full-time professor and expert in qualitative research.

The questions were designed to allow for superintendents to share their experiences as they related to the critical tasks and deeply self-reflect on their actions and detailed examples of their practices and impact during a wildfire crisis. Themes naturally emerged from the comprehensive data collected, and the alignment to the CTSCL framework was a natural process as a result (Table 14).

Decision-making and coordination. Of the five critical tasks, decision-making and coordination had the most frequent responses of 125 and represented 29% of the total of the 436 responses as coded by the researcher when the data were analyzed as represented in the following (Table 15; Figure 3).

Table 14

Major Interview Themes Through the Lens of the Five Critical Tasks for Strategic Crisis Leadership

Major theme	Critical task	Frequency of responses	Percentage of responses
Crisis preparedness for social-political construct and strategies	Decision-making	30	14.00%
Only tactical and operational crisis responses is insufficient	Decision-making	28	13.00%
Relationships that crosscut jurisdictions and expertise were essential	Decision-making	25	12.00%
Multiple modes of district communicating the narrative	Meaning making	21	10.00%
Flexibility and common sense take precedence	Meaning making	19	9.00%
Physical safety and social emotional safety were the priority	Sense making	18	8.50%
Lack of training for the social political nature of a crisis	Learning	17	8.00%
Superintendents are the face, voice, and advocate for the district	Sense making	17	8.00%
A dependable internal team is necessary	Accounting	14	6.60%
Providing information when all communication systems fail	Learning	12	5.70%
Informal and formal after-action review	Accounting	11	5.20%
Total		212	100.00%

Table 15

Frequency of Responses Associated to the Five Critical Tasks for Strategic Crisis Leadership Framework

Critical task	Frequency of responses	Percentages of responses
Decision-making and coordination	125	29%
Meaning making	109	25%
Sense making	80	18%
Learning	74	17%
Accounting	48	11%
Total	436	100%

Percent of Responses to the Five Critical Tasks for Crisis Leadership Framework

- Decision Making and Coordination — 29%
- Meaning Making — 25%
- Sense Making — 18%
- Learning — 17%
- Accounting — 11%
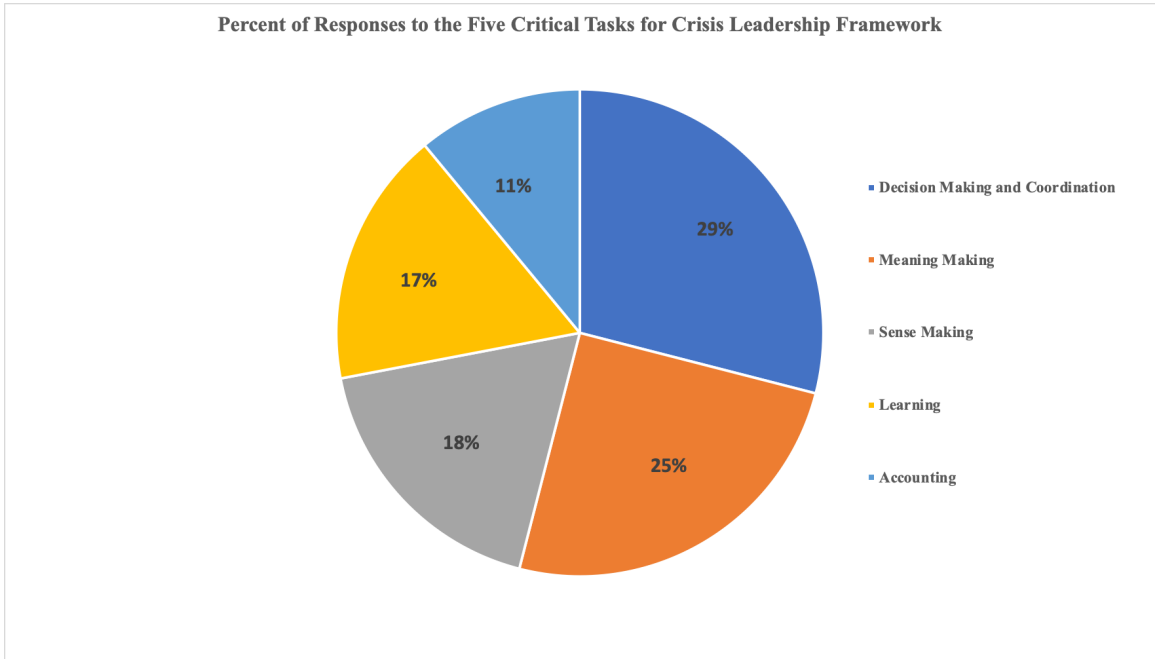
Figure 3. Percentage of responses to the Five Critical Tasks for Crisis Leadership framework.

Three major themes emerged from the coded interview responses within the decision-making and coordination task. These three themes also had the most frequent responses of the 212 total responses. The most frequent theme that emerged from the interview data was that crisis preparedness is more than tactical and operational readiness—it is also a need to be prepared for the social-political nature of a crisis. The third most frequent theme was the importance of relationships with other leaders in various organizations who have the expertise a superintendent may not have or the political leverage to facilitate decision-making outside of the school district (Table 14). The superintendents' responses illustrate the emergence of these three major themes as the most significant of the CTSCL framework.

Decision-Making and Coordination

The three themes with the most frequent responses are substantiated by each of the superintendent's responses. The superintendents provided reflective responses about

their strategies for making decisions and then coordinating those decisions with the assistance of a social-political network. The high frequency of response and the experiences provided by the superintendents illustrate very clearly the impact of the social political environment of a crisis. The enormity of the crisis is matched by the number of agencies, organizations, public leaders, and bureaucracy dealt with while ensuring the school community's well-being. Larger districts bear the brunt of being the lead for many decisions in the school community at large since the impact is great for the smaller feeder districts. The superintendents leading smaller districts also feel the impact because their decisions are made in isolation; the relationship with the local public agencies and public leaders is critical. These complex social-political environments must be planned for with social-political communication drills much like planning for an earthquake drill.

The three highest frequency themes are as follows:

1. Crisis preparedness for social political construct and strategies

2. Only tactical and operational crisis responses is insufficient

3. Relationships that crosscut jurisdictions and expertise were essential

Superintendent 1 stated, "I became friends with the head of FEMA, the head of Cal OES and everything. Yes, and when you process with people who do this for a living, we have business, let's do it." Superintendent 1 also had another response that illustrated this theme when she shared,

At the last minute, the town tried to stop it [a permit for a building to house the high school students] because we were out at an airport, we went to the

governor's office really late one day and the governor signed it and so the town's not happy with us right now, all the city.

Superintendent 2 shared her view on the social-political nature of a crisis, "half the community is heavily affected [by the fires], but the other half isn't, that's a complex, social, political storm that has to be navigated." She also stated, "Because no matter how hard we try to implement the logistics, if we don't have the social-political network communication relationship, the logistical side won't be implemented as well or as quickly or as with fidelity or as deeply."

Superintendent 3 spoke to the importance of establishing connections far before a crisis happens:

> We have great connections with people. Personal connections and professional, so it's pretty easy. I'd say that our relationship with the Police Department is super tight. We've got a great relationship with our city manager, and then our CEO of our county was very involved with things.

Superintendent 4 spoke to the implications with feeder districts and socioeconomically challenged families by stating, "Because we're the big district in the area and we have four partner districts, K-6, whatever decision I made, I knew we would politically impact them." Another response by Superintendent 4 aligned to the task and theme was "people with money or family elsewhere, they got out, and all of our poor families were huddled in town. They were losing wages because they're all working class people. It was brutal on them."

Superintendent 5 stressed the importance of advocating for the district and said, "I got invited to a big statewide meeting where they brought in the state people, FEMA, the

governor's people. It was helpful (attending the meeting) because after week one and 4 days the electricity and cell service was back on." Superintendent 5 also stated,

> I think part of it is having good relationships before a crisis happen, so get to know who your county supervisors are, get to know who the CEO of the county is, get to know your mayor, get to know your police chief, the city managers.

Meaning making

The critical task of meaning making garnered the second most frequent responses and major themes. Major Themes 4 and 5 emerged from responses to this task and demonstrate the significance of meaning making. Major Theme 4 states the district must communicate the narrative of the crisis leadership and management taking place through multiple modalities. Major Theme 5 asserts that flexibility and common sense by leaders take precedence (Table 14). Meaning making is providing the school community with a convincing, helpful, and inspiring narrative to instill trust in the superintendent's decisions (Boin et al., 2008).

Superintendents provided quick, accurate, and reassuring messages through several modes of communication (social media, auto dialer, e-mail, text messaging, phone trees, fliers, bilingual staff, translations) despite the conditions of the utilities needed to carry these messages. Each superintendent described his or her relentless pursuit to ensure the students and staff were safe and informed about school closures, restoration, and reopening. Even if the messages were not popular with some in their school communities, the superintendents want all decisions to be transparent and based on common sense and flexibility.

An example of communication, flexibility, and common sense is illustrated by Superintendent 4 but was practiced by all five superintendents, paying staff while schools were closed. By statute, only certificated staff are paid during a school close, but the five superintendents also paid their classified staff when schools were closed demonstrating flexibility, the use of common sense, and humanity.

Superintendent 1 believed the importance of communicating accurate information was critical for her school community and shared, "You're not going to hear speculation from me. If I don't know it, I'm not going to say it, because there was speculation the high school burned down and then it didn't burn down."

Superintendent 2 shared how messaging was conducted through several types of media:

> We put it (communications) on our website, we went to the radio station because I also have developed a relationship with a radio station so I can call the news director and say look this is what's happening. The local newspaper and our Twitter, Facebook and Instagram feed.

Superintendent 3 wanted her rural community to have the most accurate and timely information possible and said,

> I think we did a lot of communication. And then after that, we communicated just about the fire itself, and what we knew was happening through our Facebook page because we have so many followers, we were linking the sheriff's statement to our Facebook.

Superintendent 3 decided to message to the school community with stories of others and also shared,

I really started looking for positive stories to help people heal. I mean, that's

probably the biggest thing. I asked our staff to send me all the positive stuff that's

going on, and then I would compile it and send it out.

Superintendent 4 utilized several types of communication pathways and stated,

We were sending out messages every day once we shut down schools because

people were just starved for information. I think the meaning making was that

your family is more important than your school, your education at the time, and

work. The meaning-making got even more personal when we sent the e-mail out

to all staff saying don't worry about your paycheck. We are not docking pay.

Your safety and your family is more important.

Superintendent 5 utilized a messaging system of hanging fliers on doors and

posters in high traffic areas and said, "Communication, that's our responsibility, we wait

to post things on Facebook when we're ready to communicate to parents. The worst

thing for us was someone else telling our story for us." He further supported his practice

by stating, "So every school had a parent liaison that helps communicate with parents,

especially the Spanish speaking parents. We did an English video about how we make

decisions, and the parent liaison coordinator made the same video but in Spanish."

Sense Making

The critical task of sense making had two themes and ranked sixth and eighth in

the frequency of coded responses by the superintendents. The sixth major theme affirms

physical safety and social-emotional safety are a priority while the eighth major theme

maintains superintendents are the face, voice, and advocate for the district (Table 14).

Superintendents wanted their school communities to understand the significance of what

was happening and to make sense of the situation by assuring them their well-being was the priority. Also important to the superintendents was advocating for their districts with other public agencies and leaders to strategically assess the situation and plan for decision-making. Assessment of the air, water, and soil quality is not within the qualifications of a superintendent nor is determining when utilities will be restored. However, a superintendent must advocate for the district to ensure the school district is considered when those types of decisions are being made. The following superintendent responses indicate how these themes emerged and support the critical task of sense making.

Superintendent 1 disclosed the harrowing experiences of the wildfire in her district and stated, "He said, it's gone. I said, what's gone? He said the town. I said, Phil, there is freaking no way." Superintendent 1 also shared the fear among her staff regarding two teachers, "Two of them (teachers) had written letters to their husbands saying, 'Goodbye. I can't get out,' and they had gone through flames, so they didn't think they were going to make it, but they did." She further stated, "No one's thinking yet about school, they're thinking about surviving, and they're sleeping in tents."

Superintendent 2, like the other four superintendents, was surprised at the speed and magnitude of the wildfires and said, "At the beginning, we didn't realize how much this was going to impact." Superintendent 2 stated the impact required a different criterion for safety and well-being for students and staff, and shared,

For the schools what we thought about, safe facilities, safe travel on the roads to

our facilities, to our schools. The ability to have electricity, water, and gas for

heat, and then the students, not knowing how many student and faculty were safe

and if their homes were destroyed.

Superintendent 3 emphasized the mental health of staff and students as they

prepared to open schools and shared,

When our kids come back, and our staff comes back, we want to be in the best

shape possible. If our staff members are worried about where they're living,

they're not going to be able to be there for kids. I think the biggest factor is safety

and wellness. Mental wellness. People being ready to be back.

Superintendent 4 has the support of a countywide coordinated system of

emergency services and said,

The coordination of information and decision-making (Santa Barbara Office of

Emergency Services), it was impressive. I would walk in there. They had their

act together. They were monitoring information. If anything, that's a model for

other regions to take a look at.

Superintendent 5 also shared his beliefs about schools being the core of a community and

stated, "Our schools are a place of safety, and comfort, and familiarity. Honestly, kids,

they miss their friends and being with their teacher."

Superintendent 5 also led his district through an earthquake in 2014 measuring a

6.0 magnitude and stated,

I think superintendents have a very important role in the community, and it's a

very prestigious role that sometimes is forgotten because you get into the day to

day. Part of the role of a superintendent is to speak up in these interagency

meetings and let staff do the more tactical things.

He further reiterated, "My voice mattered. Our voices matter, and I think some superintendents are a little too modest and they need to speak up. Always be polite and respectful, but we have a great voice, and we should use it."

Learning

The major themes aligned to the critical task of learning ranked by frequency of responses seventh and 10th (Table 14). Major Theme 7 emphasized the lack of training for superintendents and other school administrators on the social-political nature of crisis leadership. The 10th major theme asserts the need for communication systems within the school community when all forms of messaging fail. The superintendents were able to describe their experiences but not necessarily the critical task to which they were associated. This demonstrates a need for training in the area of contemporary crisis preparedness as opposed to only training in traditional crisis preparedness of tactical drills and evacuations. The evidence for need of contemporary crisis preparedness training was also illustrated in the superintendent responses to the decision-making and coordination task about the importance of a social-political network and communication plan.

The complete failure of utilities and then communication systems is significant on many levels. In reference to sense making, if there is no way to locate and then communicate with the school community, the opportunity to make sense of the situation is not viable. With regard to safety, inoperable communication systems create a dangerous situation if warnings about evacuation and impending danger cannot be transmitted or received. Each of these major themes was evident in the coded responses of the superintendents interviewed.

Superintendent 1 was uniquely impacted because the entire infrastructure of the town was destroyed including all communication systems and shared,

I think from the next point on what I wish we'd had was a better communication system. I really know in hindsight we will make sure somehow that a neighboring district has a way to get hold of our parents. If your communication system goes down, you need to have someone else that can get hold of parents and staff. So, the town has this system, and it went down. I never got an emergency notification from the town. It all went down so quickly.

Superintendent 2 believes emergency preparedness training for school leaders is focused on the logistics of an emergency rather than on the social, political, humanistic aspect of a crisis and shared,

We didn't do enough professional development around the social-political and emotional side of an emergency or crisis and while I can teach the technical side of being a leader to a principal how do I teach this social-emotional, emotional intelligence, social-political side of being a leader in everyday life and especially during a crisis?

Superintendent 3 immediately began to search for messaging systems after the wildfires subsided and stated,

So, we now have CrisisGo. We just purchased the program CrisisGo, and actually we can send messages through that. So, we're in the process of setting up groups. Interestingly, one of our principals is using the program, Remind. It's a texting program she's using that as a phone tree to communicate with her staff.

Superintendent 4 drew upon previous professional learning about communication and operational sustainability and shared, "I learned from a communication expert, I call it circles of communication. It's just making sure that you communicate with the inner circle first, then the next layer, and then the next layer." To further support the learning critical task and Major Theme 10, he said,

> We are starting to think about battery backup systems that can sustain communication and maybe refrigeration for a day. We're starting to look at high-end battery systems that can provide power for data centers that could last maybe a couple of days.

Superintendent 5 understood his educational community information needs and stated,

> We didn't have electricity or Internet, we actually paid for signs on all the doors, and we just had a team go out putting the signs on the front gates or the front doors, saying school is out and would start on such and such date. The other thing after we had the Internet we did to help communicate out, was we had videos. Instead of letters or e-mails, we did videos, and people watch videos. It's amazing. So, the video communication really helped.

Accounting

The major themes that emerged for the critical task of accounting were ranked ninth and 11th as evidenced by the frequency of responses by the interviewed superintendents (Table 14). Major Theme 9 described the necessity for a dependable internal team, and Major Theme 11 referred to formal and informal after-action reviews of the leadership and management of the wildfire crisis. These five superintendents

exhibited Moustakas's process of inverted perspective (self-dialogue, tacit knowing, intuition, indwelling, focusing; Table 4) as they described how they managed the crisis and in what ways they accounted for their decisions and actions during the crisis. The heuristic inquiry was initially intended for the researcher to be included in the study, but it became apparent through the interviews that the inverted perspective was visible with the other four superintendents. Each superintendent described his or her school communities to be pleased with him or her and the districts' response to the crisis, which may explain the positive public perception of the school district actions during the wildfires.

Superintendent 1 shared her thoughts as they relate an informal review of their practices during the wildfire crisis,

> To be honest, we were so the heroes because we got the kids on the buses and the bus drivers let their cars burn down and so no one questions school district. It was positive. There was like, I can't believe what this school district did. Look, they're already in a mall having school.

Superintendent 2 reflected throughout the wildfire crisis about the effectiveness of her decisions and stated,

> Accountability really begins with me, and how do we then foster that throughout our educational community. We talked about those areas where we need to improve, and we owned it and said these are the steps that we will put into place—so being very honest and open about it.

She further discussed their informal after-action review by stating,

> At the same time being very honest and open, we did do the right thing so the
> community's mindset, our school staff's mindset was a willingness to talk about
> what they could've done better, but they also talked about how they implemented
> things even prior to the fire were very beneficial.

Superintendent 3 shared that as a rural community her support in a crisis came
primarily from an internal team and stated,

> All of our cabinet and our directors met as a team to check in, so they could
> update me. We also went to all of the OES meetings, and I didn't go, but our
> maintenance director went. He's kind of in charge of our emergency response.
> He went to all of the Cal OES meetings.

Superintendent 4 shared their feedback about his leadership during the crisis and
said,

> I would say throughout the crisis all the way into January, the feedback was all
> positive, our team and our systems worked really well. I have a veteran team.
> I've been a superintendent in three districts. So, my crisis management skills
> have been honed by a lot of practice.

Superintendent 5 spoke specifically about a formal review of his strengths and
weaknesses as a leadership team during the wildfires and stated, "When it was all over,
we did an after-action review. We had an outside person facilitate it who has experience,
so he was pretty objective, and he had worked for county emergency services for 25
years." Superintendent 5 used the results of the after-action review "to examine internal

systems such as communication and feedback loops that included more stakeholders in the educational community."

Major Findings

This research study has provided rich and in-depth information about school superintendents and their crisis leadership and management experiences and presented findings that address the research questions. The major findings of this study are presented through the lens of the CTSCL framework and are collected from both the survey (quantitative) and interview (qualitative) responses of the school superintendents. Table 16 provides a comparison of the aggregate response data between the 27 superintendents surveyed and the five superintendents interviewed.

Table 16

Comparison of Frequency of Responses for the 27 Surveys and Five Interviews

27 superintendents surveyed		5 superintendents interviewed	
Critical task	Mean	Critical task	Percentage of responses
Meaning making	4.02	Decision-making & coordination	29%
Accounting	3.78	Meaning making	25%
Decision-making & coordination	3.74	Sense making	18%
Learning	3.45	Learning	17%
Sense making	3.18	Accounting	11%

This mixed methods heuristic study produced quantitative (statistical) and qualitative (themes) data that differ in the ranking of the critical tasks but are also similar in the highest rankings. Decision-making and coordination is only .04% for the second place, accounting. The similarity between the quantitative and qualitative data is meaning making and decision-making and coordination, which were the two critical tasks

utilized and experienced the most during the wildfires. Sense making rating last by mean score compared to third place in the interview responses was unexpected but can be attributed to the survey questions for sense making being narrowly focused on making sense of the wildfires through early recognition and facilitation. In the interviews, the questions pertaining to sense making could be answered with detail about experiences with making sense of the wildfire itself and not about an impeding threat such as a financial crisis.

The difference between the survey and interviews can also be attributed to the mindset of the superintendents and their beliefs and values about crisis preparedness. The survey was unable to measure whether a superintendent is steeped in traditional crisis management practices and therefore the contemporary CTSCL framework is foreign to his or her practices. The interviews provided an opportunity for the superintendents to explain their experiences in ways that demonstrated they were practicing the CTSCL but did not label it as such.

Decision-Making and Coordination

1. The social-political environment is a major factor in successful crisis leadership and management.

2. A social-political network and communication plan was informal and not a part of a crisis preparedness plan.

Meaning Making

3. Translated, timely, accurate, and honest messaging through various communication platforms was essential during the crisis.

4. Human safety and well-being were a priority during a crisis and the basis of decision-making and coordination.

Sense Making

5. Superintendents must advocate for the school community when public leaders and agencies are making decisions that will impact the school district.

6. Social justice, equity, and gender equality issues also manifest during a crisis.

Learning

7. Today, crisis preparedness plans only include traditional tactical operations, drills, evacuation plan, and communication procedures.

8. Inoperable communication systems do not allow superintendents to effectively lead and manage a crisis.

Accounting

9. Crisis preparedness plans do not include a process to collect and analyze documented after-action reviews and community feedback.

10. Assessing the strength and weakness of decisions and actions was informal and not documented.

Summary

Chapter IV presented the purpose of the study, the research questions, the research methods, and the quantitative and qualitative data collections process. The population, sample, and demographic information of five superintendents who had led their districts through the California wildfires in 2017-2018 were provided. Finally, the data collected through a mixed methods and heuristic study were presented.

The study consisted of a survey to gather quantitative data and face-to-face interviews to collect qualitative data. The quantitative data collections consisted of 27 superintendents completing an online and secure survey. Participation by a superintendent in the survey was determined by their having led their school districts through a California wildfire in 2017-2018. The qualitative data were collected in the form of face-to-face interviews with five superintendents who completed the survey but also sustained significant losses in their school districts and were closed for more than 5 days. Both the survey and interviews were developed to gather data that identified, described, and revealed the practices, policies, and experiences of superintendents in relation to the CTSCL framework (sense making, meaning making, decision-making and coordination, learning, accounting).

The quantitative data yielded the extent to which superintendents employed the five critical tasks as they led their school districts through the wildfire crisis. The six levels of extent were *not at all*, *very little*, *some*, *moderate*, *great*, and *always*. The order the tasks ranged from *always* to *not at all* were meaning making, accountability, decision-making and coordination, learning, and sense making. Research Question 1 was addressed by the survey and the quantitative data collection and analysis.

The qualitative coded data collection produced a frequency in the order of most frequent to least frequent of the five critical tasks. The order was decision-making and coordination, sense making, meaning making, learning, and accounting. With each of the five tasks, a total of 11 major themes emerged. The major themes were presented in order from most frequent to least frequent as they described the most significant patterns of experiences of the five interviewed superintendents (Table 15).

Chapter V provides the major findings and conclusions based on the analysis of the data gathered. Also included in Chapter V are the implications for actions and recommendations for further research. The researcher's concluding reflections and remarks are also presented given this mixed methods and heuristic study includes the researcher as a part of the study.

CHAPTER V: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

Overview

Chapter I provided the background, significance, and organization of the study. Chapter II created the foundation for this study through the literature as it pertained to leadership during a crisis, strategic leadership tasks during a crisis, and a historical reference for crisis management frameworks. Chapter III provided a review of the purpose statement and research questions as well as the research design, population, sample, instrumentation, and data collection process for this study of crisis leadership and management of superintendents during a crisis. Chapter IV presented the data collection process and a description of the study participants. A synthesis of the research findings relative to the research questions and the identification of themes was presented. The chapter concluded with a summary of the finding. In Chapter V a summation of the major findings is provided along with the unexpected findings and conclusions. Chapter V also includes the implications for action and further areas of research as well as the researcher's concluding remarks and reflections.

Purpose Statement

The purpose of this mixed methods heuristic research study was to discover how school superintendents described their crisis leadership and management experiences during the 2017-2018 wildfires in California through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework of sense making, meaning making, decision-making and coordination, learning, accounting (Boin et al., 2017). Additionally, this study determined the extent to which school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework.

Research Questions

1. To what extent did school superintendents identify their use of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting) during the 2017-2018 California wildfires?

2. How do school superintendents describe their crisis leadership and management experiences during the 2017-2018 California wildfires through the lens of the Five Critical Tasks of Strategic Crisis Leadership framework (sense making, meaning making, decision-making and coordination, learning, accounting)?

Research Methods and Data Collection Procedures

The research method used in this study was a nonexperimental mixed methods heuristic study that utilized an online survey instrument to gather quantitative data and face-to-face interviews to collect qualitative data. Forty-two school superintendents were identified who led their districts through the California wildfires in 2017-2018. Of the 42 superintendents, 27 individuals completed the survey (Appendix D). The survey questions were based on the Executive Tasks Crisis Management Assessment (Boin et al., 2013) and were derived from the same seminal authors of the Five Critical Tasks of Strategic Crisis Leadership (CTSCL) framework. Upon completion of the survey, a qualitative sample of superintendents was selected utilizing criteria that included loss of school days, destruction of staff and student homes, destroyed schools, a loss of life, and inclusion in the CAL FIRE list of the deadliest, most destructive, and largest wildfires in California (CAL FIRE, 2018). Five superintendents were interviewed using a series of open-ended and field-tested questions (Appendix E). In a heuristic study, the researcher

is an active participant in the study whereby the discovery of meaning and essence in a significant experience is the focus of the investigation (Douglass & Moustakas, 1985). Precautions were taken with the researcher's interview to ensure the validity of the process and the questions. Two full-time university professors conducted the interview and observed the process of the researcher's interview.

Population

The population of a research study is defined as all individuals or objects within a certain population usually having a common, binding characteristic or trait (McMillan & Schumacher, 2010). The study identified the population to be 1,026 public school superintendents in California. A school superintendent is the chief executive officer (CEO) of a school district and sets the tone and direction while at the same time responding to the competing interests of the school community as well as the community at large.

Creswell (2008) defined a target population as a group of individuals with some common defining characteristic that the researcher can identify with a list or set of names. The target population in this study is superintendents in California who have led districts through a crisis involving wildfires (see Figure 2, reproduced here for convenience). This list of superintendents was derived from the California Department of Forestry and Fire Protection (CAL FIRE) statistics of the 20 largest, most destructive, and deadliest wildfires in California and the school districts impacted by those wildfires.
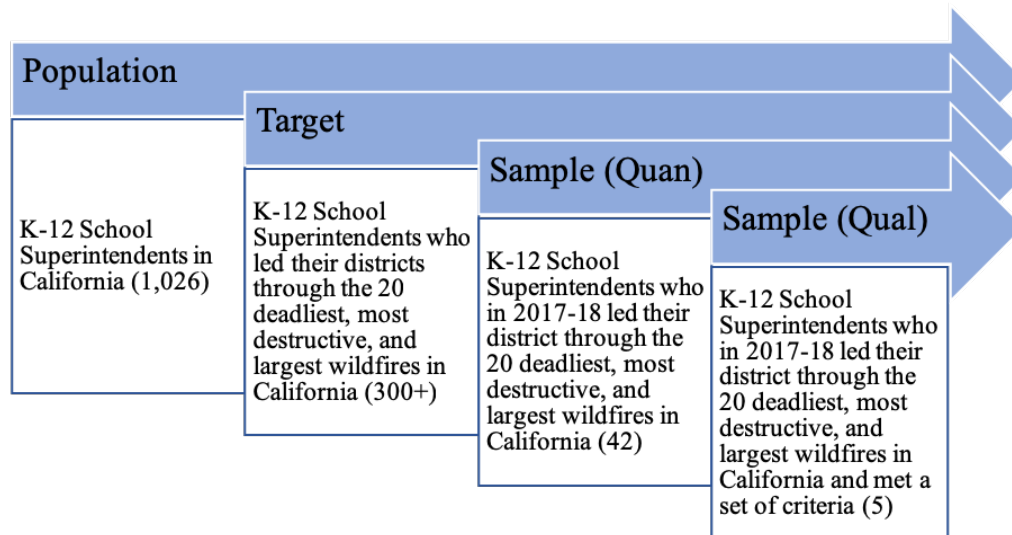
Figure 2. Population, target populations, quantitative and qualitative sample,

Sample

A sample in a research study is defined as a group of participants from whom data are collected (McMillan & Schumacher, 2010). Purposeful sampling was used by the researcher to select participants from the target population who led their school districts during the 2017-2018 wildfires (Patten, 2012). The quantitative sample of 42 superintendents received an introductory letter and e-mail with an explanation of the purpose of the study and the importance of their participation as leaders who led their district through a wildfire crisis. Of the 42 superintendents, 27 completed the online survey.

The qualitative sample of superintendents was selected from the 27 superintendents who completed the survey and met criteria that best addressed the research questions. These criteria included a loss in school days, destruction of school property, student and staff home loss, and the loss of lives (Table 2). The qualitative sample of five superintendents led school districts through the wildfires of Butte County

and the Camp fire, Mendocino County and the Redwood Valley fire, Ventura County and the Thomas fire, Napa County and the Atlas fire, and the researcher from Sonoma County and the Tubbs and Nuns fire. The face-to-face interviews used open-ended and field-tested questions based on the CTSCL framework.

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Major Findings

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Decision-Making and Coordination

  Finding 1. Social-political environment. The social-political environment is a major factor in successful crisis leadership and management. Decision-making and coordination is the most significant task identified and described in superintendents' crisis leadership. The data support this finding with a rank of 3 out of 5 tasks and a mean of 3.74 for the survey and was first out of five tasks with a response frequency of 29% for the interviews.

  Finding 2: Social-political network. A social-political network and communication plan was not a formal part of the superintendent's crisis preparedness plan. The social-political nature of a crisis was evident in seven of 11 themes and dominated four of those seven themes, a result that supports the significance of the decision-making and coordination task. This finding is also supported by the essential need for social-political decision-making and relationships to ensure schools could safely reopen and support services available for students and staff (Boin et al., 2013; Boin & Renaud, 2013; Flin, 1996; White et al., 2007). The superintendent can only make decisions regarding the school district; therefore, relationships and coordination with decision makers from other public agencies (FEMA, CAL FIRE, the Office of Emergency Services) are vital for a shared understanding of the situation as the recovery

process begins. Without this mutual aid network for communication, decision-making, coordination, and resource allocation, a sense of normalcy returning to the school and community will be delayed (Boin et al., 2013, 2017; Crowe, 2013).

Meaning Making

Finding 3: Translated, accurate, and honest communication. Translated, timely, accurate, and honest messaging through various communication platforms was essential during the wildfires. Many districts were faced with no electricity and Internet, and providing information to the school community was challenging. Social networks such as Facebook and Twitter became the mode for much of the communication. Meaning making is the second most significant task of the five critical tasks as evidenced by having the highest aggregate mean of 4.02 for the survey questions and an overall aggregate of response frequency of 25% for the interviews.

Finding 4: Human safety and well-being. Human safety and well-being were the priority for superintendents during their crisis leadership. Superintendents based their decision on the impact to the students, staff, and families in their districts. Themes revealed superintendents were flexible and used common sense while at the same time remaining visible and using their voice to advocate for the school district, students, and staff. These actions build a culture of caring that leads to trust, hope, and inspiration (Boin et al., 2017; Crowley, 2011; Kouzes & Posner, 2006). An example of reinforcing a culture of caring occurred when the five school superintendents, independent of each other, demonstrated doing the right thing by continuing to pay classified staff during school closures. By statute, classified staff can go unpaid during a school closure, but

these superintendents chose to provide classified staff relief regarding their income and respected them as employees who are an integral part of the school district.

Sense Making

Finding 5: School superintendent is the advocate for the district.

Superintendents advocate for their school community when public leaders and agencies are making decisions that will impact the school district. A superintendent's crisis leadership must include being a part of the social-political body that makes decisions about supports and services that will impact the school district. Utility companies, CAL FIRE, FEMA, Cal OES, County OES, City OES, and the Air Resources Board are some of the agencies involved in the decision-making during a crisis (Boin & Renaud, 2013; J. B. Houston et al., 2015; Skavdahl, 2010).

Superintendents who are unfamiliar with advocating in this social-political arena may not have an understanding of the critical task of sense making. As a result, a difference between the responses of the 27 superintendents completing the survey and the five superintendents who were interviewed can be attributed to the survey questions asking the extent to which there was a shared early recognition of a threat of the fires; this was challenging given that the crisis was an unexpected and uncontrolled wildfire. In the case of the wildfire crisis, human safety and well-being was the priority as was advocating on behalf of the district's students and families for their right to a safe environment and access to emotional support (McNulty et al., 2018). An aggregate of the survey responses within the sense making task had a mean of 3.18 and a rank of 5 out of 5 tasks. The overall aggregate of the interview response frequency within the task of sense making was 18% or rank of 3 out of 5 tasks.

Finding 6: Social justice, equity, and gender equality. Social justice, equity, and gender equality issues also manifest during a crisis. This finding that emerged from the interview responses of the superintendents and was subtly captured in the major themes is related to social justice and equity for students and families who are economically challenged and racially diverse and afraid to access services and support during the wildfire crisis (McNulty et al., 2018). The five superintendents reported all communications were translated into languages associated with their student populations, but they also shared how some families had the economic means to leave town to get away from the fire, smoke, and ash, but many more had to live in evacuation centers, tents, or move in with multiple families in one residence. The difference in homes with air filtration systems and properly sealed windows and doors and homes that have none of those amenities was another equity issue for students when schools were closed. Parents called the superintendents begging them to open school because they had no one to care for their children because they could not afford to take off from work.

Gender equality was another social justice and equity discovery when the three female superintendents shared interactions with male public leaders in their respective communities different than those of their two male counterparts. These interactions included dismissive and condescending tones and isolated decisions affecting the school district without involving the female superintendent. The tasks do not explicitly include social justice and equity elements that arise during a crisis. Social justice and equity issues became more apparent during the crisis and were exacerbated during the time of this highly stressful and politically charged situation.

Learning

Finding 7: Crisis preparedness plans. Today's crisis preparedness plans only include traditional tactical operations, drills, evacuation plans, and communication procedures. A lack of professional learning on social-political challenges was the theme that emerged from the learning task. This deficiency in training related directly to the superintendents' statements that a crisis plan that only includes the traditional tactical and operational crisis management would not suffice in a crisis, especially given the nature of the speed and destruction of a wildfire (Crowe, 2013; Gainey, 2010; Shrivastava et al., 2013). A mutual aid network communication plan, as well as strategic action to build relationships with public leaders who make decisions in the organizations well before a crisis, was suggested by the superintendents interviewed.

An aggregate of the survey responses within the learning task had a mean of 3.45 and a rank of 4 out of 5 tasks. The overall aggregate of response frequency for the interview responses was 17% or rank of 4 out of 5 tasks. For both the qualitative data responses and the quantitative data responses, the result for learning was rated as the fourth task of five. Learning was the only task rated the same for both the survey and the interviews.

Finding 8: Communication systems. Inoperable communication systems do not allow superintendents to effectively lead and manage a crisis. Leading a school district through a crisis requires an intuitive ability to understand and navigate the social and political structures of the school district. Further, the ability to collaborate with those other public agencies facilitates the school district and the public agencies to move from crisis response to crisis recovery. The superintendents emphasized an area of

collaboration is the development of a communication system when infrastructure is destroyed or fails. Whether agencies, including the school district, can seize the opportunity to update, replace, or innovate new systems to move from crisis recovery to rebuilding and healing is uncertain (Boin et al., 2017; Crandall et al., 2013; Crow, 2013).

Accounting

Finding 9: Formal process to assess crisis leadership. Crisis preparedness plans do not include a formal process to collect and analyze documented decisions and outcomes during after-action reviews with an emphasis on the strength and weaknesses. What emerged from the data was the importance of formal and informal after-action reviews. Similar to an Office of Emergency Services (OES), the superintendents created a district version of OES that was staffed with the most dependable members of their departments crossing the boundaries of job titles and positions. As the superintendents described the necessity for a dependable team, it was clear the decisions were decentralized rather than top-down (Boin, 2004; Boin & McConnell, 2007; Boin et al., 2017). Key to this task is the process of self-reflection and the value of acknowledging the strengths and weaknesses of the leadership decisions and the school district's implementation of those decisions (coordination). When conducted democratically, without blame, and keeping in mind the psychological and emotional state of the school community, this task helps bring closure to the crisis (Boin et al., 2017; McEntire et al., 2002).

An aggregate of the survey responses within the task of accounting had a mean of 3.78 and a rank of 2 out of 5 tasks. The overall aggregate of the interview response frequency within the task of accounting was 11% or rank of 5 out of 5 tasks. The

difference between the survey ranking of 2 and the interview frequency of responses of 5 can be attributed to the interpretation of the survey questions of 27 superintendents whose school districts were only slightly impacted by the wildfires in comparison with the five superintendents whose districts were heavily impacted. The contrasting results between the quantitative and qualitative data indicate a difference in the way the task of accounting is perceived by superintendents and the level of preparedness with both tactical and social-political crisis leadership.

The Interconnection of the Five Critical Tasks

   Finding 10: Five critical tasks are interconnected. The CTSCL are interconnected and therefore a continuum rather than isolated tasks. Eleven major themes emerged from the interview responses of the superintendents and are represented in each of the CTSCL framework. However, these 11 themes also revealed the interconnectedness of the five critical tasks as they overlapped into more than one task and demonstrates the tasks, not isolated segments of a framework, functioning individually. The superintendents' experiences were described by the tasks in an overlapping continuum that began with the first flames of the wildfire and ends with community restoration (Figure 4). Hence the CTSCL framework is not a step-by-step plan for superintendents to more effectively lead their districts through a crisis but a continuum that shifts forward and backward depending on the progression of the crisis and the state of the school community.
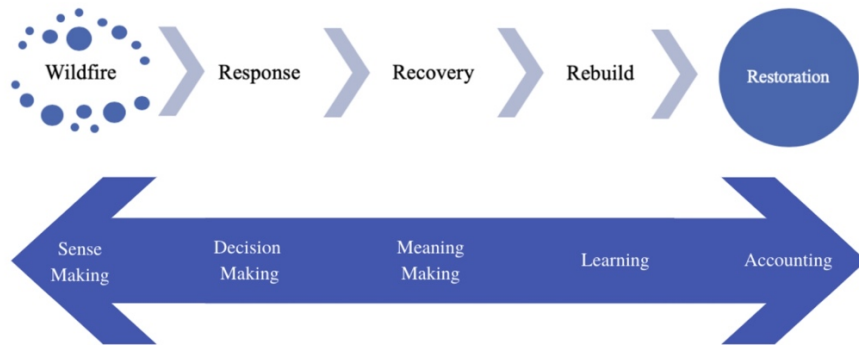
Figure 4. The continuum of the Five Critical Tasks of Strategic Leadership framework.

Unexpected Findings

An unexpected finding was the degree to which the five superintendents interviewed were aligned in their beliefs and values during a crisis. Although tactics and operations of the crisis were implemented, each superintendent emphasized the importance of their social-political network to coordinate the decisions made. These five superintendents also stressed at connections with students, staff, and families, and caring for their well-being was the priority. The CTSCL was utilized by the five superintendents; however; they did not have a label for it.

Social justice, equity, and gender equality findings were another unexpected finding that surfaced. Although unexpected in the course of this study, it is not surprising that these findings appeared in the experiences of the superintendents. Issues of social justice, equity, and gender equality are constantly questioned or supported by the established institutional belief systems of school districts during times of normal operation. These issues do not magically disappear when a crisis occurs.

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Conclusions

Conclusions 1

Superintendents who use all of the CTSCL framework will be more effective in leading and managing a crisis. The statistical data and major themes of this study support the superintendents' identification and description of their experiences as a continuum of tasks that flows forward and backward depending upon the progression or regression of the crisis rather than a step-by step process. Also considered to be along this continuum of strategic tasks was the social-political and psychological and emotional state of the school community (Boin et al., 2017; McEntire et al., 2002).

Conclusion 2

A social-political network and communication plan must be a formal part of the superintendent's crisis preparedness plan. The social-political nature of a crisis was evident in seven of 11 themes and dominated four of those seven themes, a result that supports the significance of the decision-making and coordination task. This finding is also supported by the essential need for social-political decision-making and relationships to ensure schools could safely reopen and support services available for students and staff (Boin et al., 2013; Boin & Renaud, 2013; Flin, 1996; White et al., 2007). Superintendents must establish a social-political network well in advance of the next crisis. The qualitative data produced a theme specific to the development of relationships and communication across jurisdictions because each of the superintendents emphasized that they could not have made appropriate decisions without information from and coordination with the public agencies throughout their mutual aid network.

Conclusion 3

Translated, timely, accurate, and honest messaging through various communication platforms must be utilized by superintendents during a crisis. Many districts were faced with no electricity and Internet, and providing information to the school community was challenging, especially for English learner families. Social networks such as Facebook and Twitter as well as radio broadcasts became the mode for much of the communication. Meaning making was the second most significant task of the five critical tasks as evidenced by having the highest aggregate mean of 4.02 and being supported by four of the five superintendents who lost all ability to communicate with the school community for a period of time during the crisis (ERCA Group, 2016; McCarty, 2012; McEntire et al., 2002; Murawski, 2011; Porter, 2010).

Conclusion 4

Superintendents must incorporate the CTSCL framework into their traditional crisis preparedness plan to effectively lead their district during a crisis. Three themes with the highest frequency of responses were related to the social-political environment and the significance it has on crisis leadership. Strategic tasks infused with an understanding of the social-political nature of a crisis are paramount for superintendents to manage the competing interests of their school community and the public (Boin et al., 2008, 2017; White et al., 2007). The CTSCL framework is a continuum on which the tasks overlap, progress, and regress and that superintendents can use to confront the social-political ramifications when leading their districts from the wildfire response to school community restoration.

Conclusion 5

Superintendents who do not receive professional training in the CTSCL and gain social-political consciousness will be unsuccessful in achieving closure to the crisis. The interview data revealed little training for crisis leadership preparedness in general, and even less in the area of crisis leadership frameworks that address social-political ramifications, communication, and mutual aid networks, and advocacy during a crisis (Crowley, 2011; Ingenito, 2005; McEntire et al., 2002; Porter, 2010; White et al., 2007). This type of training for superintendents is essential for understanding how to navigate the social-political agendas of public leaders and agencies who are also dealing with the crisis and who may not include the superintendent at the table during decision-making that impacts the school district.

Conclusion 6

Trust in the superintendent's decisions and management of the wildfire crisis is essential for the school district to achieve restoration. The superintendents shared in their interview that trust building occurred when they were visible, flexible, used common sense, and advocated for the school community. In other words, doing the right thing, facilitating transparency, taking risks, modeling reasonableness, and interrupting the status quo leads to a shift in culture. These actions built a culture of caring that led to trust, hope, and inspiration (Boin et al., 2017; Crowley, 2011; Kouzes & Posner, 2006). A social-political climate of trust, hope, and inspiration allow the superintendent greater permissive consensus (passive approval or not active disapproval) to make decisions and create policies quickly during a crisis (Boin et al., 2013, 2017; Langdal & von Sydow, 2007).

Conclusion 7

Superintendents must prioritize safety and emotional well-being above all else during a crisis. Resonating from the interview data was the theme of flexibility and superintendent voice and advocacy that translates to care and empathy for the people within the school community. Superintendents conducted extensive outreach to students and staff assessing their needs and then working with public agencies and nonprofits to provide the appropriate supports. This level of connection took a tremendous amount of resources to accomplish, but it was necessary to determine the overall state of the school community and how to plan for restoration. Connection before content also demonstrates the superintendents' unconditional care and compassion that lead to increased trust (Crowley, 2011; McNulty et al., 2018).

Conclusion 8

Superintendents who are unresponsive to the inequitable and unequal treatment of certain people and groups within the school community are failing public education and the principals of democracy. Ignoring social justice, equity, and gender equality is a reality for many in general, but during a crisis, it is immoral (Domínguez & Yeh, 2018; Perry, 2018). The superintendents revealed in their interviews personal examples of gender bias as well as social justice and equity issues for economically challenged and racially diverse families. The CTSCL are not explicit about scenarios where social justice, equity, and gender equality factors may arise during a crisis; therefore, an adjustment of the critical tasks is warranted.

Implications for Action

Using existing structures for professional learning and networking seems to be the most logical vehicle for the proposed training for superintendents and other school administrators. The unknown is whether these institutions are willing to change long-standing practices about what is taught, who is teaching, and who has access to be the teacher or the learner in this training. When providing professional learning on crisis preparedness with the CTSCL framework, other key elements emerge from the training because they are a part of each task. These include trust, advocacy, flexibility, doing the right thing, listening, and connection.

Implication 1: Revise the Critical Tasks

The CTSCL framework should be revised to include social justice, equity, and gender equality viewpoints and strategies (Domínguez & Yeh, 2018; Perry, 2018). This revised framework would be called the Critical Tasks for Strategic Social Justice Crisis Leadership.

Implication 2: Partner With the National Equity Project

Superintendents will be required to attend social justice and equity training with the National Equity Project (NEP) that certifies their ability to lead their school district with heart and empathy for students suffering some form of discrimination, harassment or segregation in school (ERCA Group, 2016). Certification by the NEP will be a criterion for employment as a superintendent in California.

Implication 3: Partner With CSBA and NSBA

Create a partnership with California School Boards Association (CSBA) and National School Boards Association (NSBA) to provide professional development for

superintendents and school board members on social-political crisis preparedness using the Critical Tasks for Strategic Social Justice Crisis Leadership as the foundation. Utilizing the Masters in Governance courses or workshops at the annual CSBA and NSBA conferences to train superintendents and board members would make use of existing structures for professional learning.

Implication 4: Partner With ACSA and CALSA

Create a partnership with the Association of California School Administrators (ACSA) and the California Association of Latino Superintendents and Administrators (CALSA) to provide professional development for all school administrators on the social-political crisis preparedness using the Critical Tasks for Strategic Social Justice Crisis Leadership as the foundation. Engaging CALSA is essential because of their connection with Latinx leader and school districts throughout California. The voice of Latinxs and Latinx leaders regarding the social-political agenda during a crisis is crucial for understanding how to support all people impacted by a crisis (Domínguez & Yeh, 2018; Perry, 2018).

Implication 5: Partner With Administrative Credentialing Programs

Create partnerships with colleges and university administrative credentialing programs to provide professional development early in the career of potential school administrators on the social-political crisis preparedness using the Critical Tasks for Strategic Social Justice Crisis Leadership as the foundation (Antonucci, 2012; Darling-Hammond et al., 2007). Ideally, this training would be a part of course where the potential administrator develops a crisis preparedness plan that includes both tactical

operations and strategic tasks. The course can be titled, "What They Didn't Teach in Admin School and Should Have."

Implication 6: Crisis Preparedness Training Across Jurisdictions

Collaborate with the city manager and the county administrator to provide training for administrators using the Critical Tasks for Strategic Social Justice Crisis Leadership as the foundation (Aldrich, 2012). Once a cadre of administrators representing each of the jurisdictions is trained, they can train staff within their departments and schools.

Implication 7: Crisis Preparedness Plan Across Jurisdictions

Much like the California Department of Education (CDE) requires each school to submit a safety plan to the school board and then to the CDE, the city, county, and school districts will have a joint crisis preparedness plan that includes a tactical and operational plan as well as the critical and strategic tasks plan (Aldrich, 2012; Crowe, 2013). For large counties and school districts, the crisis preparedness plans can be divided into regions. Funding allocations to the city, county, and school district will be contingent upon the submission of this plan to the CDE and the Office of Emergency Services (Cal OES).

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Recommendations for Further Research

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The recommendations for further research are based on the conclusions and implications of this research study. School superintendents in California and across the nation face tremendous internal and external pressures with the influx of state reforms in funding, new academic standards, and the increased need for social-emotional support creating additional demands in an already complex environment (Brickman et al., 2004;

Dunbar, 2013; McEntire, 2000; Porter, 2010). Add a wildfire crisis to a superintendent's responsibilities and his or her leadership will be tested to its maximum capabilities. Such was the case with the superintendents participating in this study. Their collective experiences shaped the direction of this study and recommendations for further research.

Recommendation 1: Replication of This Study

This study provides a rich beginning for many other studies and comes from a school superintendent perspective. It is recommended this study be replicated with city managers, county administrators, sheriff, chiefs of police, fire captains, and county and state officials who also led their organization through a wildfire crisis. This study could also be replicated using a different type of crisis or in another state or country.

Recommendation 2: Crisis Preparedness and Social Justice

A study of contemporary crisis management theory and social justice and equity theory should be conducted to develop a modified CTSCL that encompasses within tasks specific constructs of social justice, equity and gender equity. Discovering the level of inequities and unjust treatment of certain populations during a crisis would need to be conducted as a part of this research.

Recommendation 3: Comparison of Traditional Crisis Preparedness to the Use of Both Traditional and Contemporary.

A research study comparing the use of only traditional crisis preparedness with the use of both traditional and contemporary crisis preparedness by leaders during various types of crises is an area to explore. A correlation between the demographics of the leader and the type of crisis preparedness he or she utilizes should be included in the study.

Recommendation 4: Crisis Preparedness Training

A comprehensive research study on the extent and type of crisis preparedness training of leaders who have led their organization through a crisis would be a study to undertake given the researcher's conclusions. Included in this study should be a review of artifacts that include the organization's crisis preparedness plan and training records of all members of the organization.

Concluding Remarks and Reflections

On Sunday, October 8, 2017 at 9:43 p.m., the Tubbs fire ignited near Calistoga and my life changed forever. By midnight, fire officials called for a mandatory evacuation from Calistoga to eastern Santa Rosa. At 1:30 a.m., one of my board members called to see whether I knew about the fires. I did because I had been receiving Nixle alerts on my phone and members of my cabinet had been calling because I was 100 miles from Santa Rosa. By 2:00 a.m., my board member's home burned completely along with another of my board member's whose home also burned to the ground. I was in my car headed to Santa Rosa as flames engulfed their homes.

As I drove to Santa Rosa, I was on my phone calling the leaders in my social-political network to gather information about the wildfire and simultaneously receiving calls from many of them. The information I was receiving from a variety of public leaders in my social-political network was the uncertainty of where the Tubbs wildfire was headed and how far into Santa Rosa it would burn. Making sense of the situation to begin making decisions was highly important. The public leaders were asking me whether evacuation shelters could be opened and whether buses were available to evacuate people from the East Santa Rosa area. During my travel back, I arranged for

two evacuation shelters to open at two of our schools and asked our bus transportation to help with evacuations.

By 6 a.m., and with the information I had gathered, I closed schools for October 9th with the first of many messages to the school community. Our evacuation shelters were open by 7 a.m., less than 9 hours after the wildfire erupted, and a command center in place at the district office. At the same time, I began to hear from my network that one of our schools had been destroyed along with our school farm. The smoke in the air was thick and heavy, and the Tubbs fire continued uncontrolled. I was now a superintendent leading and managing a crisis.

The next 4 weeks proved to be the most challenging of my 35 years in public education. The intensity of the situation coupled with the internal and external pressures of competing interests was a test of my personal and professional strength and fortitude (Boin et al., 2017). These competing interests included locating students and staff, safety, psychological trauma, facilities, district and city infrastructure, communication systems, insurance adjusters, environmental engineers, soil and water scientists, professional cleaners, media coverage, donations, legislators, town hall meetings, state and federal agencies (FEMA, Cal OES, CDE, Air Resources Board, Public Health, Army Corp, State Architects) were a test of my leadership capacity as I worked to reopen 24 schools. These competing interests represent only a partial list for which I was never trained. I am not referring to training in the content of these competing interests but how to balance them all and maintain my values of connection before content and leading from the heart during a crisis.

Fortunately, I was in the Brandman doctoral program when the Tubbs fire took place and balancing competing interest as well as many other leadership conditions was addressed through the university's organizational developments and transformational change emphasis. The impact of the wildfire in conjunction with earning my doctorate was so significant that I changed my dissertation topic to study crisis leadership and management of superintendents during a wildfire. This dissertation process provided me the freedom to explore how my leadership style could be effective during a crisis, which is notable since this is a heuristic study and my experiences were a part of the data collected. The discovery of the Five Critical Tasks for Strategic Crisis Leadership framework, thanks to Dr. Larick, brought both research and validity to a crisis leadership and management that was beyond just tactics and operations. The tasks create the space for crisis leadership to consider the humanity of a crisis and identify the social-political factors that impede or propel decisions and the coordination of those decisions across jurisdictions.

Further validations of the tasks' useful function during a wildfire crisis occurred with the interviews data collected from the other four superintendents. We had very similar experiences despite differences in location and size of wildfires. We also experienced the devastation through the students, families, and staff we serve and not through the lens of district operations and financial losses. The discovery that I was not alone in my leadership style during a crisis and there was research to support this stance freed me personally and professionally as a leader and changed my trajectory as a superintendent.

My life has changed forever because the Tubbs fire not only burned a path through Santa Rosa, but it also ignited a path for me toward a new future. From a professional standpoint, the implications and recommendations presented in this chapter will be initiated by me, specifically the training of superintendents and other school administrators. Bringing the critical tasks with a social justice modification into the traditional crisis preparedness trainings is exciting and purpose driven. On a personal level, I have discovered my strength is boundless and my love for my students, families, and staff is unconditional. I may have had an inkling of this before the wildfires, but it was solidified as a result of the wildfire crisis. As I reflect about this research and my doctoral studies, I am reminded of one of our earliest assignments and share it as a testament to both my steadfast values and how my life has changed because they were validated.

The activities in *Becoming a Resonant Leader* helped clarify and then reveal my leadership values driven by beliefs and carried out through my behaviors (McKee, Boyatzis, & Johnston, 2008):

Love, Authenticity, Courage, Integrity, and Freedom.

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APPENDICES

APPENDIX A

Top 20 Most Destructive California Wildfires

Top 20 Most Destructive California Wildfires

	FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1	CAMP FIRE (Under Investigation)	November 2018	Butte County	153,336	18,804	85
2	TUBBS (Electrical)	October 2017	Napa & Sonoma	36,807	5,636	22
3	TUNNEL - Oakland Hills (Rekindle)	October 1991	Alameda	1,600	2,900	25
4	CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
5	VALLEY (Electrical)	September 2015	Lake, Napa & Sonoma	76,067	1,955	4
6	WITCH (Powerlines)	October 2007	San Diego	197,990	1,650	2
7	WOOLSEY (Under Investigation)	November 2018	Ventura	96,949	1,643	3
8	CARR (Human Related)	July 2018	Shasta County, Trinity County	229,651	1,614	8
9	NUNS (Powerline)	October 2017	Sonoma	54,382	1,355	3
10	THOMAS (Powerline)	December 2017	Ventura & Santa Barbara	281,893	1,063	2
11	OLD (Human Related)	October 2003	San Bernardino	91,281	1,003	6
12	JONES (Undetermined)	October 1999	Shasta	26,200	954	1
13	BUTTE (Powerlines)	September 2015	Amador & Calaveras	70,868	921	2
14	ATLAS (Powerline)	October 2017	Napa & Solano	51,624	783	6
15	PAINT (Arson)	June 1990	Santa Barbara	4,900	641	1
16	FOUNTAIN (Arson)	August 1992	Shasta	63,960	636	0
17	SAYRE (Misc.)	November 2008	Los Angeles	11,262	604	0
18	CITY OF BERKELEY (Powerlines)	September 1923	Alameda	130	584	0
19	HARRIS (Undetermined)	October 2007	San Diego	90,440	548	8
20	REDWOOD VALLEY (Powerline)	October 2017	Mendocino	36,523	546	9

**"Structures" include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.
***This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

CAL FIRE

3/14/2019

APPENDIX B

Top 20 Deadliest California Wildfires

Top 20 Deadliest California Wildfires

	FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1	**CAMP FIRE** *(Under Investigation)*	**November 2018**	**Butte County**	**153,336**	**18,804**	**85**
2	**GRIFFITH PARK** *(Unknown)*	October 1933	Los Angeles	47	0	29
3	**TUNNEL - Oakland Hills** *(Rekindle)*	October 1991	Alameda	1,600	2,900	25
4	**TUBBS** *(Electrical)*	October 2017	Napa & Sonoma	36,807	5,643	22
5	**CEDAR** *(Human Related)*	October 2003	San Diego	273,246	2,820	15
6	**RATTLESNAKE** *(Arson)*	July 1953	Glenn	1,340	0	15
7	**LOOP** *(Unknown)*	November 1966	Los Angeles	2,028	0	12
8	**HAUSER CREEK** *(Human Related)*	October 1943	San Diego	13,145	0	11
9	**INAJA** *(Human Related)*	November 1956	San Diego	43,904	0	11
10	**IRON ALPS COMPLEX** *(Lightning)*	August 2008	Trinity	105,855	10	10
11	**REDWOOD VALLEY** *(Powerline)*	October 2017	Mendocino	36,523	544	9
12	**HARRIS** *(Undetermined)*	October 2007	San Diego	90,440	548	8
13	**CANYON** *(Unknown)*	August 1968	Los Angeles	22,197	0	8
14	**CARR** *(Human Related)*	July 2018	Shasta County, Trinity County	229,651	1,614	8
15	**ATLAS** *(Powerline)*	October 2017	Napa & Solano	51,624	781	6
16	**OLD** *(Human Related)*	October 2003	San Bernardino	91,281	1,003	6
17	**DECKER** *(Vehicle)*	August 1959	Riverside	1,425	1	6
18	**HACIENDA** *(Unknown)*	September 1955	Los Angeles	1,150	0	6
19	**ESPERANZA** *(Arson)*	October 2006	Riverside	40,200	54	5
20	**LAGUNA** *(Powerlines)*	September 1970	San Diego	175,425	382	5

** Fires with the same death count are listed my most recent. Several fires have had 4 fatalties, but only the most recent are listed.
***This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

2/19/2019

APPENDIX C

Top 20 Largest California Wildfires

Top 20 Largest California Wildfires

	FIRE NAME *(CAUSE)*	DATE	COUNTY	*ACRES*	STRUCTURES	DEATHS
1	**MENDOCINO COMPLEX** *(Under Investigation)*	July 2018	Colusa County, Lake County, Mendocino County & Glenn County	**459,123**	280	1
2	**THOMAS** *(Powerlines)*	December 2017	Ventura & Santa Barbara	**281,893**	1,063	2
3	**CEDAR** *(Human Related)*	October 2003	San Diego	**273,246**	2,820	15
4	**RUSH** *(Lightning)*	August 2012	Lassen	**271,911 CA / 43,666 NV**	0	0
5	**RIM** *(Human Related)*	August 2013	Tuolumne	**257,314**	112	0
6	**ZACA** *(Human Related)*	July 2007	Santa Barbara	**240,207**	1	0
7	**CARR** *(Human Related)*	July 2018	Shasta County, Trinity County	**229,651**	1,614	8
8	**MATILIJA** *(Undetermined)*	September 1932	Ventura	**220,000**	0	0
9	**WITCH** *(Powerlines)*	October 2007	San Diego	**197,990**	1,650	2
10	**KLAMATH THEATER COMPLEX** *(Lightning)*	June 2008	Siskiyou	**192,038**	0	2
11	**MARBLE CONE** *(Lightning)*	July 1977	Monterey	**177,866**	0	0
12	**LAGUNA (POWERLINES)**	September 1970	San Diego	**175,425**	382	5
13	**BASIN COMPLEX** *(Lightning)*	June 2008	Monterey	**162,818**	58	0
14	**DAY FIRE** *(Human Related)*	September 2006	Ventura	**162,702**	11	0
15	**STATION** *(Human Related)*	August 2009	Los Angeles	**160,557**	209	2
16	**CAMP FIRE** *(Under Investigation)*	November 2018	Butte	**153,336**	18,804	85
17	**ROUGH** *(Lightning)*	July 2015	Fresno	**151,623**	4	0
18	**McNALLY** *(Human Related)*	July 2002	Tulare	**150,696**	17	0
19	**STANISLAUS COMPLEX** *(Lightning)*	August 1987	Tuolumne	**145,980**	28	1
20	**BIG BAR COMPLEX** *(Lightning)*	August 1999	Trinity	**140,948**	0	0

*There is no doubt that there were fires with significant acreage burned in years prior to 1932, but those records are less reliable, and this list is meant to give an overview of the large fires in more recent times.
**This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.

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APPENDIX D

Superintendent's Survey for Crisis Leadership

Superintendent's Survey for Crisis Leadership

1. To what extent did you create conditions that facilitated a shared early recognition of a threat caused by the fires?

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

2. To what extent did you create, facilitate, and rehearse a sensemaking method during the fires? (Sensemaking is collective understanding of the nature, characteristics, consequences, and potential scope and effects of an evolving threat).

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

3. To what extent did you carefully deliberate which decisions should be made about the fire impact?

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

4. To what extent were the decision made after some form of due process?

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

5. To what extent did you monitor and assess forms of vertical and horizontal cooperation? (Vertical and horizontal cooperation refers to cooperation among a variety of organizations).

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

6. To what extent did you facilitate effective cooperation and intervene where cooperation was lacking or dysfunctional?

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

7. To what extent did you actively monitor the state of critical (life-sustaining) systems and the connections between them?

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

1

8. To what extent did you access expertise with regard to these critical (life-sustaining) systems?

Not at all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

9. To what extent did you offer a clear interpretation of the crisis and explain how you intended to lead the school district out of it?

Not a all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

10. To what extent did you actively cooperate with communications professionals to ensure they had timely and correct information for dissemination to the public?

Not at all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

11. To what extent did public leaders try to present a transparent and constructive account of their (in)actions before and during the crisis?

Not at all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

12. To what extent did you present a transparent and constructive account of your (in)actions before and during the crisis?

Not at all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

13. To what extent did you allow for reflection on the effects of chosen courses of action?

Not at all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

14. To what extent did you encourage and tolerate negative feedback?

Not at all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

15. To what extent did you record crisis management proceedings to facilitate learning by outsiders?

Not at all	Very little	Some	Moderate	Great	Always
◯	◯	◯	◯	◯	◯

16. To what extent did you actively involve yourself in crisis preparations?

Not at all	Very little	Some	Moderate	Great	Always
○	○	○	○	○	○

Superintendent Interview Protocol Script and Interview Questions

Superintendent Interview Protocol Script and Interview Questions Interviewer:

Diann Kitamura

Interview time planned: Approximately one hour

Interview place: Participant's office or other convenient agreed upon location

Recording: Digital voice recorder

Written: Field and observational notes

<div align="center">Make personal introductions.</div>

Opening Statement: [Interviewer states:] I greatly appreciate your valuable time to participate in this interview. To review, the purpose of this explanatory sequential mixed methods study. The purpose of this mixed methods heuristic research study was to identify and describe the crisis management practices and policies employed by school superintendents during the 2017-18 wildfires in California using Five Critical Tasks of Strategic Crisis Leadership (sensemaking, meaning making, decision-making and coordination, learning, accountability) framework. In addition, this framework was also used to study the crisis leadership and management experiences of superintendents.

The questions are written to elicit this information.

Interview Agenda: [Interviewer states:] I anticipate this interview will take about an hour today. As a review of the process leading up to this interview, you were invited to participate via letter, and signed an informed consent form that outlined the interview process and the condition of complete anonymity for the purpose of this study. We will begin with reviewing the Letter of Invitation, Informed Consent Form, Brandman University's Participant's Bill of Rights, and the Audio Release Form. Then after reviewing all the forms, you will be asked to sign documents pertinent for this study,

which include the Informed Consent and Audio Release Form. Next, I will begin the audio recorder and ask a list of questions related to the purpose of the study. I may take notes as the interview is being recorded. If you are uncomfortable with me taking notes, please let me know and I will only continue on with the audio recording of the interview. Finally, I will stop the recorder and conclude our interview session. After your interview is transcribed, you will receive a copy of the complete transcripts to check for accuracy prior to the data being analyzed. Please remember that anytime during this process you have the right to stop the interview. If at any time you do not understand the questions being asked, please do not hesitate to ask for clarification. Are there any questions or concerns before we begin with the questions?

Definitions

Sense Making

Sense making is the collecting and processing of information that will help crisis leaders to detect emerging crisis and understand the significance of what is going during a crisis (Boin et al., 2017).

Decision-Making and Coordination

Decision-making and coordination is making critical calls on strategic dilemmas and orchestrating a coherent response to the those implemented decisions (Boin et al., 2017). When coordinating the implementation of these decisions during a crisis a leader must also consider the mutual aid network needed to carry out the decision and how leaders communicate and foster interagency collaboration are essential to the strategic process (Security, 2008, 2017; U. S. Department of Education, 2007).

Meaning Making

Meaning making is offering a situational definition and narrative that is convincing, helpful and inspiring to citizens and responders (Boin et al., 2017).

Accounting

Accounting is explaining in a public forum what was done to prevent and manage the crisis and why (Boin et al., 2017).

Learning

Learning is determining the causes of the crisis, assessing the strengths and weaknesses of the responses to it and undertaking remedial actions based on this understanding (Boin et al., 2017) A crisis may present an opportunity to change policies, systems or practices that were found to be inadequate during the crisis.

Interview Questions:

1. Would you please state your name, title, and school district for the recording?

2. How long have you been a superintendent?

3. In now many school districts have you been a superintendent?

4. What were the major factors that finds you as a superintendent?

5. Tell me about your school district? (enrollment, demographics, glow, grow)

6. Tell me where you were when you first heard about the wildfire in your community?

7. What were the first thoughts when your heard about the wildfires?

8. What was the first thing you did after heard about the fires?

9. Describe your initial thoughts and feelings in the first 24 hours of the fire?

10. How did you collect and process information about the fire?

11. Describe how synthesized this information and communicated with your families, staff, and community?

12. What were the factors you considered when you made decisions during the first days of the fire?

13. Who did you rely on and work with as you made these critical decisions?

14. Who did you coordinate with to implement these decisions?

15. In what ways did you help your families, staff, and community understand and find meaning about what was happening with the fires?

16. How did explain publicly what was done to prevent and manage the crisis? (why)

17. In what ways did you assess the strengths and weakness of your response to the fire?

18. How will address the weaknesses and leverage the strengths of your response to the crisis?

19. What is you greatest learning about yourself as a leader as a result of the wildfires?

20. What else would you like to share with me about your experiences as a leader during the fire crisis?

APPENDIX F

Letter of Invitation

January 2018

Dear Superintendent,

I am in Brandman University's Doctor of Education in Organizational Leadership program in the School of Education. I am conducting a mixed methods heuristic inquiry study to identify and describe the crisis management practices and policies employed by school superintendents during the 2017-18 wildfires in California using Five Critical Tasks of Strategic Crisis Leadership framework which are sensemaking, meaning making, decision-making and coordination, accounting, learning. In addition, the crisis leadership and management experiences of superintendents during the 2017-2018 wildfires was also studied using this framework.

I am asking for your assistance in the study by participating in an interview which will take approximately 60 minutes and will be setup at a time and location convenient for you. If you agree to participate in the interview, you can be assured that it will be completely confidential. No names will be attached to any notes or records from the interview. All information will remain in locked files, accessible only to the researchers. No employer will have access to the interview information. You will be free to stop the interview and withdraw from the study at any time. You are also encouraged to ask any questions that will help you understand how this study will be performed and/or how it will affect you. Further, you may be assured that the researchers are not in any way affiliated with your school district. The research investigator, Diann Kitamura, is available at xxxxx@xxxxx.xxx or by phone at xxx-xxx-xxxx, to answer any questions or concerns you may have. Your participation would be greatly appreciated.

Sincerely,

Diann Kitamura, Doctoral Candidate, Ed.D.

APPENDIX G

Informed Consent Form

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

INFORMATION ABOUT: Crisis Leadership and management of School
Superintendents
        During the 2017-2018 California Wildfires

RESPONSIBLE INVESTIGATOR: Diann Kitamura, Doctoral Candidate

PURPOSE OF THE STUDY: The purpose of this mixed methods heuristic research
study was to identify and describe the crisis management practices and policies employed
by school superintendents during the 2017-18 wildfires in California using Five Critical
Tasks of Strategic Crisis Leadership (sensemaking, meaning making, decision-making
and coordination, learning, accountability). The Five Critical Tasks of Strategic Crisis
Leadership was also used as a frame for studying the crisis leadership and management
experiences of superintendents during the 2017-2018 wildfires.

By participating in this research study, I agree to participate in an electronic
survey using Survey Monkey, which will take 10 – 15 minutes. In addition, I may also
volunteer to participate in a semi-structured, audio-recorded interview, which will take
place in person at my school site or by phone and will last about one hour. During the
interview, I will be asked a series of questions designed to allow me to share my
experiences as a superintendent, who has led a school district through the 2017-2018
wildfires in California and will take place in January through February 2018.

I understand that:

        1.   The possible risks or discomforts associated with this research are
minimal. It may be inconvenient to spend up to one hour in the interview.
However, the interview session will be held at my school site or at an agreed upon
location, to minimize this inconvenience. Surveys will also be utilized depending
upon participants scheduling availability.
        2.   The study will be audio-recorded, and the recordings will not be
used beyond the scope of this project. Audio recordings will be used to transcribe
the interviews. Once the interviews are transcribed, the audio and interview
transcripts will be kept for a minimum of three years by the investigator in a
secure location.
        3.   I will not be compensated for my participation in this study. The
possible benefit of this study is to determine whether the Five Critical Tasks of
Strategic Crisis Leadership (sensemaking, meaning making, decision-making and

coordination, learning, accountability) have any effect on the Superintendent's practices, policies, and experiences during a crisis such as a wildfire. The findings and recommendations from this study will be made available to all participants at the participant's request.

4. Any questions I have concerning my participation in this study will be answered by Diann Kitamura, Brandman University Doctoral Candidate. I understand that Mr. Wright may be contacted by phone at (xxx) xxx-xxxx or email at xxxxx@xxxxx.xxx. The dissertation chairperson may also answer questions: Dr. Keith Larick at xxxxx@xxxxx.xxx.

5. I understand that I may refuse to participate in or I may withdraw from this study at any time without any negative consequences. Also, the investigator may stop the study at any time.

6. I also understand that no information that identifies me will be released without my separate consent and that all identifiable information will be protected to the limits allowed by law. If the study design or the use of the data is to be changed, I will be so informed and my consent obtained. I understand that if I have any questions, comments, or concerns about the study or the informed consent process, I may write or call the Office of the Vice Chancellor Academic Affairs, Brandman University, 16355 Laguna Canyon Road, Irvine, CA 92618 Telephone (949) 341-9937.

I acknowledge that I have received a copy of this form and the Research participant's Bill of Rights.

I have read the above and understand it and hereby voluntarily consent to the procedure(s) set forth.

_____   _____

Signature of Participant or Responsible Party Date

_____   _____

Signature of Witness (if appropriate) Date

_____   _____

Signature of Principal Investigator Date

Research Participant's Bill of Rights

BRANDMAN UNIVERSITY INSTITUTIONAL REVIEW BOARD

Research Participant's Bill of Rights

Any person who is requested to consent to participate as a subject in an experiment, or who is requested to consent on behalf of another, has the following rights:

1. To be told what the study is attempting to discover.

2. To be told what will happen in the study and whether any of the procedures, drugs or devices are different from what would be used in standard practice.

3. To be told about the risks, side effects or discomforts of the things that may happen to him/her.

4. To be told if he/she can expect any benefit from participating and, if so, what the benefits might be.

5. To be told what other choices he/she has and how they may be better or worse than being in the study.

6. To be allowed to ask any questions concerning the study both before agreeing to be involved and during the course of the study.

7. To be told what sort of medical treatment is available if any complications arise.

8. To refuse to participate at all before or after the study is started without any adverse effects.

9. To receive a copy of the signed and dated consent form.

10. To be free of pressures when considering whether he/she wishes to agree to be in the study.

If at any time you have questions regarding a research study, you should ask the researchers to answer them. You also may contact the Brandman University Institutional Review Board, which is concerned with the protection of volunteers in research projects. The Brandman University Institutional Review Board may be contacted either by telephoning the Office of Academic Affairs at (949) 341-9937 or by writing to the Vice Chancellor of Academic Affairs, Brandman University, 16355 Laguna Canyon Road, Irvine, CA, 92618.

Brandman University IRB　　　　　　　　Adopted　　　　　　　　November 2013

APPENDIX I

Audio Release Form

RESEARCH STUDY TITLE: Crisis Leadership and management of School
Superintendents during the 2017-2018 California Wildfires

BRANDMAN UNIVERSITY
16355 LAGUNA CANYON ROAD
IRVINE, CA 92618

     I authorize Diann Kitamura, Brandman University Doctoral Candidate, to record
my voice. I give Brandman University and all persons or entities associated with this
research study permission or authority to use this recording for activities associated with
this research study.

     I understand that the recording will be used for transcription purposes and the
information obtained during the interview may be published in a journal/dissertation or
presented at meetings/presentations.

     I will be consulted about the use of the audio recordings for any purpose other
than those listed above. Additionally, I waive any right to royalties or other compensation
arising correlated to the use of information obtained from the recording.

     By signing this form, I acknowledge that I have completely read and fully
understand the above release and agree to the outlined terms. I hereby release any and all
claims against any person or organization utilizing this material.

_____   _____

Signature of Participant or Responsible Party Date

APPENDIX J

Statistical Results of Superintendent Survey Responses

Table I1

Survey of Superintendent Responses to Individual Questions

Critical task	Survey question												
Meaning making	To what extent did you offer a clear interpretation of the crisis and explain how you intended to lead the school district out of it?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	4.55%	1	0.00%	0	9.09%	2	54.55%	12	31.82%	7	22	4.09

Critical task	Survey question												
Meaning making	To what extent did you actively cooperate with communications professionals to ensure they had timely and correct information for dissemination to the public?												
	Not at all		Very little		Some		Moderate		Great		Always			Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	4.76%	1	9.52%	2	4.76%	1	47.62%	10	33.33%	7	22	3.95

Critical task	Survey question												
Accounting	To what extent did public leaders try to present a transparent and constructive account of their (in)actions before and during the crisis?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	0.00%	0	13.64%	3	22.73%	5	40.91%	9	22.73%	5	22	3.73

Accounting	To what extent did you present a transparent and constructive account of your (in)actions before and during the crisis?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	0.00%	0	13.64%	3	4.55%	1	68.18%	15	13.64%	3	22	3.82

Decision-making & coordination	To what extent did you carefully deliberate which decisions should be made about the fire impact?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	4.76%	1	0.00%	0	4.76%	1	4.76%	1	52.38%	11	33.33%	7	21	4

Decision-making & coordination	To what extent were the decisions made after some form of due process?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	4.55%	1	0.00%	0	4.55%	1	22.73%	5	63.64%	14	4.55%	1	22	3.55

Decision-making & coordination	To what extent did you monitor and assess forms of vertical and horizontal cooperation? (Vertical & horizontal cooperation refers to cooperation among a variety of organizations).												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	4.76%	1	0.00%	0	28.57%	6	52.38%	11	14.29%	3	21	3.71

Decision-making & coordination	To what extent did you facilitate effective cooperation and intervene where cooperation was lacking or dysfunctional?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	4.55%	1	9.09%	2	22.73%	5	54.55%	12	9.09%	2	22	3.55

Decision-making & coordination	To what extent did you actively monitor the state of critical (life-sustaining) systems and the connections between them?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	4.55%	1	4.55%	1	18.18%	4	50.00%	11	22.73%	5	22	3.82

Decision-making & coordination	To what extent did you access expertise with regard to these critical (life-sustaining) systems?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	4.55%	1	0.00%	0	22.73%	5	63.64%	14	9.09%	2	22	3.73

Learning	To what extent did you allow for reflection on the effects of chosen courses of action?												
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	0.00%	0	9.09%	2	31.82%	7	36.36%	8	22.73%	5	22	3.73

Learning	To what extent did you encourage and tolerate negative feedback?													
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	4.55%	1	18.18%	4	18.18%	4	31.82%	7	27.27%	6	22	3.59

Learning	To what extent did you record crisis management proceedings to facilitate learning by outsiders?													
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	13.64%	3	18.18%	4	18.18%	4	27.27%	6	18.18%	4	4.55%	1	22	2.32

Learning	To what extent did you actively involve yourself in crisis preparations?													
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	0.00%	0	0.00%	0	4.55%	1	13.64%	3	45.45%	10	36.36%	8	22	4.14

Sense making	To what extent did you create conditions that facilitated a shared early recognition of a threat caused by the fires?													
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	4.55%	1	9.09%	2	9.09%	2	22.73%	5	40.91%	9	13.64%	3	22	3.27

Sense making														
	To what extent did you create, facilitate, and rehearse a sensemaking method during the fires?													
	Not at all		Very little		Some		Moderate		Great		Always		Total	Mean
	%	N	%	N	%	N	%	N	%	N	%	N		
	4.55%	1	9.09%	2	13.64%	3	22.73%	5	45.45%	10	4.55%	1	22	3.09

APPENDIX K

NIH Certificate of Completion

Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Diann Kitamura** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 05/20/2017.

Certification Number: 2399343.